Florida Department of Environmental Protection

Office of Air Monitoring

Best Practices for Field Technicians

April 13 2015





Best Practices

Guidelines Are Important!

Successful Operation

- Requires:
  - Careful planning
  - Coordination of efforts
  - Following established procedures
  - Continuous oversight
  - Much…much…more!

Best Practices for Field Technicians

Overview

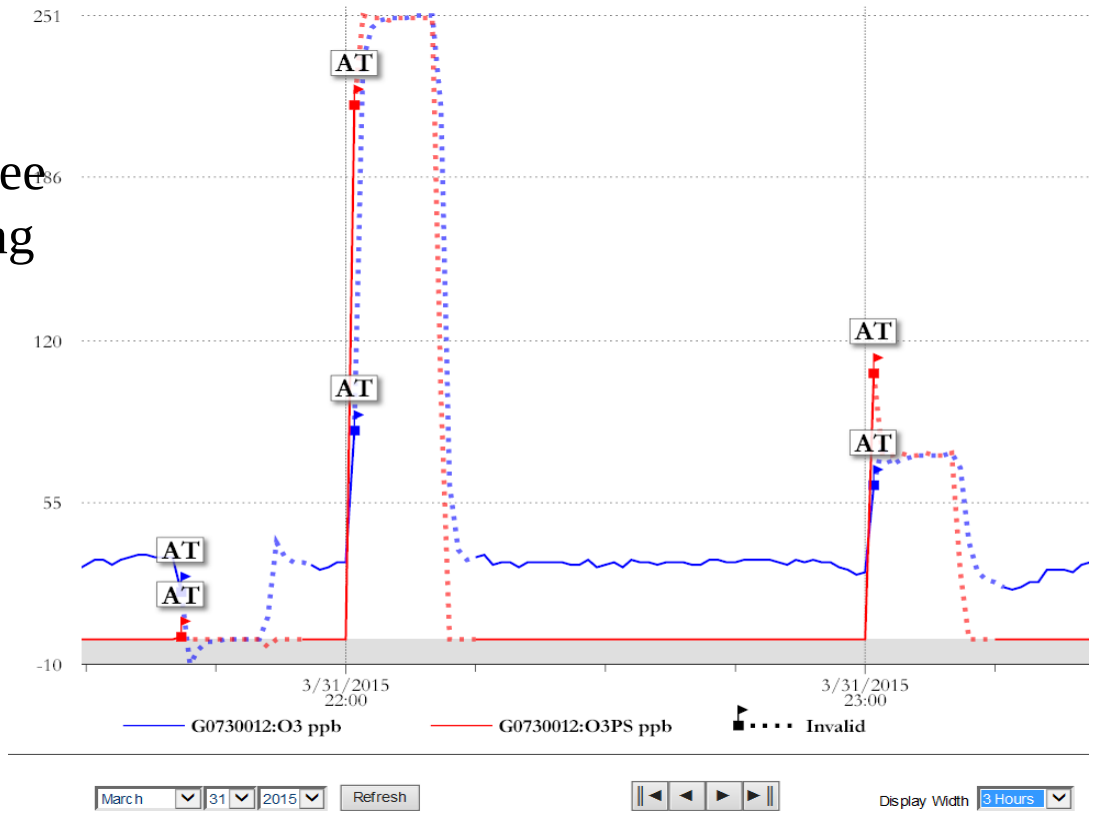
- Daily Checks
- Scheduling and Preparation
- Routine/Preventative Maintenance
- Documentation
- Site Area Maintenance

Daily Checks

- Poll the site daily.
- Check if there are data issues and how the equipment is performing.
- Check for trends in the data to identify possible upcoming faults with the site equipment.
- Review your schedule
  - any upcoming/overdue maintenance
  - any upcoming/overdue calibrations/audits
- Prepare your schedule accordingly.

