

Next Generation Compliance Partnership with States and Local Air Agencies

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Next Generation Compliance – What is it?

(See Also Fall NACAA meeting web-site)

More effective rules

Design with implementation in mind

Advanced monitoring technology

Find out about pollution in real time

Electronic reporting

Reduce burden, increase efficiency, improve data quality and timeliness

Increased transparency

Public accountability to improve government and facility performance

Innovative enforcement

Use Next Gen in settlements, better targeting and analysis, innovative approaches that drive compliance



GMAP (geospatial measure of air pollution) tool can be used to estimate amount and location of methane and VOC emissions. Includes IR camera, sampling ports, GPS, methane meter.

Value to States of Next Generation Compliance

- Increase program efficiency and effectiveness while driving compliance.
- Reduce burden; improve data quality through e-reporting.
- Provide needed information through advanced monitoring.
- More complete, shared information leads to greater accountability.
- Create opportunities to consider new measures related to compliance.
- Measure the effectiveness of new program implementation approaches.
- Experiment and test new ideas for solving tough environmental problems.

EPA's Recent Use of Next Gen Tools in Enforcement

- **Advanced monitoring** to prevent, detect and more quickly correct violations.
- **Electronic reporting** of compliance data, including data on compliance with settlement obligations.
- **Transparency** of compliance data through publicly available websites or other means.
- **Third-party certifications** that settlement obligations have been met.

Major Flare Settlements

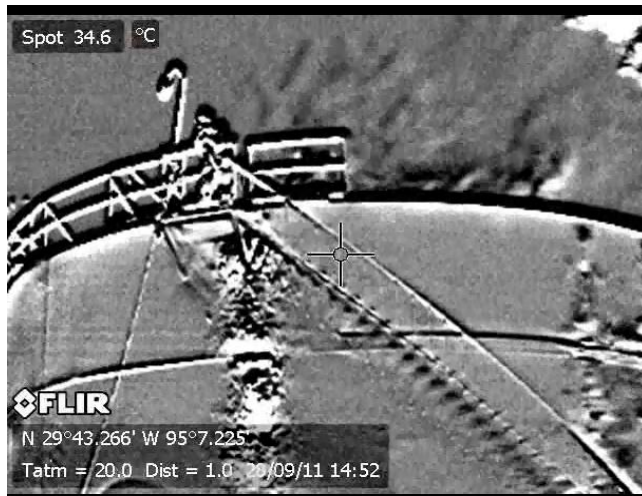
- **Marathon (April 2012)**
 - Covered all of Marathon's six U.S. refineries.
 - Established parameters of flare related injunctive relief.
 - First to accept volumetric cap on flaring.
- **BP Whiting (May 2012)**
 - Refinery in Indiana.
 - Includes specific flare gas recovery requirements.
- **Shell Deer Park (July 2013)**
 - Refinery and Olefins Plant in Deer Park, TX.
 - First facility to agree to flare gas recovery at an Olefins plant.

CAA settlement with BP Whiting (Indiana)



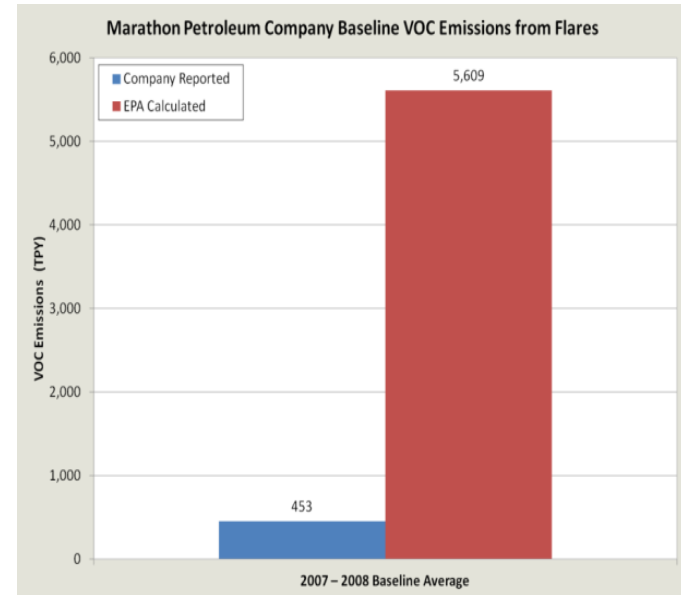
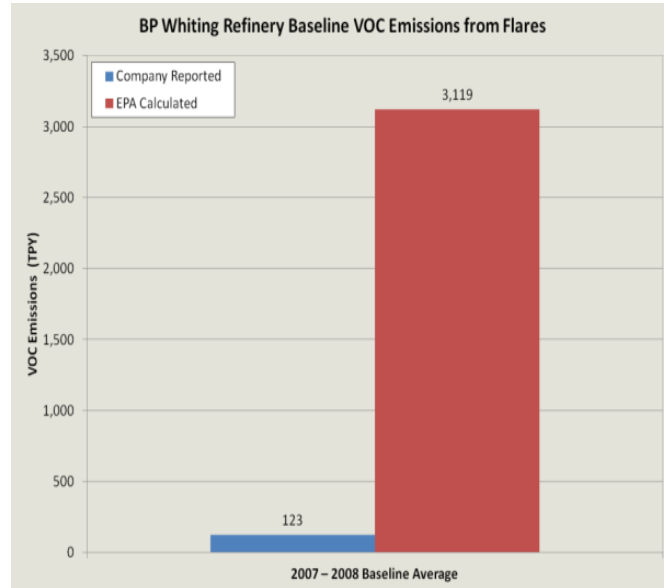
- Next Gen tools included in settlement:
 - Location of fence line monitors based on consultation with EPA and community
 - Report fence line data weekly on public web site
 - Report continuous emission monitoring data quarterly on public web site
 - Review data with community at their request

