

Beyond Level 2 QA

What to do with suspect data that isn't
invalidated

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IMPROVE Steering Committee Meeting

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Level 2 validation verifies sample concentrations by contrasting with expected values.

The data processing manager or programmer reviews the individual concentrations and means for a standard set of parameters for each site. A set of time series and correlation plots are used to compare related variables at each site. The compared variables are:

Sulfur by XRF on A (Teflon) (times 3) vs. sulfate by IC on B (Nylon)

Optical absorption on A (Teflon) vs. light-absorbing carbon on C (Quartz)

Fine mass on A (Teflon) vs. reconstructed mass

Fine mass on A (Teflon) vs. PM₁₀ mass on D (Teflon)

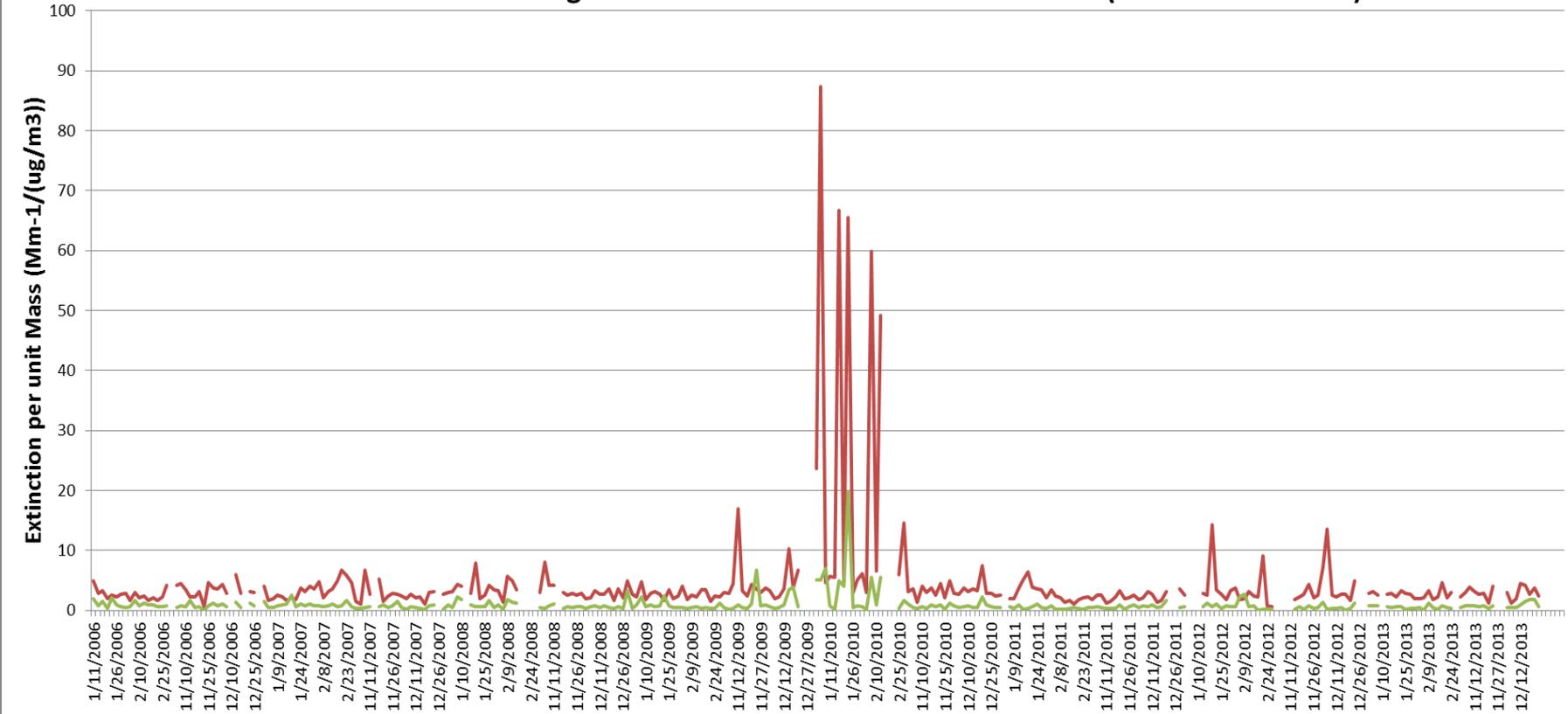
Discrepancies are investigated and, **when necessary**, samples are reanalyzed in an attempt to resolve the issues.

