

# Next Generation Compliance

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## **Midwest Environmental Compliance Conference** *Chicago, Illinois*

**David Hindin and Chrisna Baptista**  
**U.S. EPA**  
*November 1, 2016*



# EPA Enforcement Goals

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- **Tough civil and criminal enforcement** for violations that threaten communities and the environment.



- **Next Generation Compliance**  
– reduce pollution, increase compliance.



- **Strong EPA/state/tribal environmental protection**

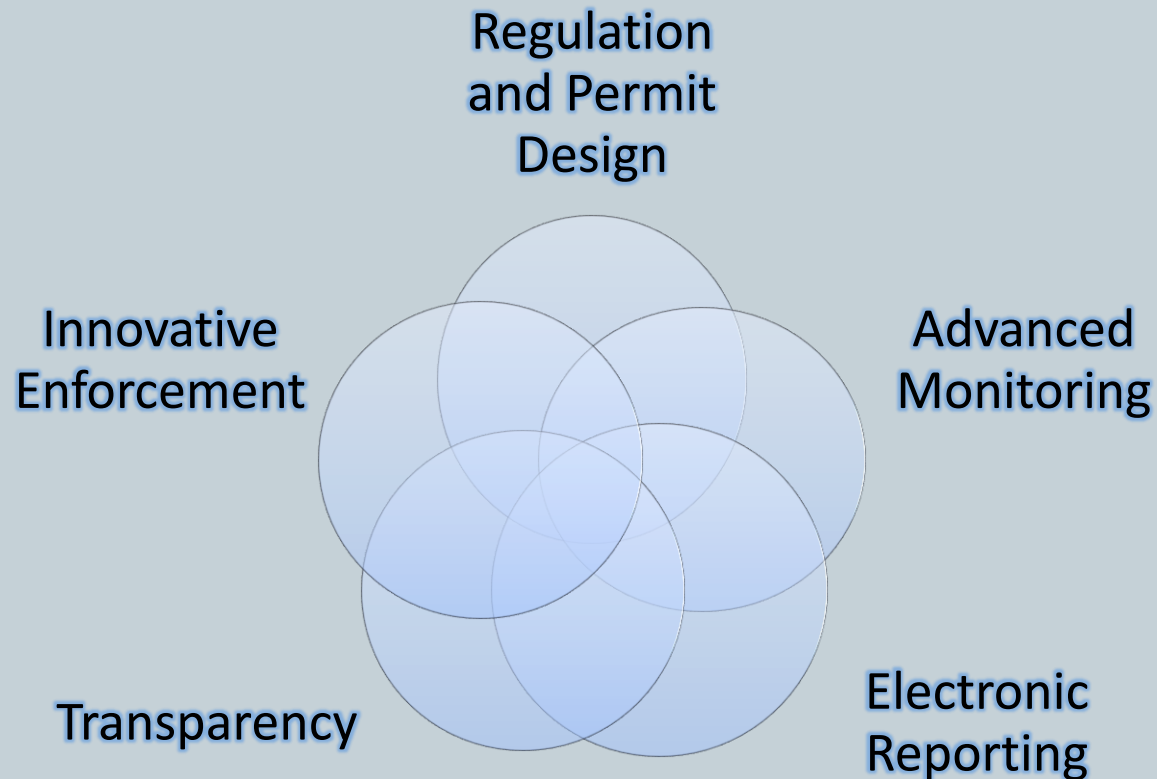
# Why Next Gen Compliance

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- **Drivers**
  - Noncompliance
  - Information gaps
  
- **Opportunity**
  - Advanced Monitoring Technology
  - Information Technology
  - Expand use of best and innovative practices