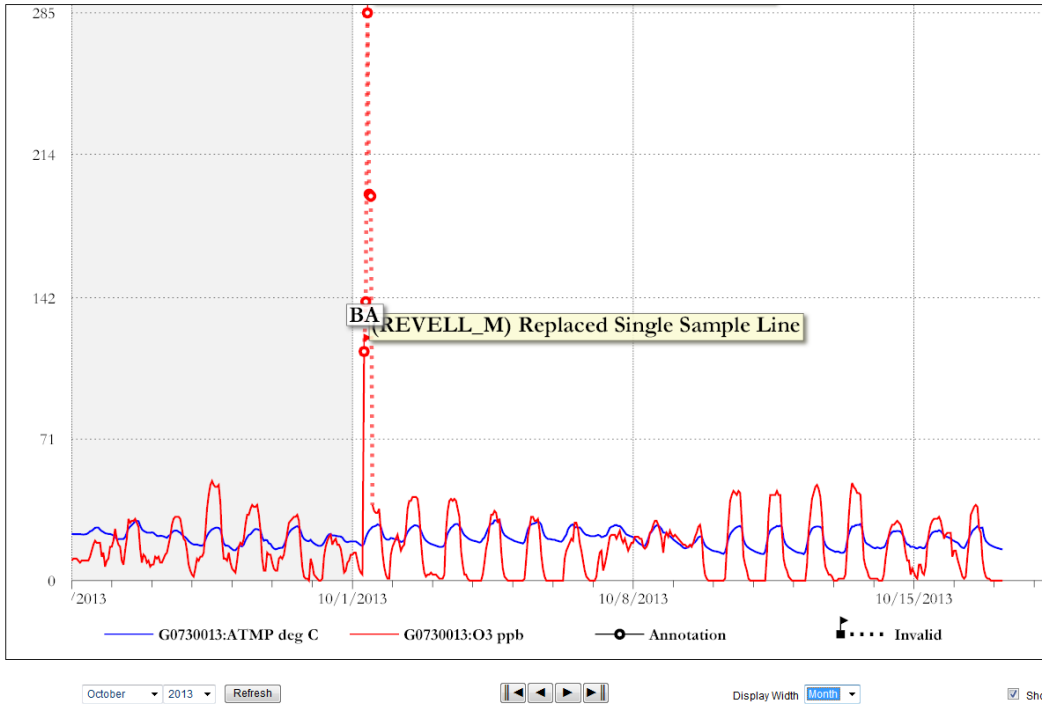
Strip Chart Review

- Use the Strip Chart feature in FAMAS to graph the data and see how the equipment is performing *(Z/S/P)*



