



# Technical System Audits (TSA)

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and  
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PQAO Training | February 27 & 28, 2024

# Overview

- What is a Technical Systems Audit (TSA)
- Conduct your own TSA
- Common Findings from 2022 CARB PQAO TSA
- The Corrective Action Plan Process

# What is a TSA?

- Required by 40 CFR Part 58, Appendix A, Section 2.5
- A TSA is required for a PQAO every three years
  - All monitoring organizations (MO) in PQAO within six years
- U.S. EPA and CARB collaborate to conduct TSAs of all MOs
  - U.S. EPA will visit CARB and three MOs
  - CARB will visit other MOs

40 CFR Part 58, Appendix A Section 2.5 states:

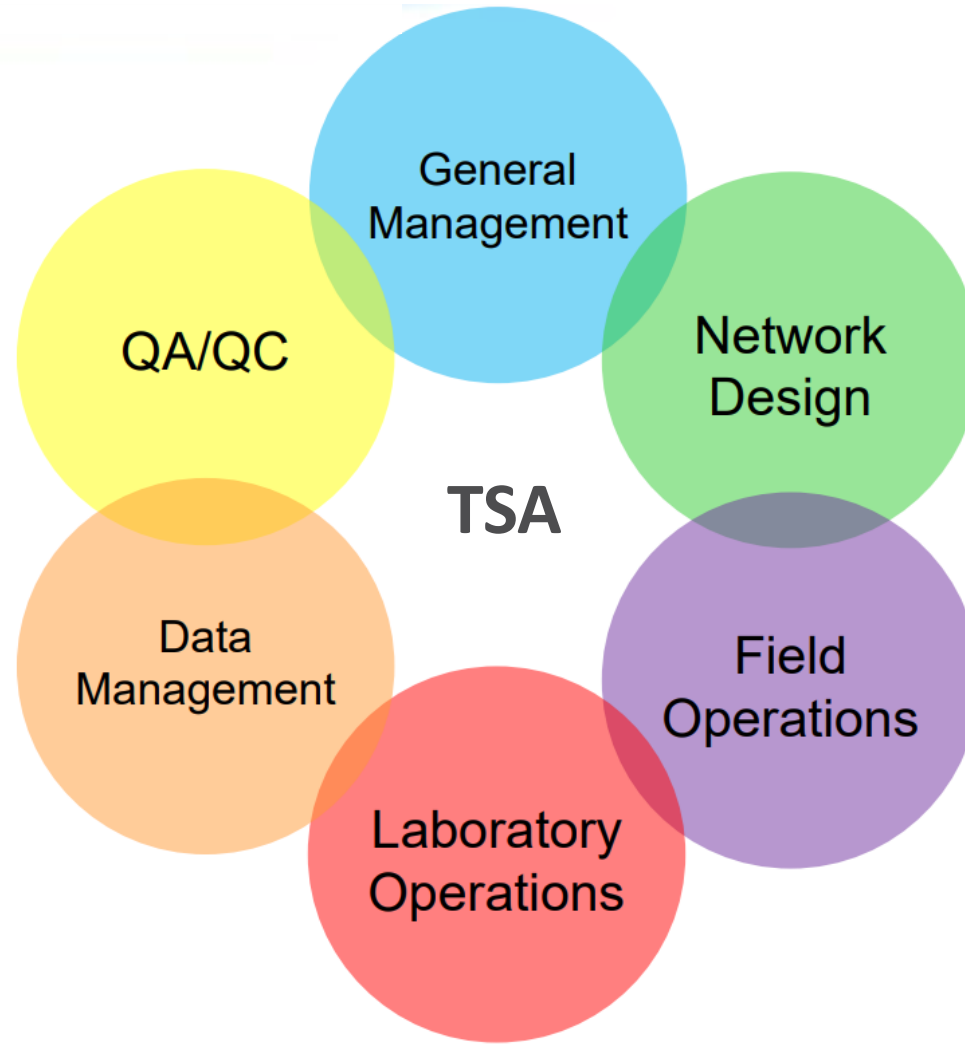
**2.5 Technical Systems Audit Program.** Technical systems audits of each PQAO shall be conducted at least every **3 years** by the appropriate EPA Regional Office and reported to the AQS. If a PQAO is made up of more than one monitoring organization, all monitoring organizations in the PQAO should be audited within 6 years (two TSA cycles of the PQAO). As an example, if a state has five local monitoring organizations that are consolidated under one PQAO, all five local monitoring organizations should receive a technical systems audit within a **6-year** period. Systems audit programs are described in **reference 10** of this appendix.