# Next Generation Compliance – What is it?

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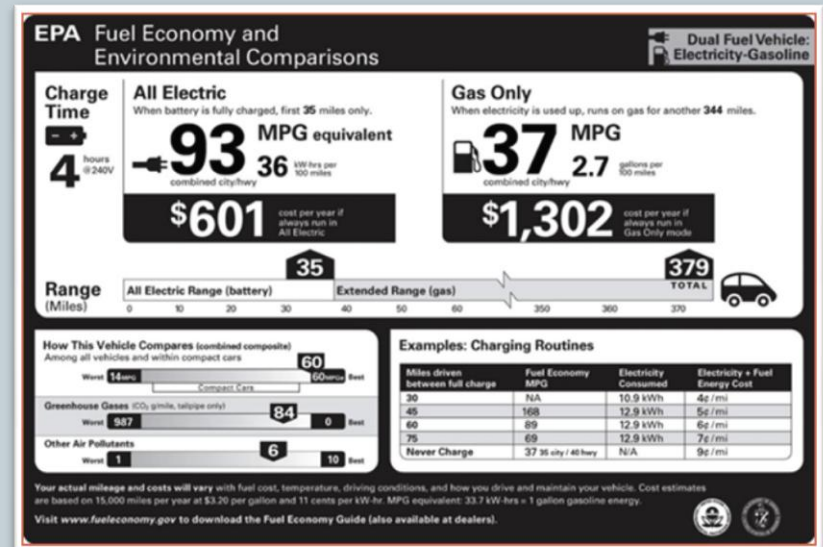


# 1. More Effective Rules and Permits

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## Rules and permits structured to promote compliance

- Applicability and simplicity
- Structural: compliance easier than noncompliance
- Self-monitoring and third-party monitoring
- E-reporting and transparency
- Market forces and incentives



# New Rule for Petroleum Refineries

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- Refineries must conduct fenceline monitoring to ensure neighboring communities are protected
  - Action level/trigger
- Most recent annual average recalculated every two weeks so companies can keep emissions well below the annual standard



# New Rule for Oil and Gas

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- Companies required to install emissions reduction equipment at oil and gas wells
- Streamlined reporting option allows companies to submit list of completed gas wells with digital date and GPS stamped photos showing equipment installation

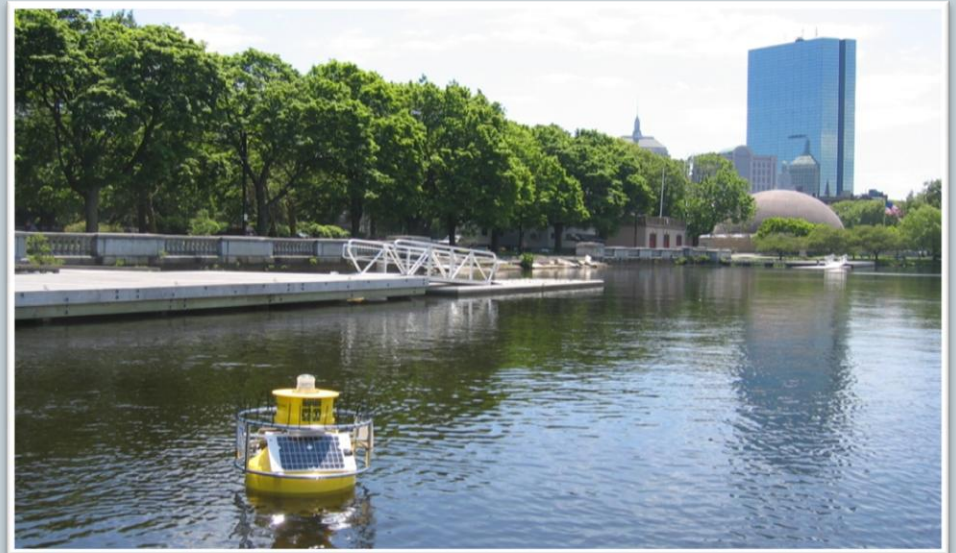




## 2. Advanced Monitoring Technologies

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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