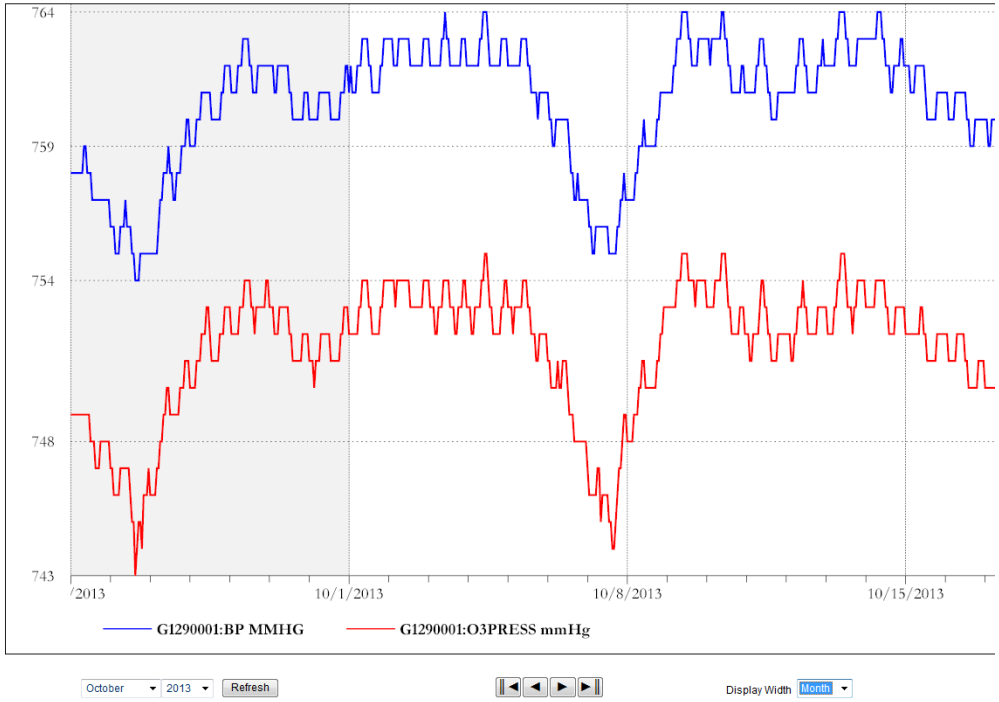
Strip Chart Review

- Comments entered into FAMAS also appear on the Strip Chart Graph



Strip Chart Review

- You can use it to compare the performance of the equipment
- Barometric Pressure outside the trailer compared to the Barometric Pressure of the O_3 Analyzer



Strip Chart Review

- It's a very nice tool to see when something has gone wrong
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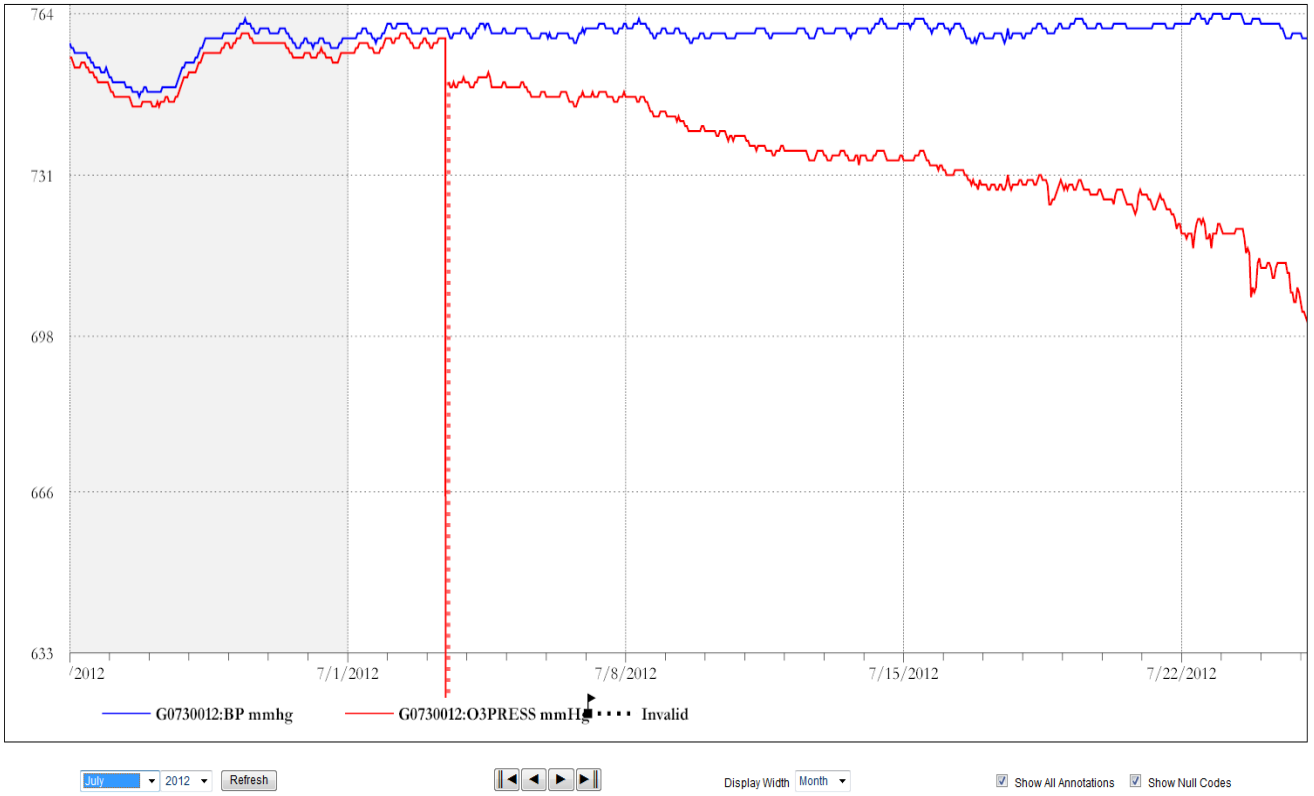