CAA settlement with Shell Deer Park (Texas)



- Next Gen tools included in settlement:
 - Innovative technology to reduce pollution from flares
 - Enhanced in-plant monitoring for benzene
 - Regular tank inspections with infrared camera
 - Fence line monitoring for benzene
 - Report fence line data on public web site

Estimated Emissions – Underestimated air emissions from flares



Actual emissions (in red) at Marathon and BP were *25 times and 10 times greater*, respectively, than best engineering estimates (in blue)

Communities were exposed to greater amounts of pollutants than assumed, and companies paid a penalty which may have been avoidable

CWA settlement with Roquette America (Iowa)

- Next Gen Tools included in settlement:
 - EPA-approved contractor must complete annual 3rd party audits for O&M plan, SWPPP, and NPDES permits
 - Reports will identify non-compliance, steps to address, and schedule to correct
 - Audit reports will be included in Annual Report



CWA Settlement with Metro. Sewer District (St. Louis, Mo.)



- Next Gen tools used in two settlements:
 - For judicial settlement, CD submissions must be posted to District website for three years
 - For Admin Compliance Orders (07 & 08), must post discharge locations to District website

Examples of advanced monitoring tools used in EPA's air program

Photoionization Detector



Infrared Camera



Continuous/Fence-Line Monitoring in Region 5



Traditional metals sampling – 24-hour integrated PM sample (filter-based); weeks of waiting for results; 60 samples/yr on 1-in-6 day schedule

Next Gen monitoring - semi-continuous monitor; 1-hour sample; near real-time data via built-in XRF lab instrument; over 700 measurements/mth (8,000/yr)

Off-site assessment with *GMAP-REQ*

(Geospatial Measurement of Air Pollution – Remote Emissions Quantification)



- Drive-by Mapping
- Position vehicle in the plume
- Acquire CH₄ and wind data for 20 minutes
- Pull a 30 second canister sample for VOC information

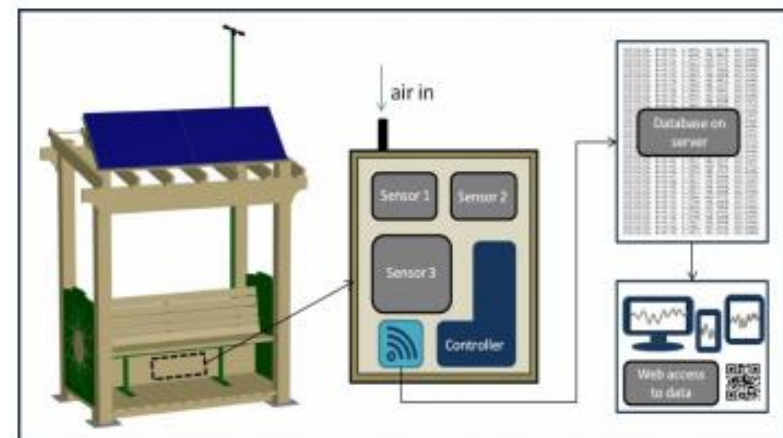
driving path



Spike in CH₄ indicates emission

Village Green Project, Durham, NC

- Solar-Powered Park Bench
- Air Sensors Monitor:
 - Air Quality (ozone, particulates, etc.)
 - Weather Information (wind speed, temperature, humidity)
- Real Time Results
 - Uploaded to Website
 - Accessible to communities
 - Available on mobile app



Air-monitoring system incorporated into a park bench.

Next Generation Compliance Strategic Plan

- Strategic Plan developed by an OECA/Regional work group
- Focus on OECA-lead work; coordinating with others AAships to implement
- Sets vision for how Next Gen will improve compliance and regulatory benefits through goals for each component for FY 2014-17
- Future sharing with state and locals.