**Monitoring buoy in Charles River collects and transmits data to a public website**

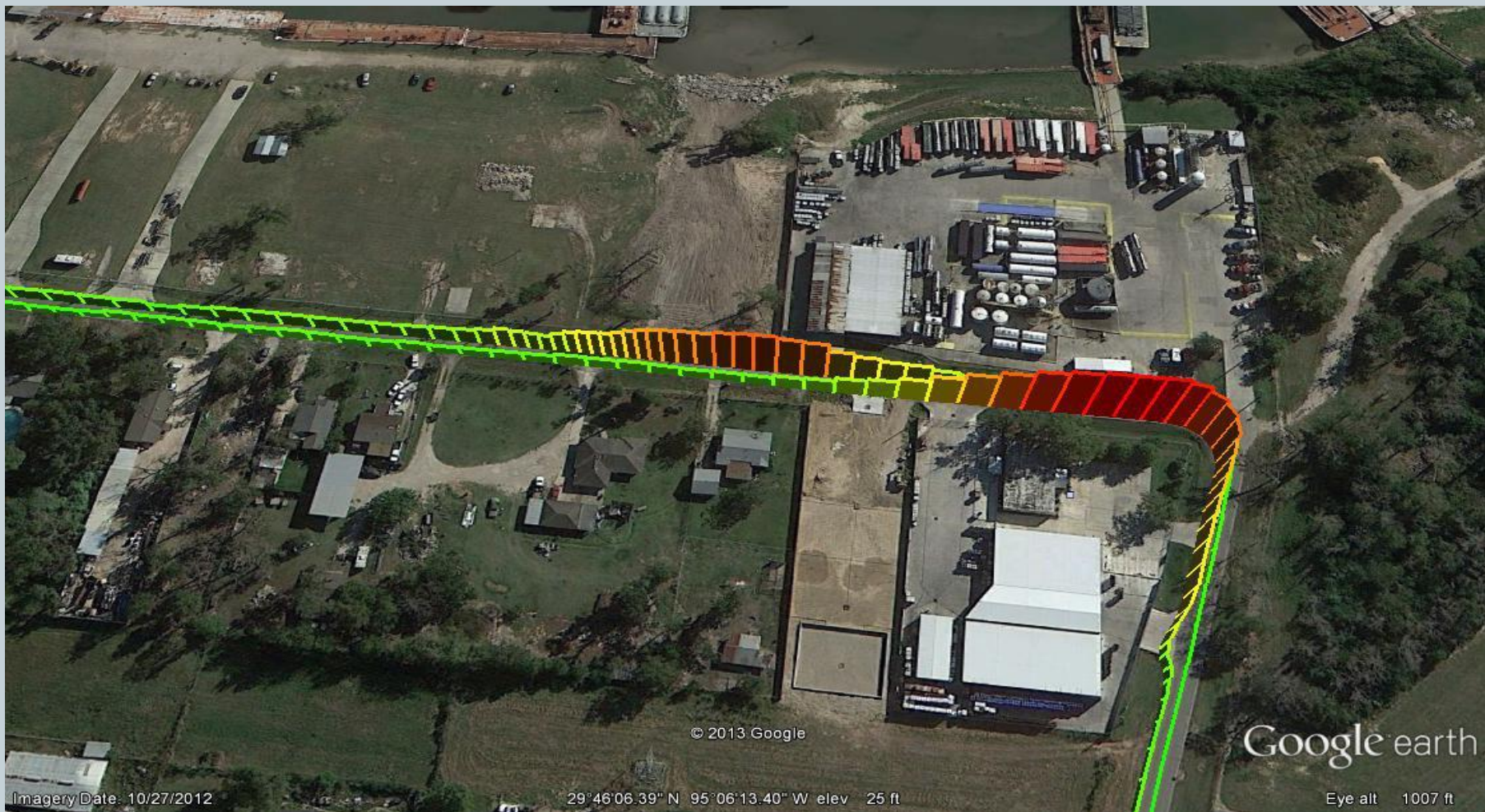
# Illustrative Air Advanced Monitoring

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# Advanced Monitoring

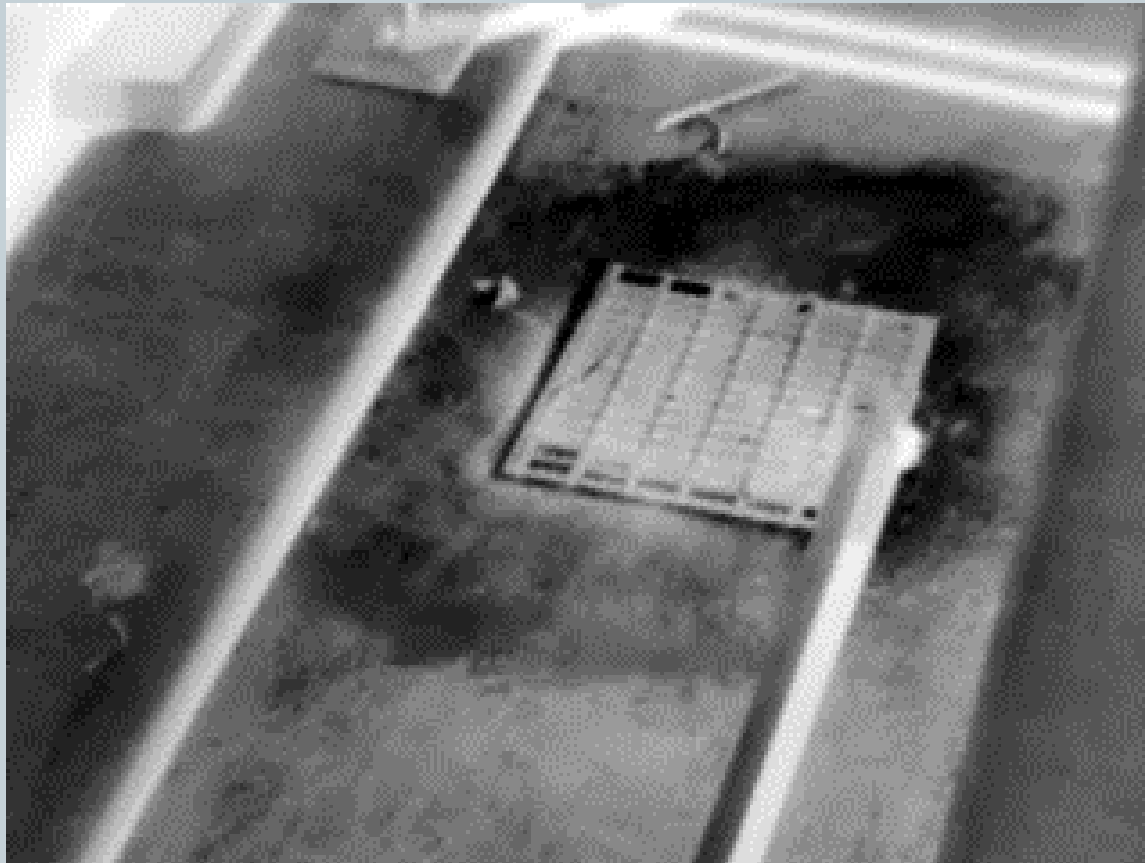