Strip Chart Review

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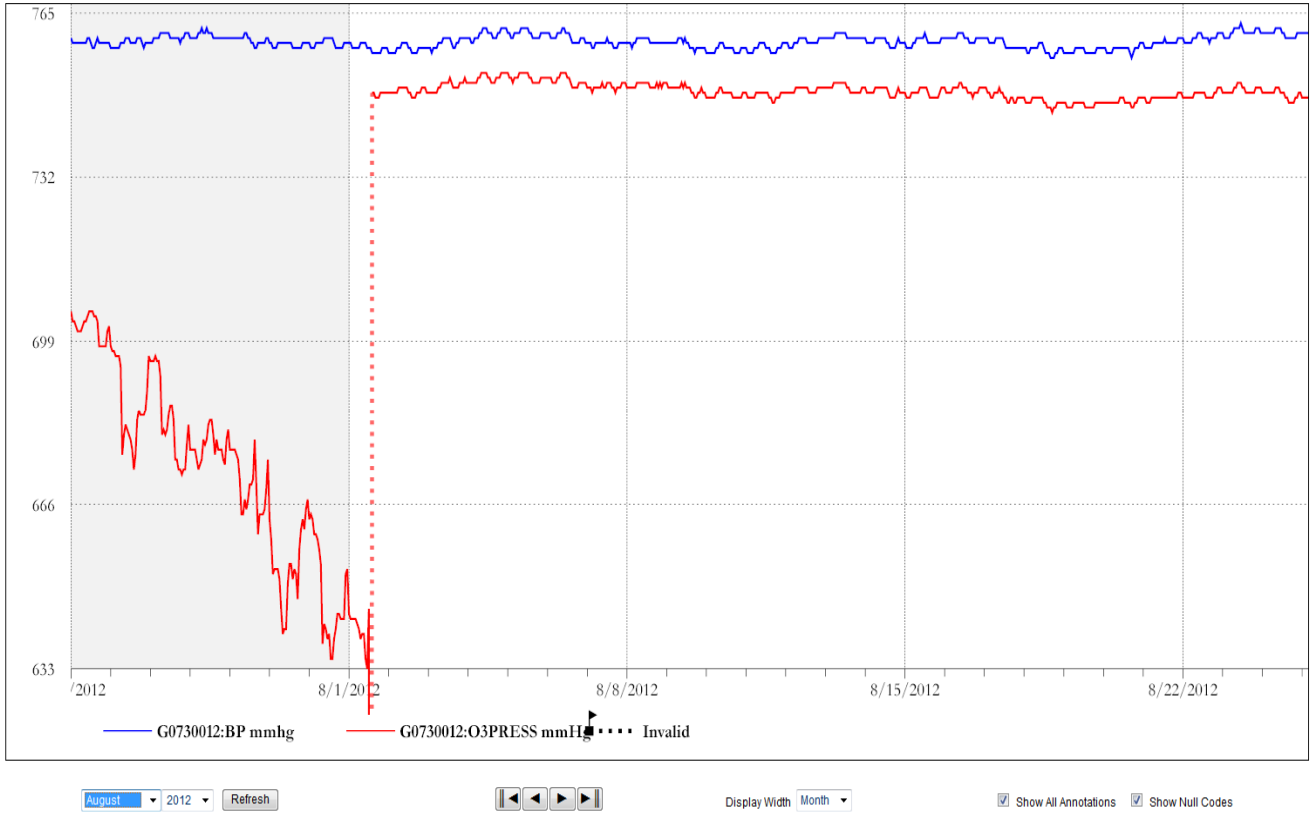


