

EPA Enforcement and Next Generation Compliance

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David Cozad, Regional Counsel
US EPA Region 7

Nebraska Department of Environmental Quality's

2015 Environmental Update

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EPA Enforcement Goals

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- Tough civil and criminal enforcement for violations that threaten communities and the environment
- Vigorous enforcement program for the future - Next Generation Compliance
- Strong EPA/state/tribal environmental protection

Tough Enforcement

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- Tough civil and criminal enforcement
 - Consequences for violations
 - Deterrence
 - Level playing field



Enforcement Challenges

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- Noncompliance among largest sources
 - Major air sources like power plants and refineries
 - Water pollution discharges
 - Mineral processing
- New environmental challenges – dispersed sources
- Information gaps
- Budgets declining



Technology Paradigm Change

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Credit: CitiSense Air Quality Monitoring Mobile Sensors, University of California, San Diego, Jacobs School of Engineering. See:

http://ucsdnews.ucsd.edu/pressrelease/small_portable_sensors_allow_users_to_monitor_exposure_to_pollution_on_thei

Technology Opportunities

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- Advances in information and monitoring technologies:
 - “make the invisible visible”
 - inform industry, government, and the public
 - Enhance ability to prevent, reduce, treat or avoid pollutin
 - drive compliance through transparency and accountability

1. More effective rules and permits

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Rules structured to promote compliance

- Simplicity
- Designed to make compliance the default
- Market mechanisms – efficiency and clarity
- Transparency as accountability tool
- Self and third-party certifications



Proposed Air Rule for Petroleum Refineries

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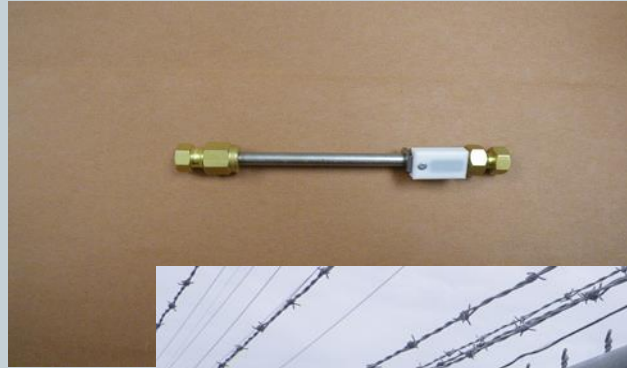
- Require fenceline monitoring at the point where community is impacted
- Public posting provides incentive to keep emissions well below the standard to avoid exceedances



2. Advanced monitoring technologies

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- Real-time monitoring – knowing about pollution as it's happening
- Facility feedback loops – preventing pollution before it happens
- Fenceline monitoring
- Community monitoring
- Remote sensing



Passive diffusion tubes can be placed at a facility's boundary and is a low-cost way to measure air toxics

Advanced monitoring

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Making the invisible visible



NPR Story on Industry Use of Advanced Monitoring



Real-Time Monitoring for Cyanobacteria in the Charles River, MA



Advanced Monitoring

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Example - Using Advanced Monitoring To Persuade & Prove Passive FTIR Open-Path Monitor

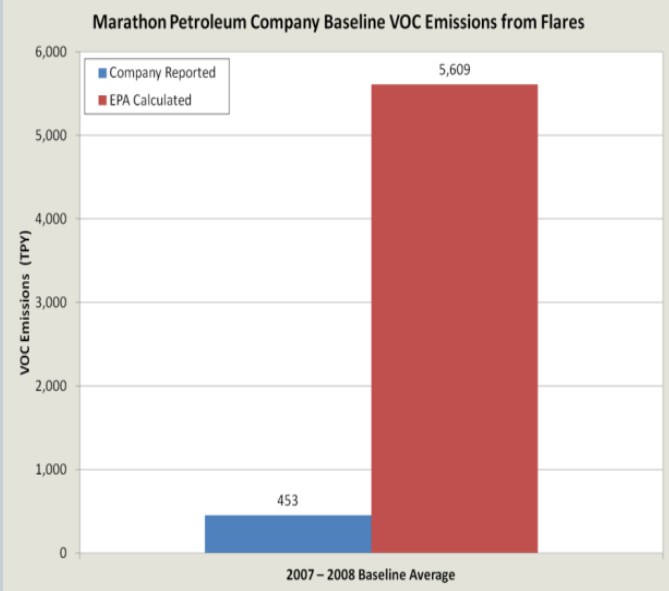
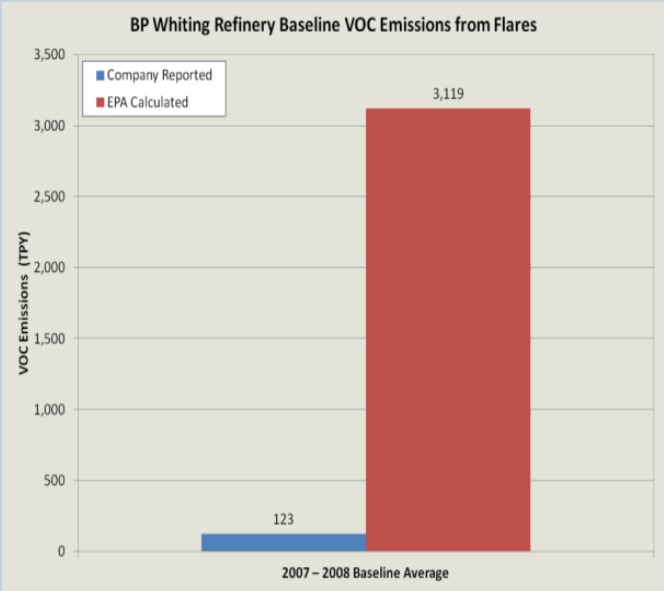
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- Testing of flares to determine combustion efficiency
- PFTIR works by measuring flare plume gases
- We found many flares with poor combustion efficiency that emitted substantial amounts of VOCs