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# Example from EPA Region 10

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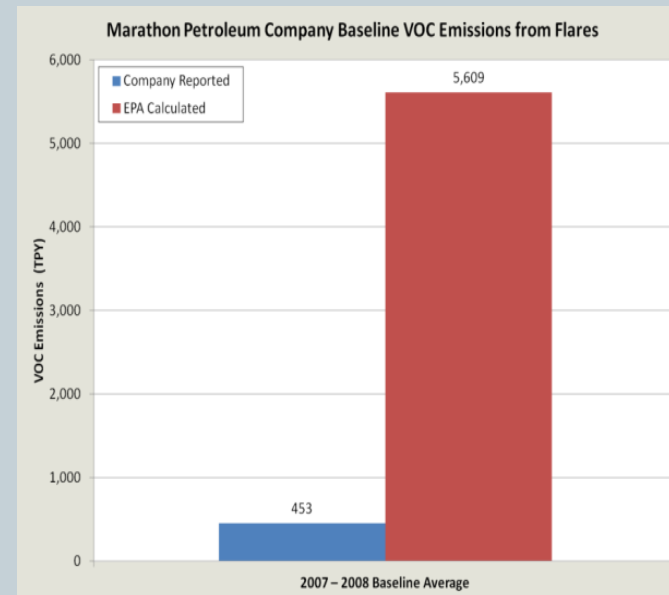
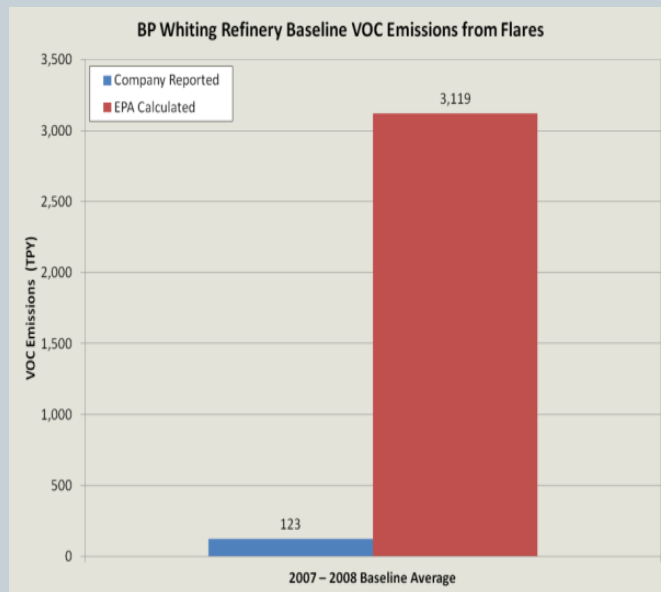
Leaking equipment at bulk gasoline distribution terminal.