Scheduling and Preparation

- Alternate monthly site checks to be performed in the month so they are scheduled on different weeks (avoiding crisis management).
- Whenever possible, schedule the site checks to be performed geographically. Avoiding long drive times between sites.
- Avoid multiple trips to a site by combining Run Time Schedule and Monthly site checks.

Scheduling and Preparation

- Plan the operations of monthly site checks at least three months out and combine the monthly site checks with your Quarterly site checks that roll into your semiannual site checks etc…
- Plan around the weather – if you see a storm coming later in the week – pull the site check back and perform.
- Recommend performing the time consuming Semi-annual site checks and Annual site checks along with the Seasons to avoid exposure to inclement weather.

Scheduling and Preparation

- Carry extra filters (Ozone,TEOM) when traveling to the sites to avoid a wasted trip.
- Ensure the NIST standards that are used to perform maintenance are within the certification date before going to the site.
- Carry extra batteries in the vehicle.
- If possible, avoid performing maintenance on the site equipment on a Friday. If something goes wrong two extra days of data loss is added.

Routine/Preventative Maintenance

- Site Check
  - Note outside/inside conditions
  - Check instruments and computer condition
  - Check clocks and/or timers
  - Ensure certifications have not expired
  - Check/log cylinder pressures
  - Check/record instrument test values
  - Check spares and consumables
  - Note the Status of the Zero Air compressor

Routine/Preventative Maintenance

- Site Check
  - Check the celling of the trailer for water stains/leaks
  - Check for mold intrusion and soft flooring
  - Check the AC/Heating unit for proper operation
  - Check the dehumidifier is properly functioning
  - Ensure that all power cords are safely secured
  - Remove old documentation/equipment from site
  - Ensure the surge protectors are functioning

Routine/Preventative Maintenance

- Site Check
  - Check for corrosion on external electrical outlets
  - Check flow gauges for proper flow
  - Check wiring connections
  - Turn off the monitor and lights when leaving
  - Ensure that trailer and gate have been locked