# What is a TSA Continued

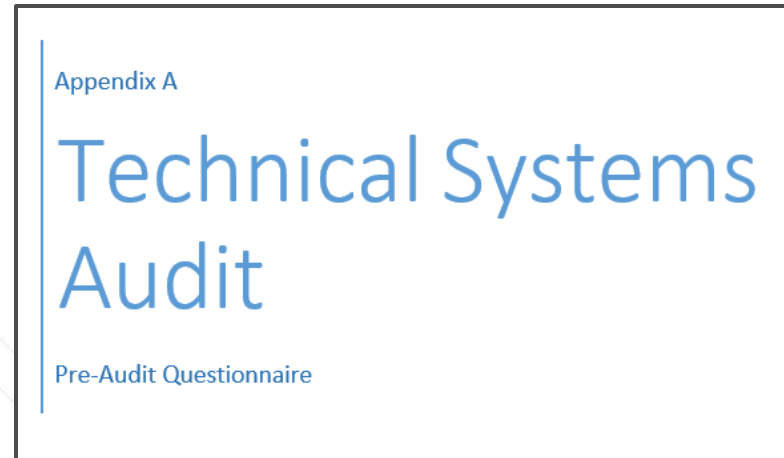
- On-site inspection of a PQAQO and MO's air monitoring program
  - Assess compliance with the collection, analysis, validation, and reporting of ambient air quality data
  - Strengthens PQAQO and MO's air monitoring program
- Three phases of the TSA
  - Preparation by CARB or U.S. EPA
  - Onsite visit
  - Report summarizing the findings
- Corrective action process

# Key Areas Addressed in a TSA



# Conduct Your Own TSA

- Don't wait for CARB or U.S. EPA
- Review the Pre-Audit Questionnaire
  - It will highlight concerns in your MO
  - Develop a TSA audit form based on your MO's quality system requirements
  - Develop audit schedule
  - Document findings in reports