# Advanced Monitoring

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## An example from flaring enforcement



# Illustrative Air Advanced Monitoring

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The screenshot shows a web browser displaying the Village Green Project website. The page features a large image of a wooden structure with solar panels and a bench. A dark overlay box displays the following data:

Most Recent Observations Kansas City, KS	
43 Ozone ppb	69.1 °F
3 PM <sub>2.5</sub> µg/m <sup>3</sup>	72.3% humidity
	4.3 mph SE

observed Wed 8:21 AM CDT

Explore Kansas City, KS

**Welcome to the Village Green Project**  
a research effort to discover new ways of measuring air quality and weather conditions in community environments.

- Measuring and communicating on-the-spot air quality and weather conditions for research and awareness
- Developing small and rugged data collection systems that can be powered by the wind and sun
- Partnering with communities to pilot test the new technology in outdoor community spaces.

The smartphone screen displays the following information:

**Local Pollution Levels**

Low»	21	Ozone ppb	Very High
Low»	8	PM <sub>2.5</sub> µg/m <sup>3</sup>	High
	60 °F	70% humidity	Med
		2 mph S	Low

**Current Area Air Quality Index »**

Good

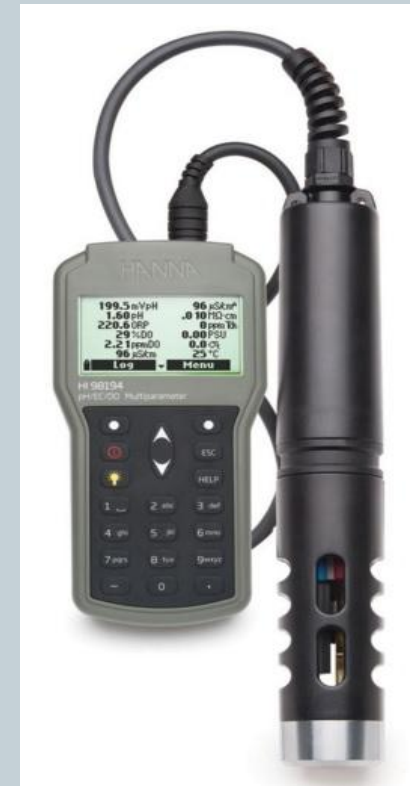
observed Mon 8:31 AM EDT

Explore Data »

FAQS »