Whenever a value is changed in the database, a note is attached to that location indicating the change and the reason. When a sample is invalidated, the concentrations are flagged as invalid, but the original parameters are retained in the database.

What to do with suspect data that isn't invalidated?

- Not a large number of samples affected.
- In some cases the samples significantly affect tracking progress metrics.
- Native QA flags from UC Davis have never been changed at CIRA, though we have requested reflagging by UC Davis in the past.

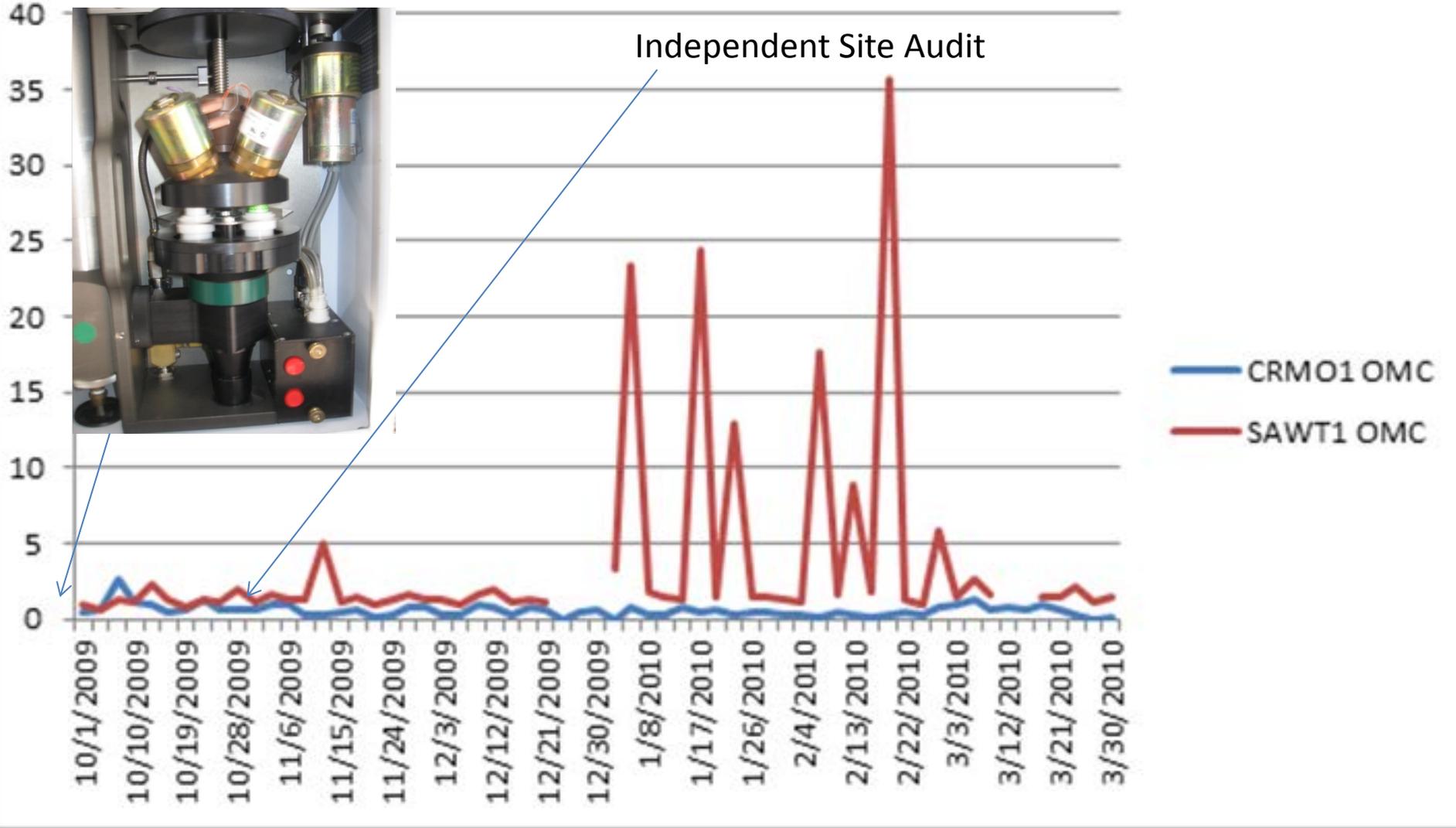
SAWT1 Ratio of Organic Extinction to Gravimetric Fine Mass (and EC Ext to GFM)