Advanced monitoring

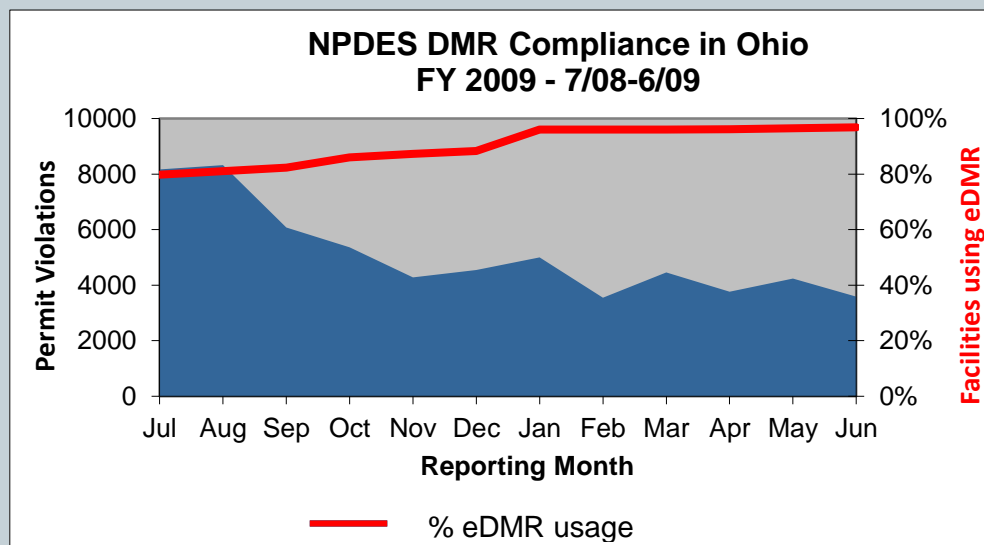
An example from flaring enforcement



3. Electronic reporting

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- Information technologies make new solutions possible
- Smart tools and 2-way communication
- Private sector reporting tools
- NPDES e-reporting rule proposed July 2013
- Could e-reporting yield benefits for CERCLA & RCRA financial assurance?



Electronic Hazardous Waste Manifest System (e-Manifest)

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- Estimated benefits
 - Reduce burden by approximately 300,000 - 700,000 hours
 - Annual savings of approximately \$75 million

4. Increased transparency

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- Evidence that effective transparency drives performance
- SDWA Consumer Confidence Reports
- Restaurant health inspection grades

SDWA: Mailed report on compliance resulted in:

Total violations: down 30-44%

Health violations: down 40-57%

*Benear & Olmstead, Journal of Environmental Economics and Management (2008).



Leveraging Transparency for Compliance

Example: NY State Sewage Pollution Right-To-Know Act

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- New state law will require POTWs to electronically report sewage discharges to government *and* the public within four hours:

5. Innovative Enforcement

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- Save EPA resources from CD implementation and increase incentives on defendants to comply with CD
- Enhances public transparency
- Pilots monitoring and transparency approaches that could spread to other venues:
 - ✦ Helps establish these new best practices as basis for incorporating into regulations and permits



Innovative enforcement

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- Include Next Gen tools in civil enforcement settlements
 - Have been doing this for past five years
 - EPA will now consider use of Next Gen tools in all civil enforcement settlements, and include as appropriate
 - ✦ <http://www2.epa.gov/compliance/next-generation-compliance-memorandum-next-gen-civil-enforcement-settlements>
- Innovative targeting and other approaches.