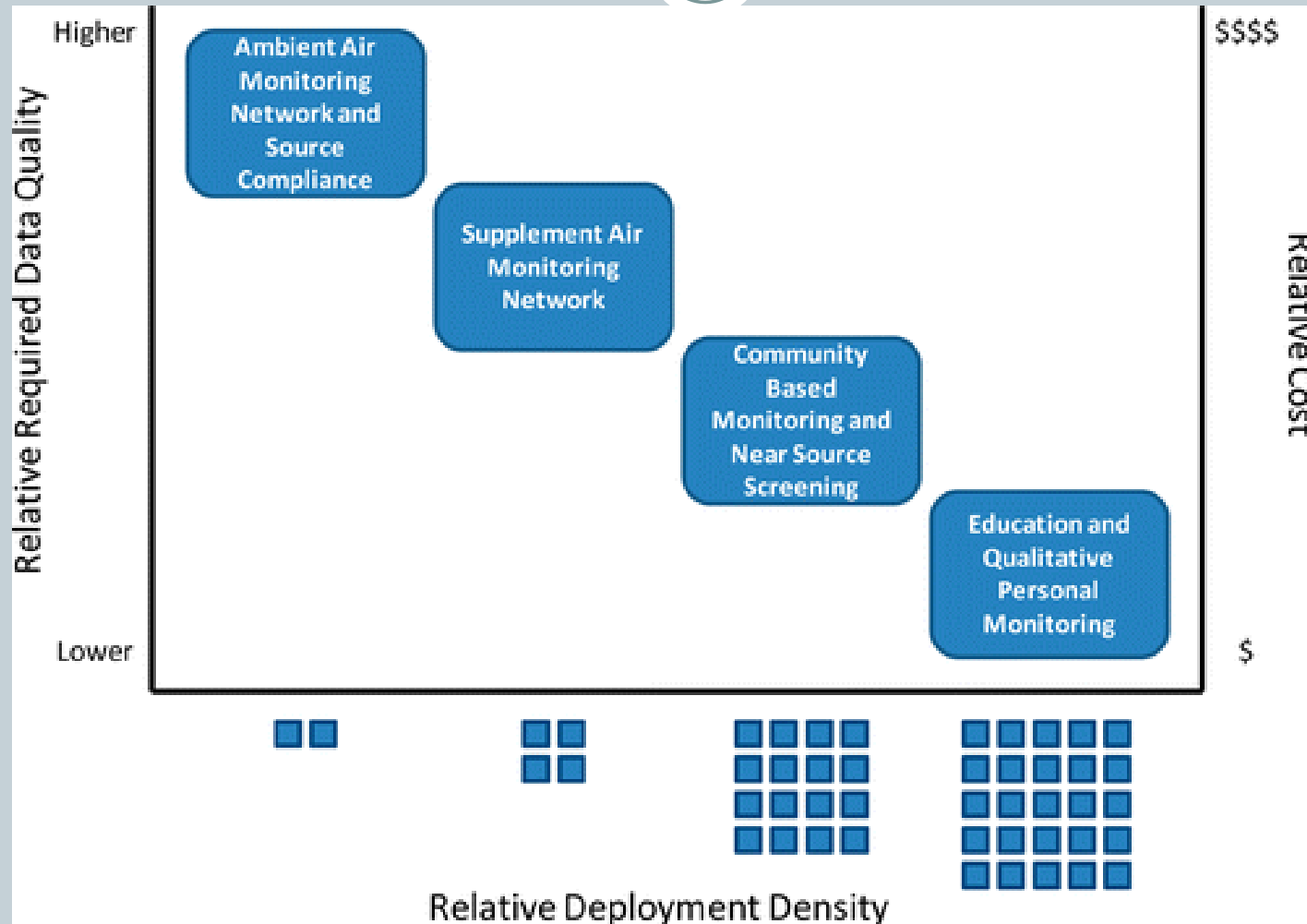
# Illustrative Water Advanced Monitoring

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# Advanced Monitoring Future in Air

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# Advanced Monitoring Will Improve Environmental Protection and Reduce Pollution

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[NPR story on industry use of advanced monitoring](#)



Ability of individuals to make personal risk decisions

Targeted inspections and more effective enforcement

Local community awareness of environmental quality

# Democratization of Environmental Monitoring

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

# 3. Electronic Reporting

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- Information technologies make new solutions possible
- Smart tools and 2-way communication
- EPA memo makes e-reporting default in new rules <https://www.epa.gov/compliance/policy-statement-e-reporting-epa-regulations>
- Wastewater e-reporting rule finalized September 2015
- Ohio DMR e-reporting checks submissions overnight and sends notices if problems, allows permittee to correct and resubmit.



## 4. Increased Transparency

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- Evidence that effective transparency drives performance
- Drinking Water Consumer Confidence Reports led to reductions in violations (30-44%)