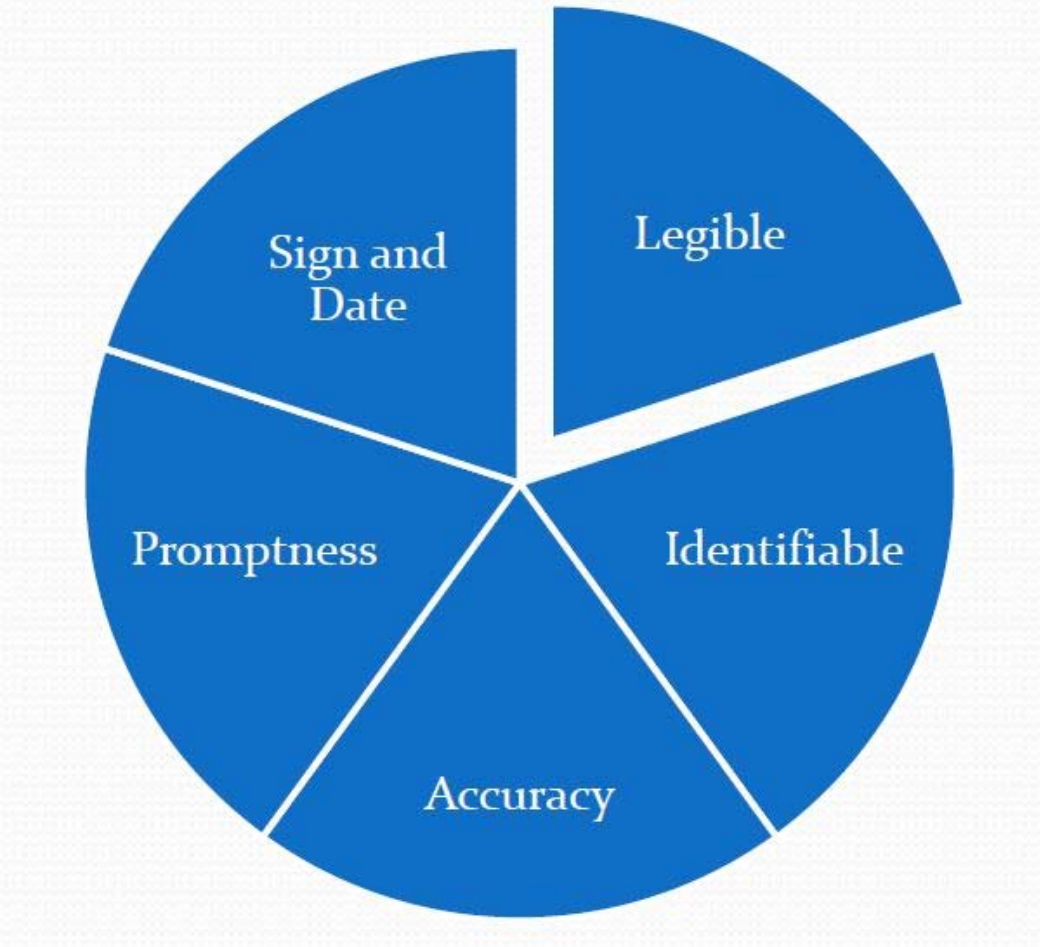
Routine/Preventative Maintenance

- Automate routine precision and zero checks
- Leak check sample line connections
- Changing filters – do not handle with bare hands
- Inspect, clean and replace sample lines
- Minimize periods of loss data by going offline in the last 15 minutes of the hour and going back online before 15 minutes past the hour

Good Documentation

- Documentation is “proof” or “evidence” That all required procedures were carried out and carried out at the correct time
  - What occurred during that time
  - To ensure equipment is working properly
- Helps reconstruct the study (Legal Defensibility)
- Data is used for Regulatory Purposes
  - Certify data is correct and accurate
- Creates confidence in the data

Requirements of Documentation



Document Troubleshooting

- Document what happened, or what you suspected happened
  - When? For how long?
  - How did you find out?
  - What you did to resolve the problem? Did you change out parts? Talk to the manufacturer?
- Saves time in the long run
- Resource for you and others
- Helps in budgets – maybe its time to buy a new one!

Paper vs. Electronic Logs

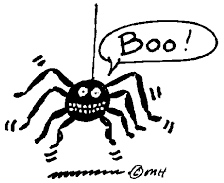
Paper Logs	Electronic Logs
Uses a paper notebook	Uses a Computer
Conventional ("Tried and True")	Quick Remote Access
Requires storage space	Requires extra security measures/backup version control (Files could be corrupted)
More convenient for quick notes	Need to fall back on paper logs (if no access to electronic logs)
End user access after the month	Share information with end-users faster & searchable database
	"More Green"
	Analysis on information

VS1

Site Area Maintenance

Site Area Maintenance

- Lawn is mowed, bushes are trimmed and weeds are removed
- Wasps/Bees and Ants have been eradicated from site area
- No trash or food is to be left behind after site visit
- Trailer floor has been swept and trip hazards removed
- All chemicals have been safely stored and away from equipment
- Gaseous bottles are correctly secured in the trailer
- Burnt out light bulbs are to be replaced
- Instrument covers should be reattached after scheduled maintenance



Slide 22

VS1 Ensure consistent font used in presentation

Veazey, Sandra, 4/9/2015

Wrap Up

- Review
  - In the office: data review
  - Preparation and planning for site visit
  - At the station: routine operations, QC/PM
  - Documentation
  - Site area maintenance

Any questions?

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