Incorporating Next Gen in Settlements

Example - CAA settlement with BP Whiting (Indiana)

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- Fence line monitors located in consultation with EPA and community
- Data reported weekly on public web site
 - ✦ Next slide)
- Facility must review data with community at their request

BP Whiting's Public Website of Fenceline Monitoring Results



BP Refinery Whiting, Indiana

AIR QUALITY MONITORING PROGRAM

The air monitoring network is shown in the map below. There are four air quality and meteorological monitoring stations shown in white lettering. These stations (which are referred to as "fixed stations") monitor the air for sulfur dioxide, hydrogen sulfide, total reduced sulfur (TRS) compounds, benzene, toluene, pentane, and hexane along with local weather conditions. In addition, adjacent to the fixed stations are four "open path" monitors. Open path monitors send ultra-violet light beams along a path. Chemical compounds are measured over the distance the path covers. The open path monitors are shown in red on the map. The open path monitors measure benzene, toluene, xylenes, carbon disulfide, carbonyl sulfide, and ozone.

[Click here for larger image.](#)

Home

[Using the Web Site](#)

Measurement Data

[Fixed Station Measurement Data](#)

[Open Path Measurement Data](#)

[Wind Rose](#)

Information

[Site Locations](#)

[Monitoring Equipment](#)

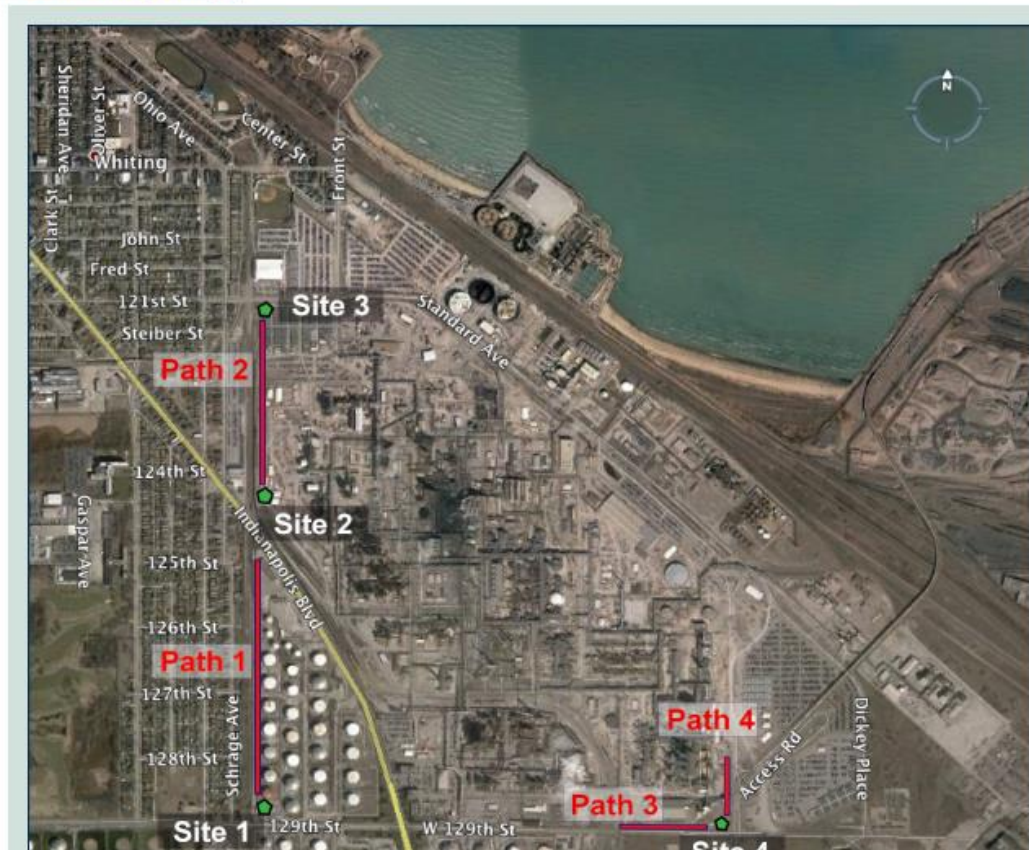
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RCRA Settlement with Total Petroleum Puerto Rico

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- Fully automated release detection monitoring at 125 facilities
- Transmit monitoring data to central location



Example - Incorporating Next Gen in Settlements

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

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- Flow monitors on SSO outfalls
- Consent Decree submissions must be posted to District website for three years
- Must post discharge locations to District website

Incorporating Next Gen in Settlements – *Example* CWA settlement with Roquette America (Iowa)

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- 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 given to EPA and Roquette at same time



Democratization of Air Monitoring



[Link to Example of Citizen Science - AirBeam](#)

Path Forward

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- For more information, see the Next Gen Strategic Plan for FY14-17 at <http://www2.epa.gov/compliance/next-generation-compliance-strategic-plan-2014-2017>