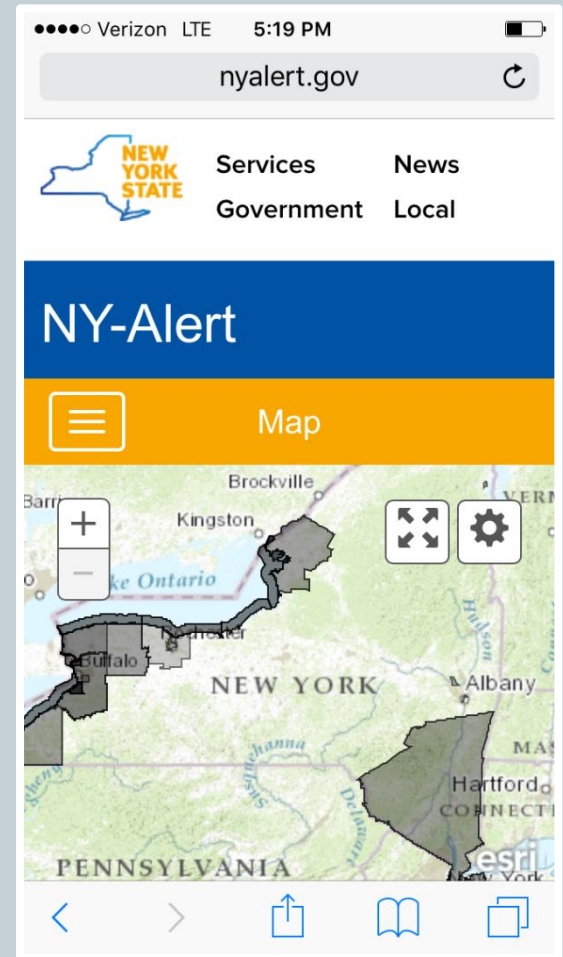


# Features of a Strong Transparency Program

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Better compliance supported by:

- Information about specific facilities and locations
- Real-time information that allows for quick feedback
- Available all the time to everyone on the internet



# 5. Innovative Enforcement

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- Use Next Gen tools in enforcement settlements
- Enhance targeting and data analysis to identify and address most serious violations
- New enforcement approaches



# Next Gen in Civil Settlements

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Since January 2015, EPA civil enforcement staff must consider Next Generation Compliance tools in all cases and include them in settlements when appropriate



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JAN 07 2015

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

## MEMORANDUM

**SUBJECT:** Use of Next Generation Compliance Tools in Civil Enforcement Settlements

**FROM:** Cynthia Giles, Assistant Administrator

**TO:** Regional Counsels  
Regional Enforcement Division Directors  
Regional Enforcement Coordinators  
OECA Office Directors  
Office of Civil Enforcement Division Directors  
Office of Site Remediation Enforcement Division Directors  
Federal Facility Enforcement Office Staff Directors

### I. Introduction

Next Generation Compliance is our initiative to increase compliance with environmental regulations by using advances in pollutant monitoring and information technology combined with a focus on designing more effective regulations and permits to reduce pollution. Next Gen consists of five interconnected components, including Innovative Enforcement, each of which is designed to move us forward toward higher compliance and more environmental benefits from our regulations and enforcement authorities.<sup>1</sup> This memorandum focuses on the use of Next Gen compliance tools in civil enforcement settlements, which is a subset of the Innovative Enforcement component.

# Innovative Enforcement

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## Marathon Petroleum Corporation Clean Air Settlement

- Required to use infrared gas-imaging camera at fuel storage tanks to identify potential defects that may cause excessive emissions
- If defects found, Marathon will conduct up-close inspections and perform repairs where necessary



Marathon Petroleum Company (Detroit, Michigan)