# 2022 CARB TSA Common Findings

Missing or incomplete SOPs and QAPPs

Lack of verification of the zero air generator

Lack of independent review for multi level data review

Additional details in logbooks needed

Incorrect instrument/sampler setup

Insufficient training plans

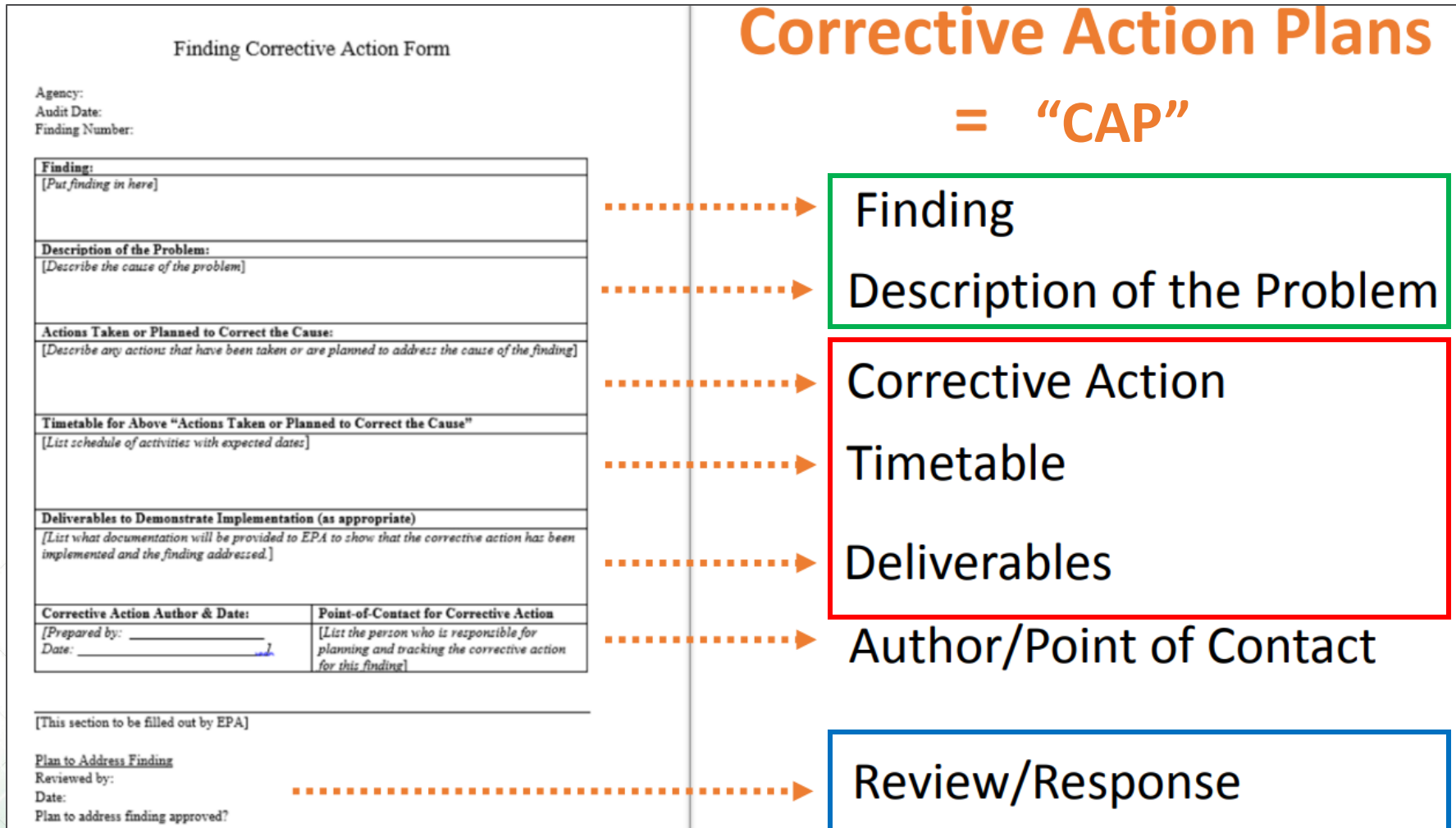
Inconsistent AQS coding

Expired standards

Corrective Actions incomplete



# Post-TSA Corrective Action





# CARB/U.S. EPA Review and Response

[This section to be filled out by CARB/U.S. EPA]

## Plan to Address Finding

Reviewed by:

Date:

Plan to address finding approved?

Remarks:

## Corrective Action Completed

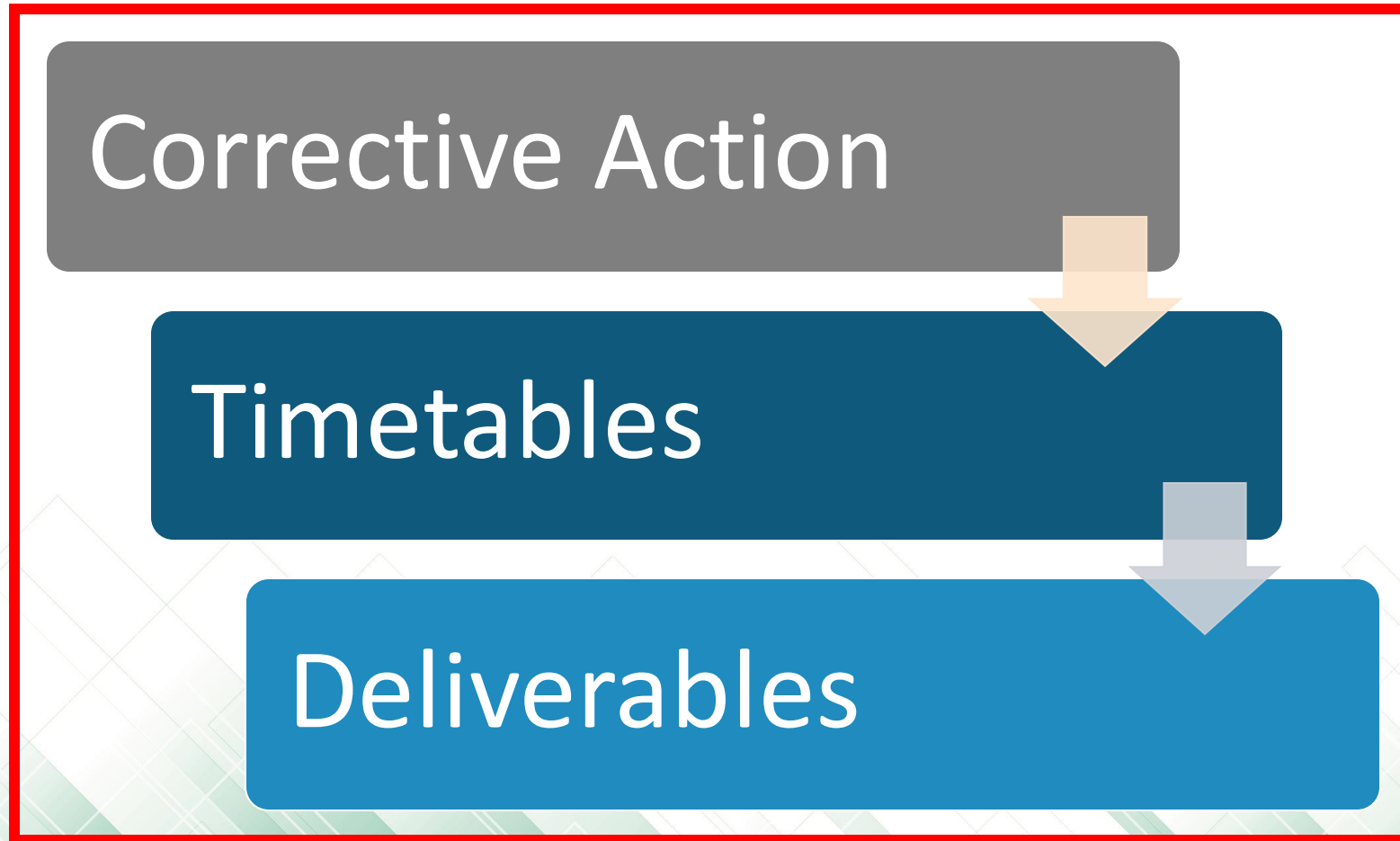
Reviewed by:

Date:

Was the finding adequately addressed to close the finding?

Remarks:

# Process to Resolve Findings



# Example of a Closed Finding

## Finding Corrective Action Form

Agency: PQA training

Audit Date: February 27-28, 2022

Finding Number: 1

**Finding:**

Several criteria pollutant Standard Operation Procedures (SOP) had not been developed, outdated, or needs to be updated to reflect current practice in use.

**Description of the Problem:**

SOPs for criteria pollutants O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> were not developed, outdated, and in need of revision. This finding should be considered a dual finding for the CARB PQA as they are generally responsible for ensuring consistent operation of the ambient air monitoring network under their jurisdiction. The Code of Federal Regulation (CFR) specifically states that the “common factors that should be considered in defining PQAOs include: the use of a common QAPP or ... standard operating procedure[s]”.

# Example of a Closed Finding

## **Actions Taken or Planned to Correct the Cause:**

The District has a few SOPs that are going to be submitted to CARB soon. We will be submitting Data Review and Validation SOP at the end of April 2023. We will also share a draft Start to Finish (covering O<sub>3</sub>) SOP with CARB at the end of May 2023. In addition, we are starting the review of a draft BAM1020 for the PM<sub>10</sub> and PM<sub>2.5</sub> SOP.

Because of limited resources, the District is requesting CARB's assistance in writing the remainder of the SOPs needed at the District.

## **Timetable for Above "Actions Taken or Planned to Correct the Cause":**

Anticipated submittal of SOPs to CARB will be as follows:

Data Review and Validation – by the end of second quarter 2023

Ozone – by the end of second quarter 2023

PM<sub>10</sub> and PM<sub>2.5</sub> (BAM 1020) – by the end of fourth quarter 2023

## **Deliverables to Demonstrate Implementation (as appropriate):**

As SOP's are approved by CARB, the District will e-mail SOP approval letters to the EPA.



# Example of a Closed Finding

[This section to be filled out by EPA]

## Plan to Address Finding

Reviewed by: U.S EPA

Date: 5/25/2023

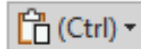
Plan to address finding approved? Yes

Remarks:

## Corrective Action Completed

Reviewed by: U.S EPA

Date: 1/25/2024



Was the finding adequately addressed to close the finding? Yes

Remarks:

# Questions?

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  - 279-208-7162