CANs and AQDAs Friend or Foe?

Two Types of Corrective Action Mechanisms Utilized by CARB

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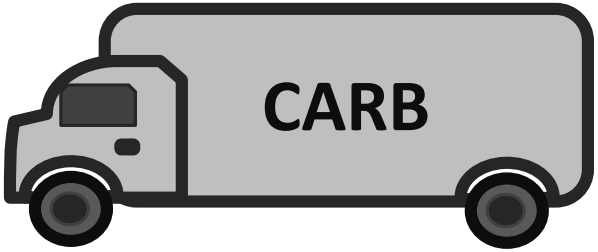
CANs vs AQDAs

- Corrective Action Notifications (CANs) **issued by anybody**:
  - when operational issues that may impact data are observed
- Air Quality Data Action Requests (AQDAs) **issued by auditors**:
  - when critical criteria are not met

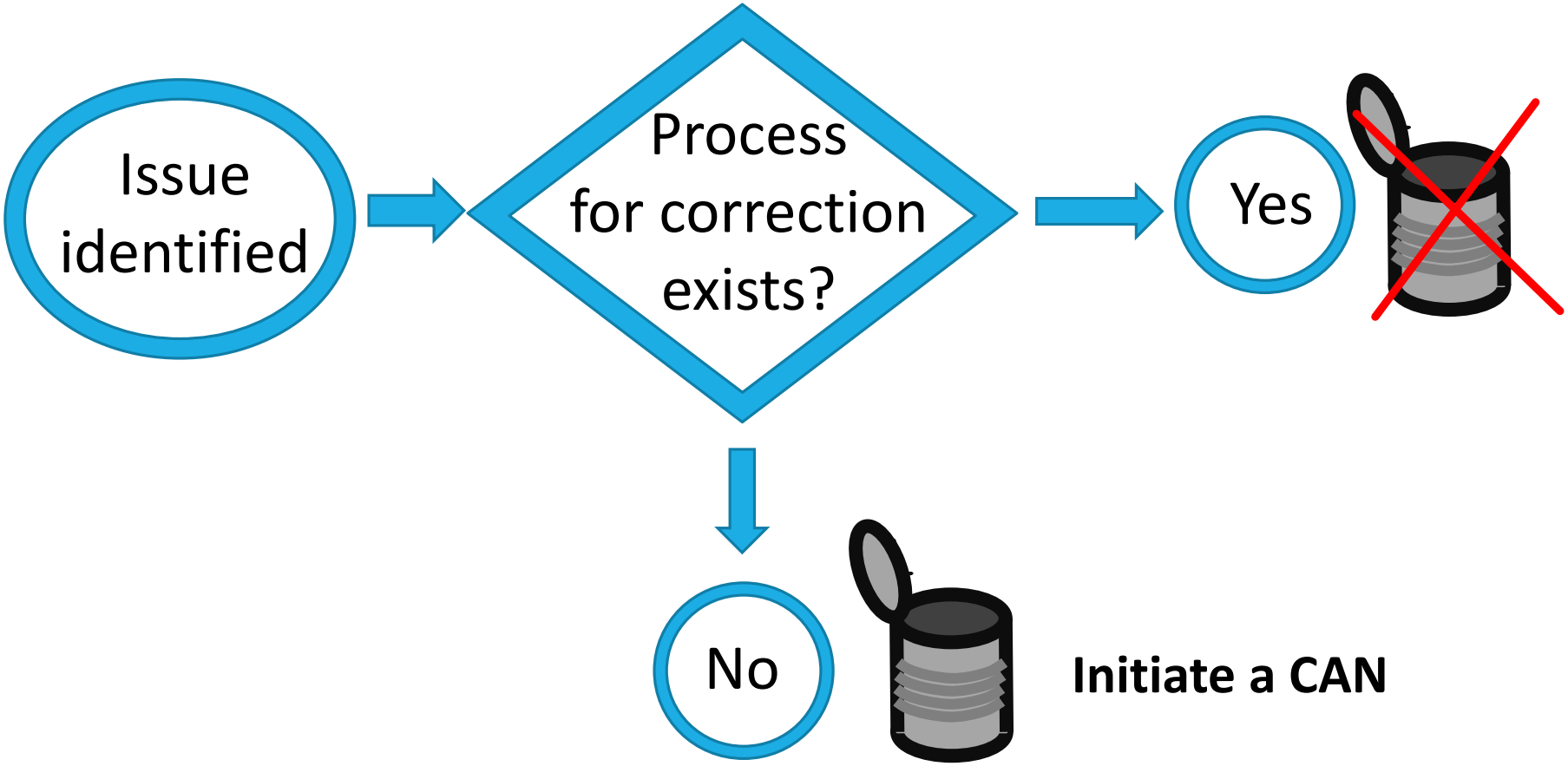


Should I Worry About CANs?

- Not used to discredit personnel or agencies
- Used to document corrective actions and identify issues

A CAN Is Your Friend!

When to Initiate a CAN?



How The Audit Team Decides Whether to Issue a CAN or AQDA

Critical → AQDA — **Data Is In Question**

Operational → CAN — **May Impact Data Quality**

(From U.S. EPA QA Handbook Appendix D Validation Templates, March 2017)

AQDA Process
Cooperative not Contentious

- When equipment is found operating outside of critical criteria, an AQDA is issued by Auditor
- Monitoring Organization investigates the issue and proposes a resolution
- Quality Assurance Section (QAS) evaluates the resolution
- Agreement is reached on data action
- Data action is verified; then, AQDA is closed

Scenario 1

Flow Rate Verification Missing

- Data for April will have to be flagged
- Provide evidence of passing March and May flow checks
- Mention plan to prevent reoccurrence
- Email resolution to QAS for approval
- Flag data in AQS
- Avoid missing flow checks in the future

Scenario 2
Failed Ozone Audit

- Ozone data after last calibration is in question
- Examine ozone data for this time period
- Look for changes in QC checks
- Consider significant events such as forest fires
- Gather evidence for shortening invalidation period
- Email resolution to QAS for approval
- Invalidate or flag data in AQS

Scenario 3

BAM2.5 Failed Flow at 17.52 LPM

- Data after last flow verification is in question
- Investigating the issue, the operator used three flow standards and got readings under 17.34
- Pump had been changed and the flow drifted up
- Proposed resolution was to flag the data
- QAS's flow standard had also drifted and the corrected value would have been 17.29 not 17.52

Supporting Evidence

Electronic strip chart readout

Logbook excerpts

Quality control information

Calibrations, internal verifications/audits

Data comparisons to other nearby sites

Trend analysis

Data analysis

What Are the Possible AQDA Results?

- Release data findings; no compromise in data
- Flag data; release with QA qualifier flag
- Invalidate data; apply a Null Code

Why Do We Have to Do This?

- What good is bad data?
- Document the reasoning behind a flag or null code
- Learn from these corrective actions to avoid repeating

Questions?

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- CARB's CAN form and SOP are available on the QA website: http://www.arb.ca.gov/aaqm/qa/pqao/pqao_can.htm
- AQDA SOP: https://ww2.arb.ca.gov/audit-procedures-air-quality-monitoring

Scenario 4

SO_2 Audit Failed, CO Audit Passed

- SO_2 data after last calibration or possibly longer is in question
- Look for changes in nightly precision checks
- Consider degradation of SO_2 in Superblend tank
  - If same tank is used for cals and nightly checks, then have tank verified
- Email resolution to QAS for approval
- Invalidate data in AQS