E-reporting/E-enterprise

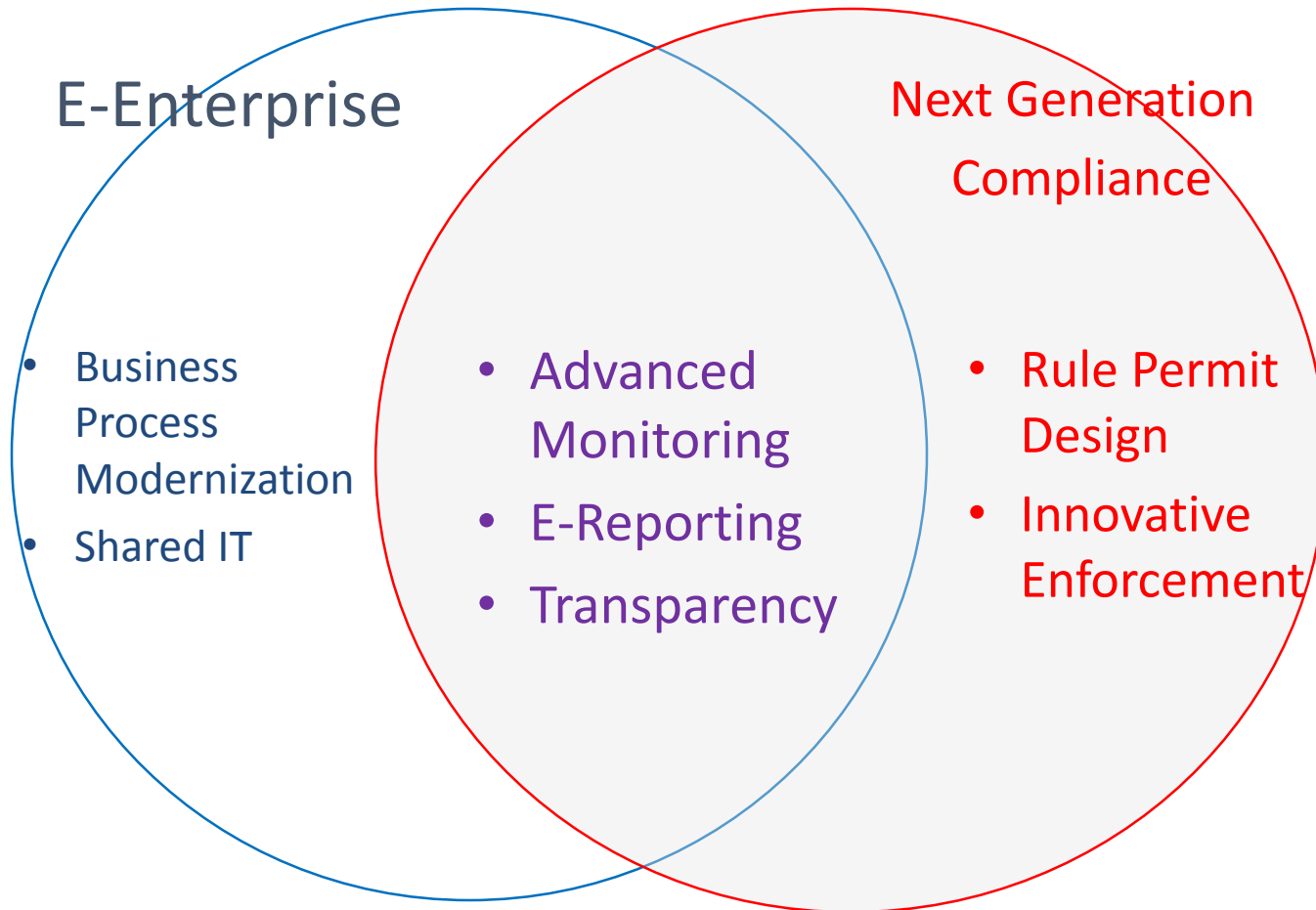
E-Reporting Policy Statement issued on September 30, 2013, setting E-reporting as default assumption for all new EPA rules.

Electronic Reporting has expanded into E-Enterprise for the Environment

is a joint initiative of States and EPA to improve environmental outcomes and dramatically enhance service to the regulated community and the public by maximizing the use of advanced monitoring and information technologies, optimizing operations, and increasing transparency.



Next Gen Compliance and E-Enterprise



Next Generation Compliance Partnership with States and Local Air Agencies: Status and Next Steps

- EPA: Share Next Generation Compliance Strategic Plan with states and local agencies for review and comment.
- States and Local Agencies: Share examples of projects that include Next Generation components.
- States and Local Agencies: Ideas for new Next Generation Compliance projects to pilot.
- EPA: Incorporate state and local agency Next Generation examples into ongoing research and share periodically.
- Future Discussion: How our Next Generation Compliance partnership can assist in attaining our shared vision for a stronger air compliance program.

State and Local Perspective/Opportunities?

More effective rules

Permits?

Advanced monitoring technology

Partnerships with local universities and citizen monitoring groups?

Electronic reporting

State and local activities and current EPA partnerships?

Increased transparency

State or local web-sites, permits, and enforcement agreements?

Innovative enforcement

State and local settlements, targeting, analysis, and innovative approaches?