

# Next Generation Compliance



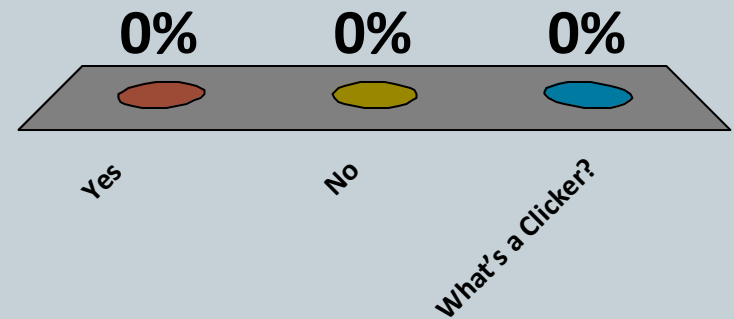
**ED MESSINA  
U.S. EPA, OFFICE OF ENFORCEMENT AND  
COMPLIANCE ASSURANCE**

**2014 NACAA JOINT PERMITTING AND ENFORCEMENT  
WORKSHOP  
DECEMBER 10, 2014**

# Is my Clicker working?



1. Yes
2. No
3. What's a Clicker?

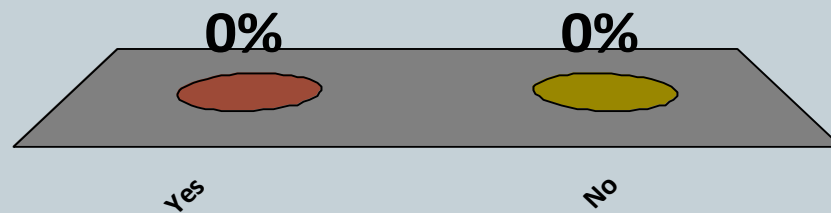


# Do you know me?

3

A. Yes

B. No

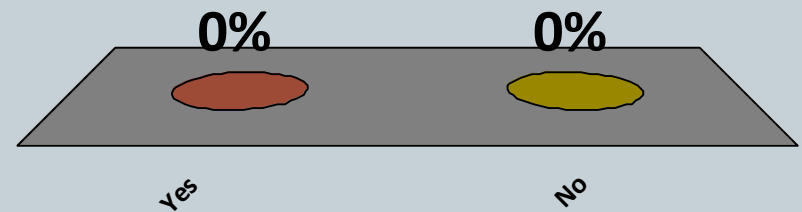


# Have you heard of Next Gen Compliance?

4

A. Yes

B. No

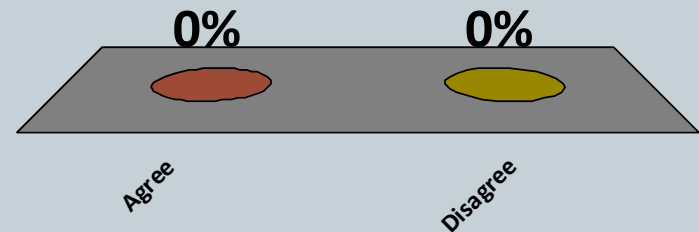


# Permitting and Enforcement: The Present State

5

Compliance in my state is excellent. (90 percent compliance or better)

- A. Agree
- B. Disagree



# Permitting and Enforcement: The Present State

6

Do you expect resources for enforcement to:

- A. Increase
- B. Stay the same
- C. Decline



# Permitting and Enforcement: The Present State

7

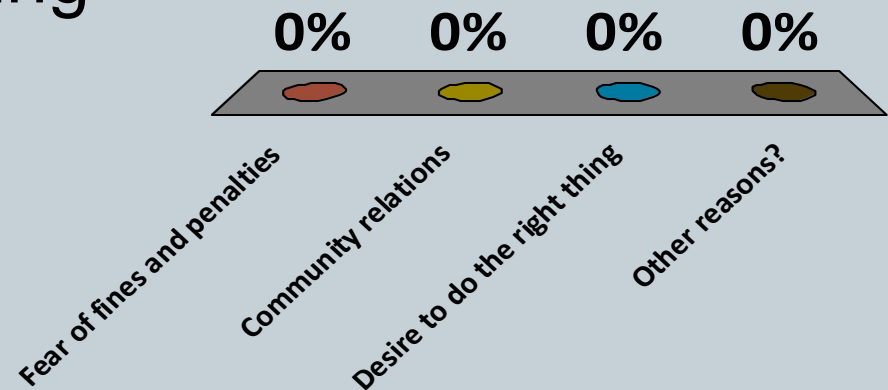
- Compliance still below expectations
- Resources not growing
- How else can we get better outcomes?

# Psychology of Compliance

8

## Why do you think people comply?

- A. Fear of fines and penalties
- B. Community relations
- C. Desire to do the right thing
- D. Other reasons?



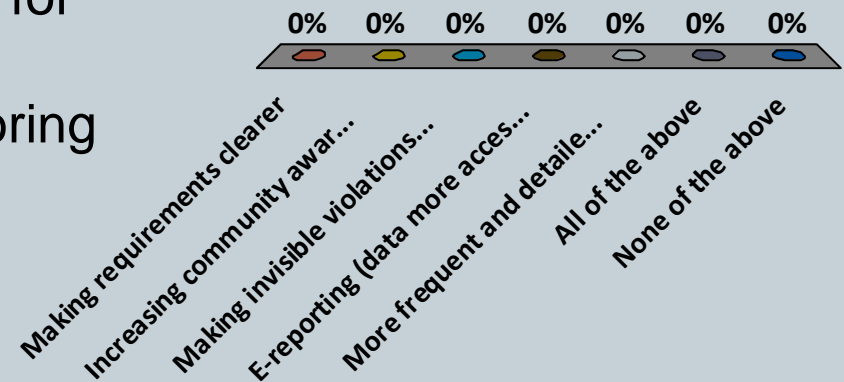


# Psychology of Compliance

9

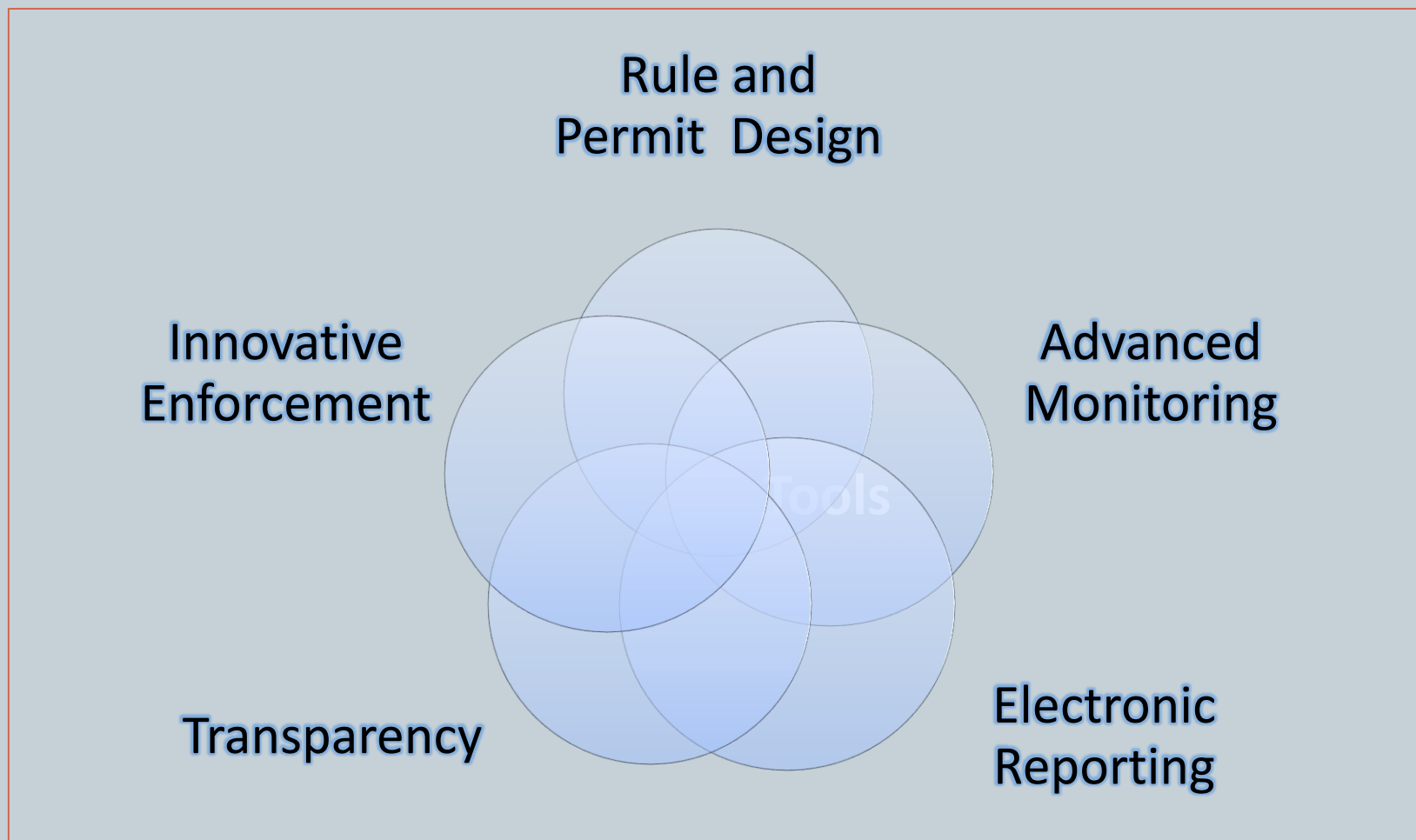
**Do you think that any of these things would significantly encourage compliance?**

