

Technical System Audits

Bonne Ford

IMPROVE Steering Committee Meeting

October 2024

Background of TSAs

Purpose: To ensure the IMPROVE sampling sites are being operated in accordance with the QAPP and SOPs.

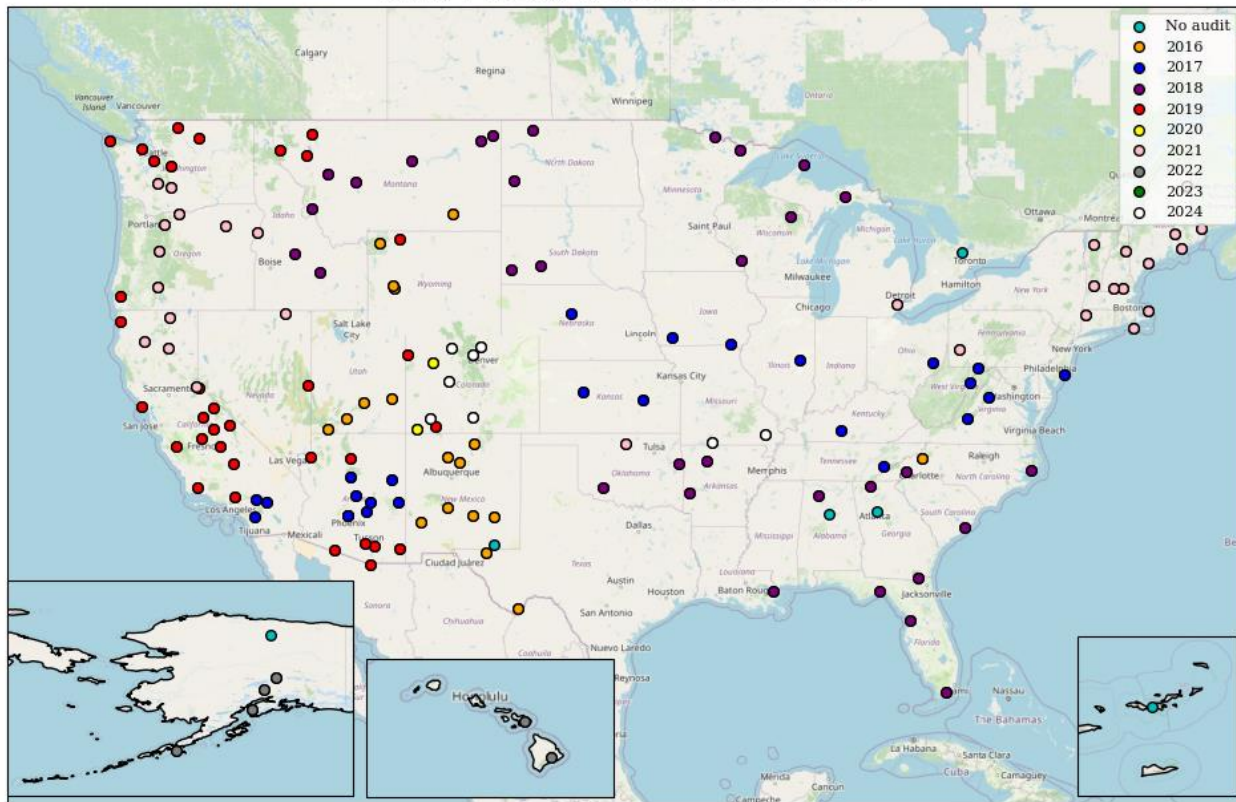
Components: Verifying the site's coordinates and elevation, sampler's date/time, vacuum pressure, temperature, and the flow rate of each module. Check stand for safety and integrity while reviewing siting criteria. When the operator is available, the sample change technique is observed and they are asked about concerns and whether they are provided with adequate support to maintain high quality sampling at the site. Results are recorded and pictures taken.

Implementation: Every site has to be audited **at least once in the ten-year period** by a trained auditor, either lead CSU/CIRA auditor or state partners (AZ and DE previously, MO and CO currently).



Status of 10 year TSA plan (2016-2025)

Class I Areas and IMPROVE Sites



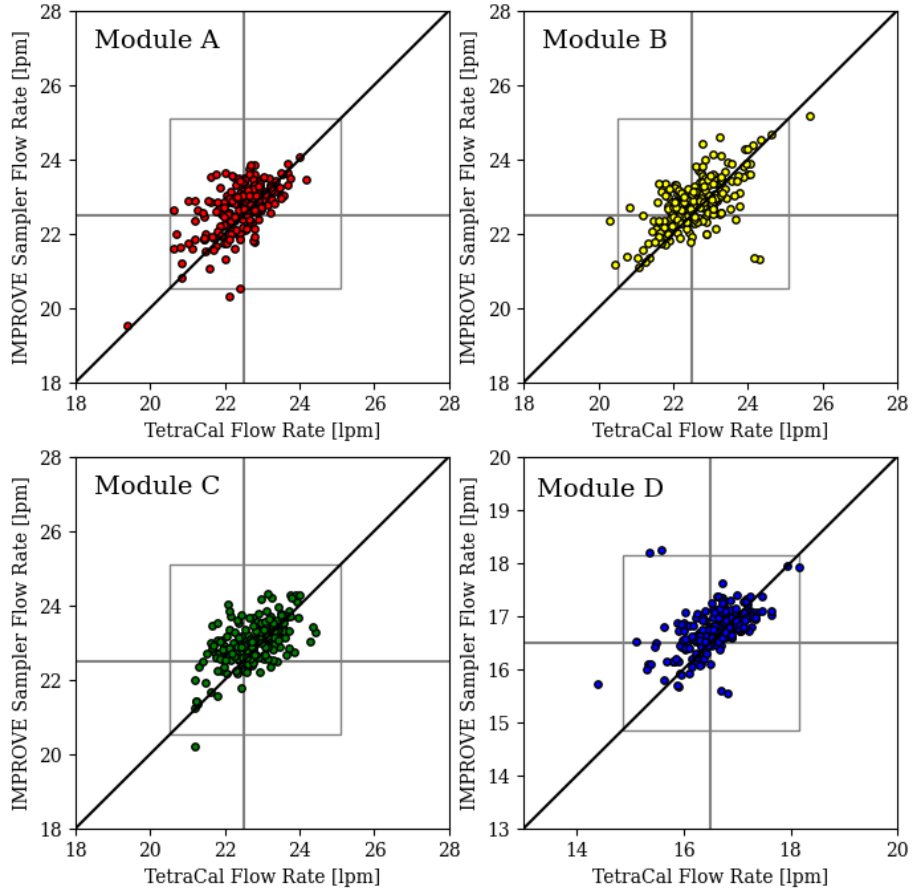
6 Sites not yet audited:

1. Egbert
2. Toolik Lake
3. Birmingham
4. Atlanta
5. Virgin Islands
6. Carlsbad Caverns

2017-2023 Results

Other issues noted:

- Trees needing trimmed.
- Module stacks not seated properly.
- Abundance of mouse droppings.
- Clocks need resetting.



2024 Audits

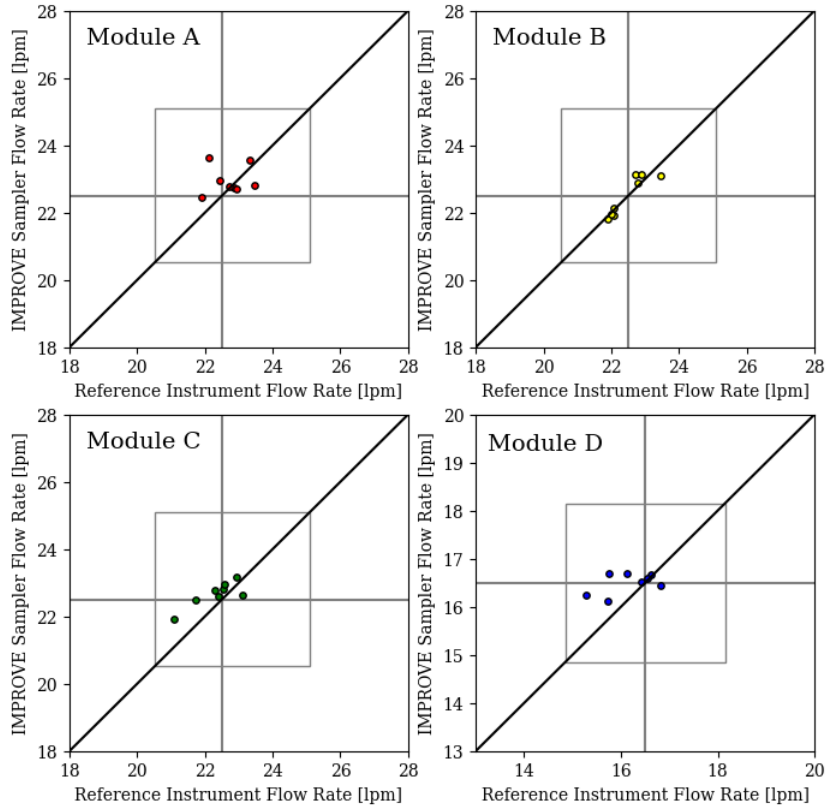
Colorado: ROMO*, MOZI, WEMI, WHRI, GRSA*

Missouri: HEGL and MING



All of these sites had previously been audited (multiple times for some) in the ten year period. CDPHE audits the instrument performance but does not do a full TSA. Missouri checks paperworks and some siting criteria.

2024 Results



MING shelter replaced and moved slightly.

HEGL and MING auditors cleaned inlets.

GRSA structure needs to be replaced.

Attempting to coordinate a discussion on this.

2025 and beyond Audit Plans

- Complete audits for: BIRM, ATLA, VIIS, CABA
- Meet with Missouri state auditors (met with Colorado this year).



Derek Day did audit trainings in 2016 and 2017. This was really successful for several years. We want to start reaching back and to recruit and train state auditors.

QAPP will be rewritten next year. This may provide an opportunity to reassess any changes desired for the program.

Continue building a database of all previous audit results.

Quality Management Plan (QMP)

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Previous version is very outdated



QUALITY MANAGEMENT PLAN

**for the Aerosol
Monitoring Network Component
of the
IMPROVE
Visibility Monitoring Program**

- Required by the EPA and should be reviewed and updated regularly.
- Our current QAPP is from 2016.
- Originally planned to update these every 5 years.



Undertook an update this year

December/January: Initial meetings with Melinda Beaver and Joann Rice at the EPA, discuss some new guidelines and get feedback on overall management structure

February: Internal Draft at CSU and NPS

Spring/Summer: Reviewed by UC Davis (big thanks to Marcus Langston!)

Currently being reviewed by the EPA

Goal: Have completed, signed, submitted, and made available on the IMPROVE website by end of the year (all required signers have been given the opportunity to review).

No major changes to management structure

Designated me as Quality Assurance Manager (already doing TSAs), but will now also be in charge of coordinating the review and update of the QMP and QAPP.

Now reference our charter for more details on how the Steering Committee operates and responsibilities of the subcommittees.

Next Year

We need to undertake updating the QAPP. Each contracted laboratory should have their own QAPP, but the IMPROVE network as a whole, also needs a QAPP.

Laboratories will be asked to help update their sections of the QAPP (this is outlined in contract agreements).

Will begin more regular reviews and updates of these documents.