# Innovative Enforcement

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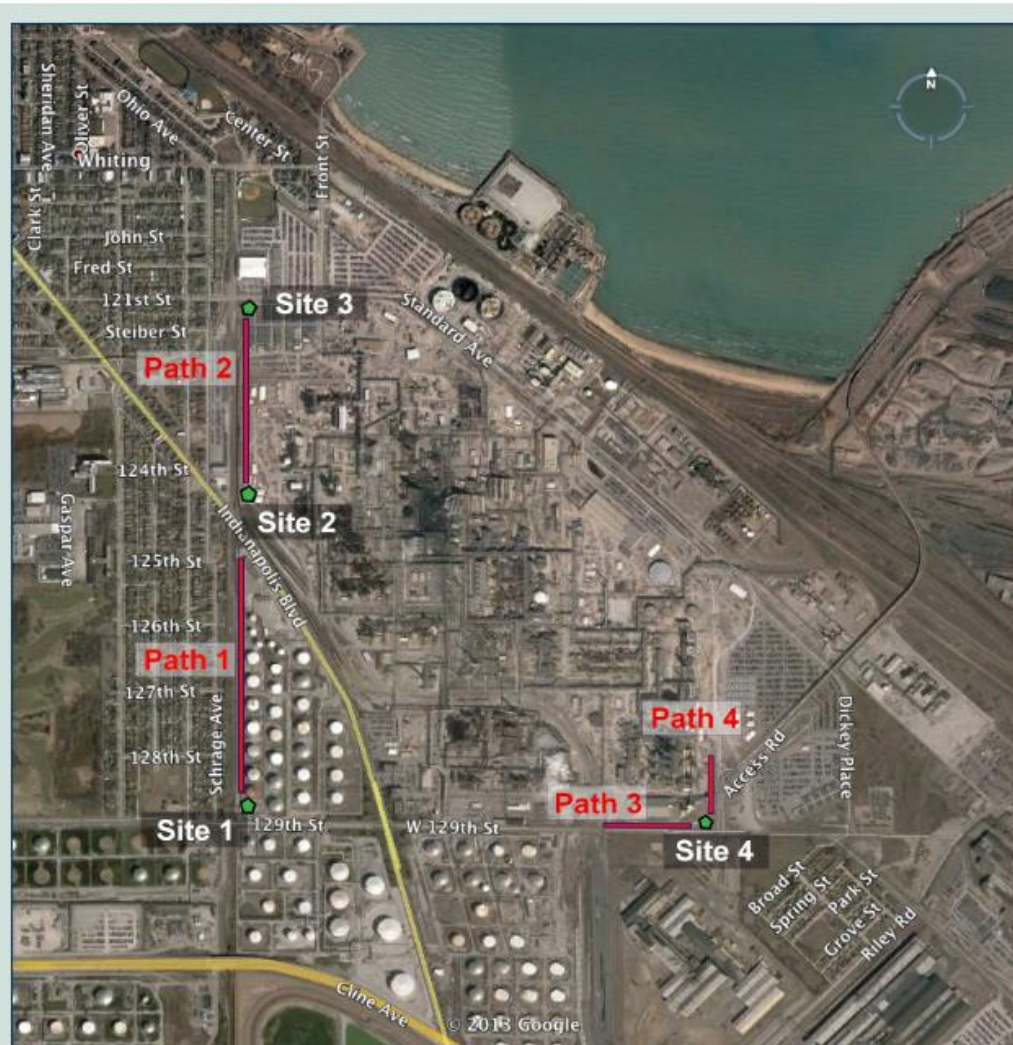
## Clean Air Act settlement with BP Whiting (Indiana)

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



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

Chemical Information

Glossary

**Other**

Documents

Contacts

# Innovative Enforcement

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## RCRA Settlement with Total Petroleum Puerto Rico

- Fully automated electronic release detection monitoring at 125 facilities
- Transmit monitoring data to central location
- Probing sensors connected to on-site computer console unit with audible and visible alarms to alert nearby gas station personnel of leaks
- Provide quarterly reports to EPA on operation of systems



# Innovative Enforcement

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## Clean Air Act Settlement with Noble Energy

- Infrared camera inspections of vapor control systems and tanks
- Pressure monitors with continuous data reporting
- Post vapor control system engineering evaluations and modifications to provide other companies the opportunity to learn from findings and apply them to their own storage tanks

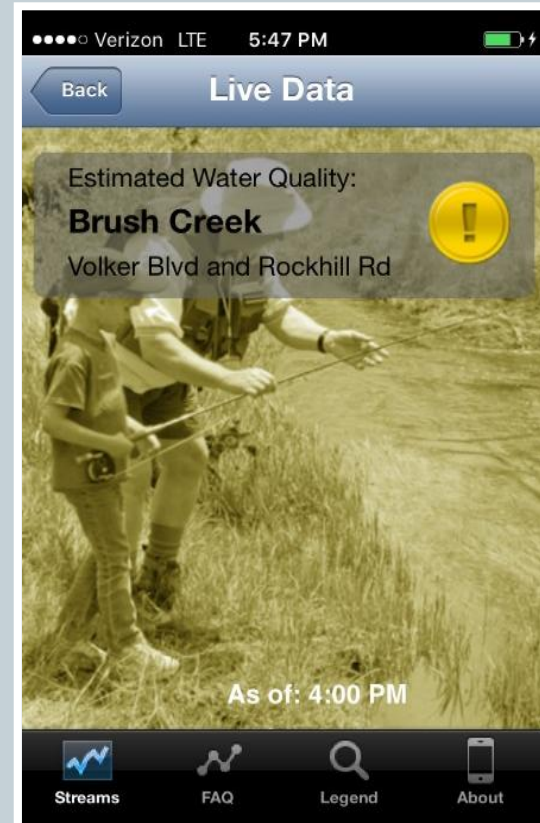


# Next Generation is Here Today

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Transformative power of:

- New monitoring technologies
- Revolution in information technologies
- Transparency
- Building compliance drivers into programs from the start



# For More Next Gen Updates...

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- Next Gen Developments with Engineer/Industry Response
- Tomorrow at 8:55am