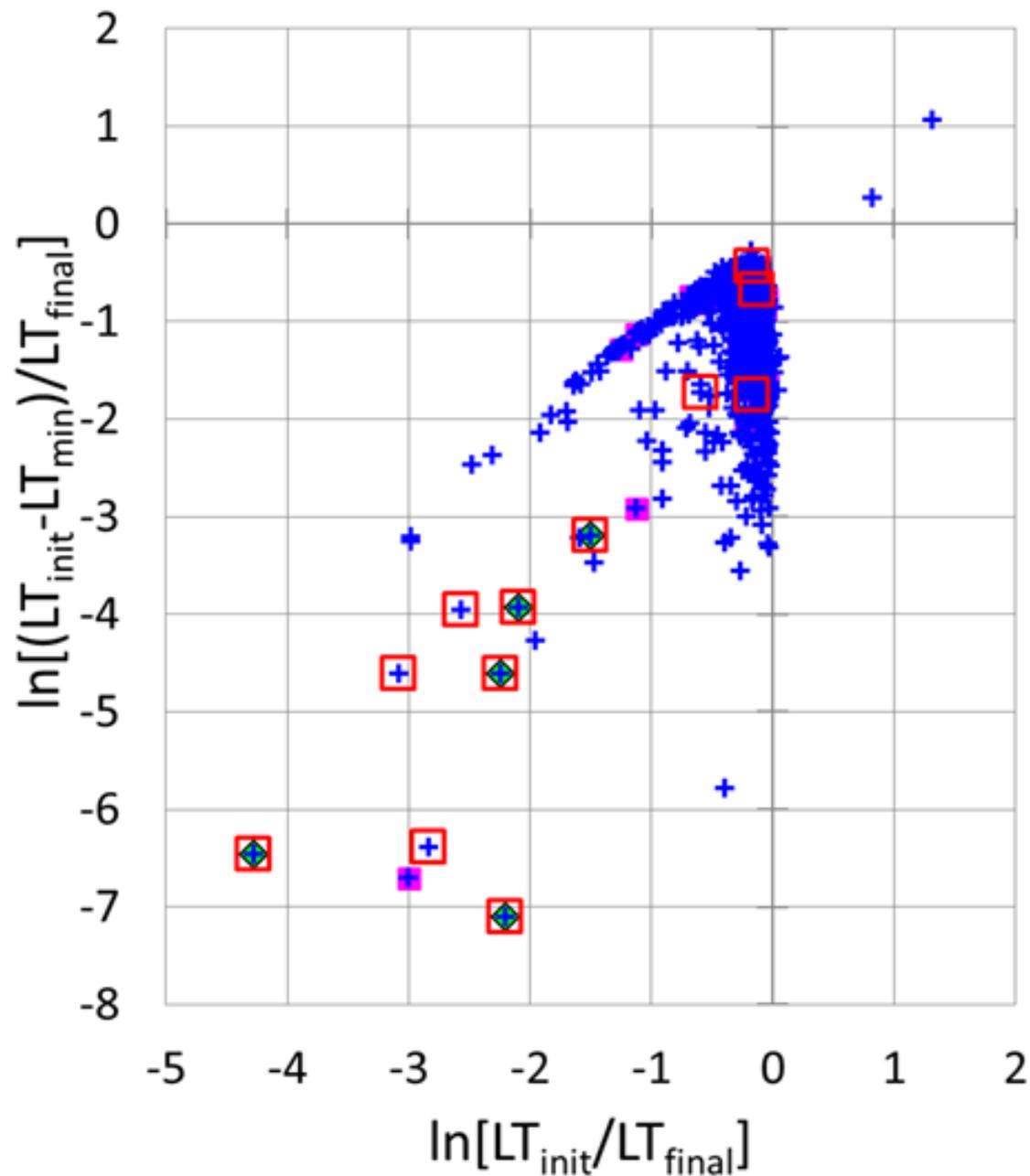


Note: only Nov Dec Jan Feb data plotted



Independent Site Audit





SAWT1

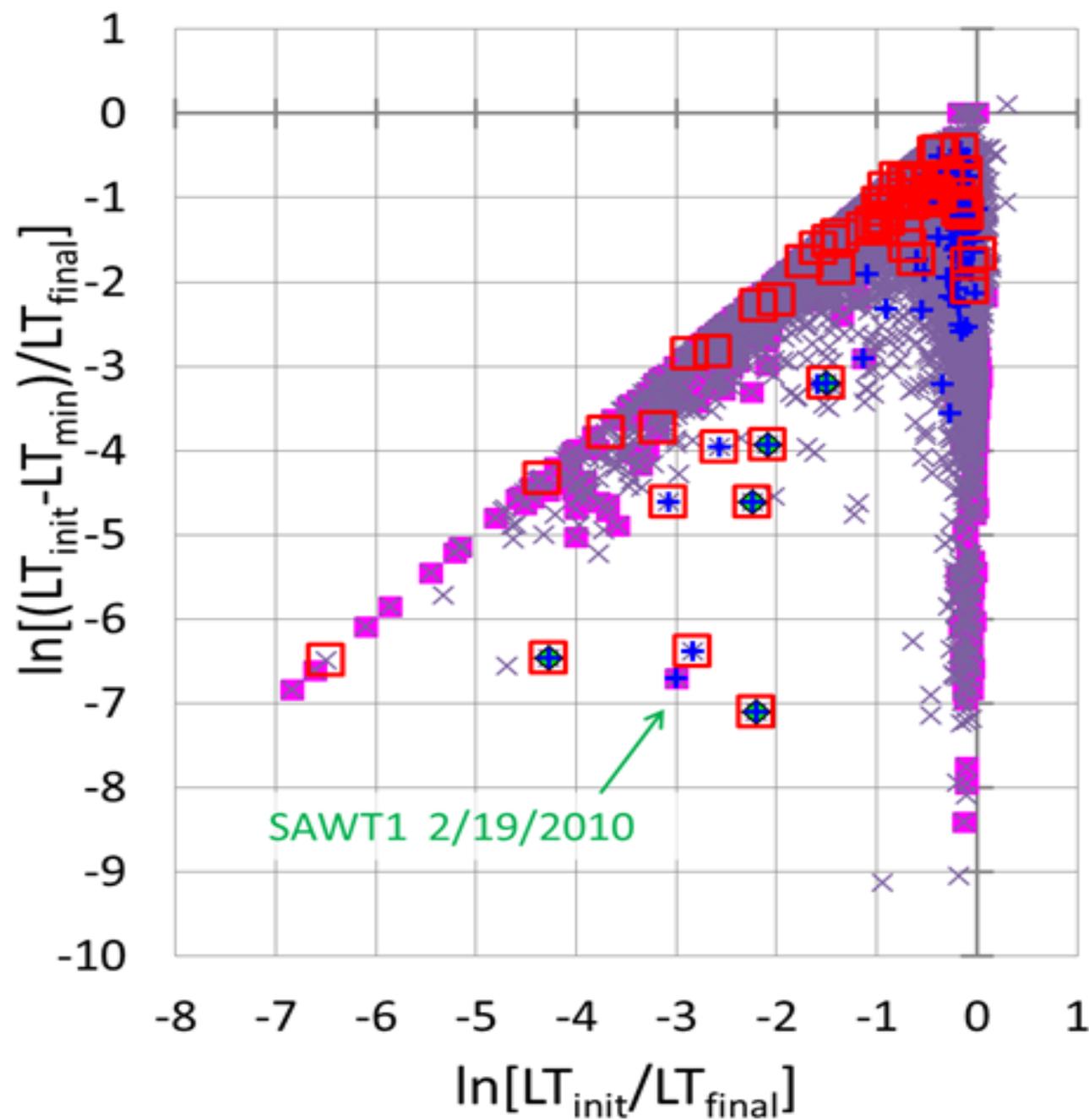
■ MF invalid
n=31

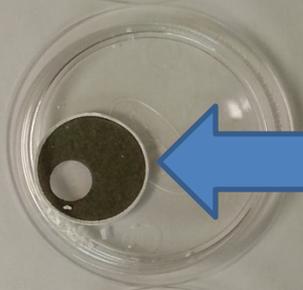
◆ Scott
n=5

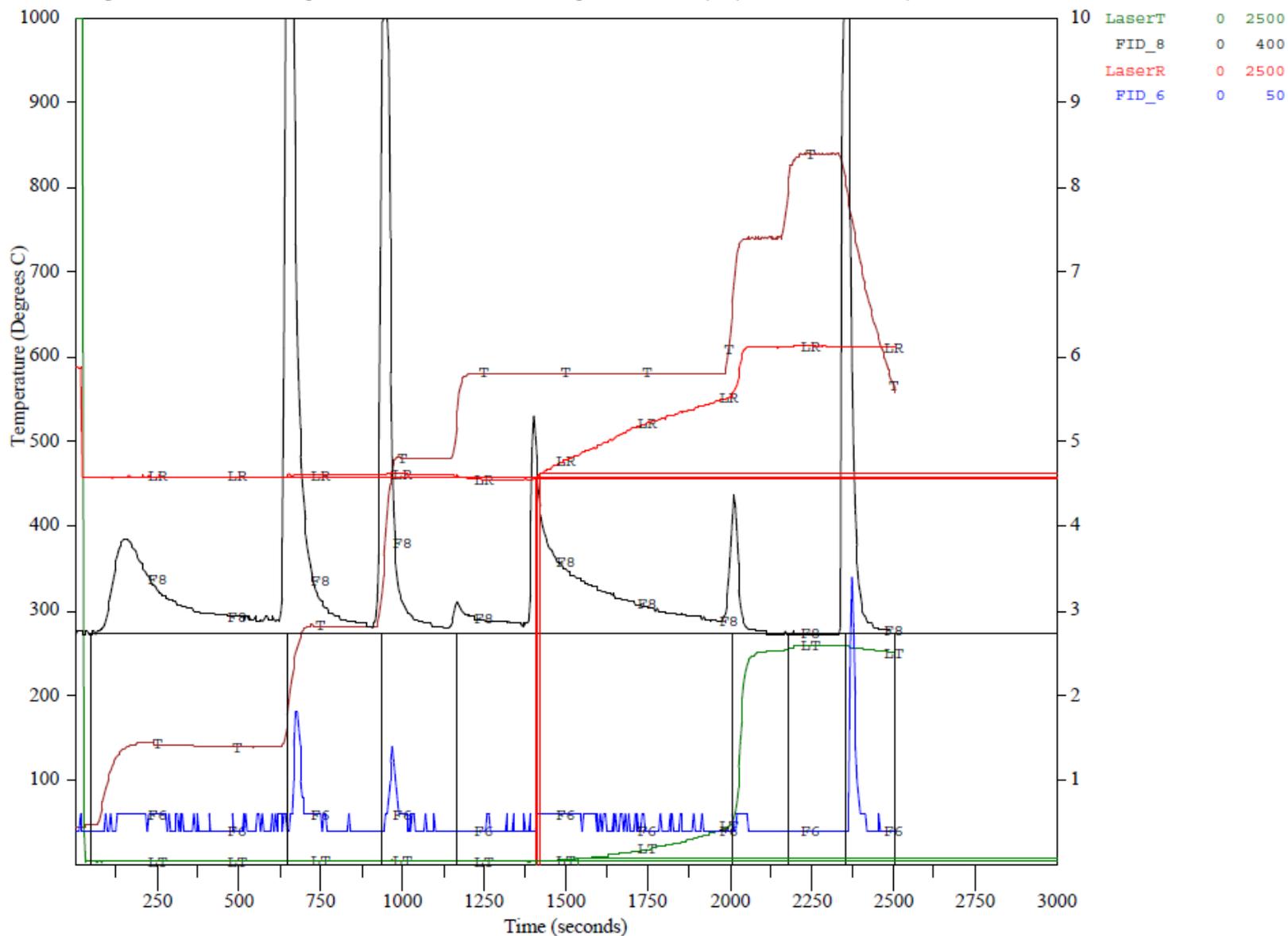
+ 2006 - 2013
n=856

□ MF deficit
n=12

wacky days
5/3/08
11/12/09
1/5/10
1/17/10
1/23/10
2/7/10
2/13/10
2/28/10
3/24/10
3/30/10
5/17/10
6/28/10







Proposed process when samples are identified that can't be invalidated through routine QA up to Level 2.

- Issue Investigated with labs and QA personnel.
- Recommendation for flagging data made to state, FLM, and EPA.
- When all parties agree, either:
 - Flag is changed at CIRA
 - Or
 - Flag is changed at UC Davis
- Records kept of the justification.
- *For this case, I suspect contamination from inside building air is the most likely cause and hence would propose to invalidate the data for RHR purposes.*