- A. Making requirements clearer
- B. Increasing community awareness of emissions and violations
- C. Making invisible violations more visible through monitoring
- D. E-reporting (data more accessible for analysis by regulators)
- E. More frequent and detailed monitoring
- F. All of the above
- G. None of the above



# Next Generation Compliance Components

12



# Value of Next Generation Compliance

11

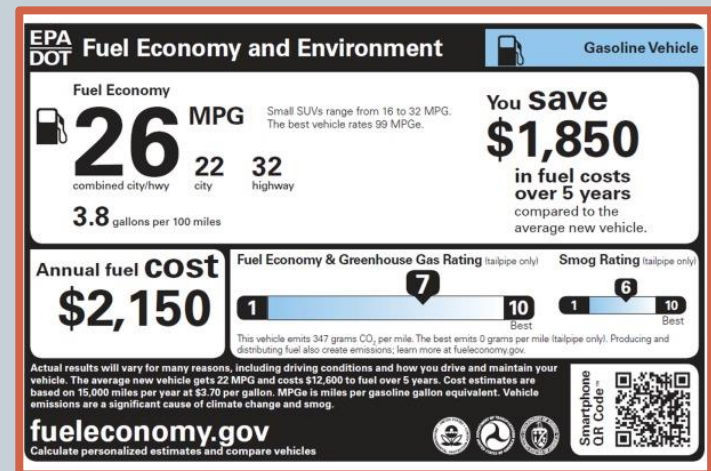
- Increase program efficiency and effectiveness while driving compliance.
- Better information on pollution through advanced monitoring and IT
- More complete, shared information leads to greater accountability.
- Create opportunities to consider new measures related to compliance.
- Experiment and test new ideas for solving tough environmental problems.

# 1. More effective rules and permits

12

## 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



## 2. Advanced monitoring technologies

13

- 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**

# Continuous/Fence-Line Monitoring in Region 5

14



**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)

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

15

## Photoionization Detector



## Infrared Camera



# IR cameras make the invisible visible

16



- Most EPA regions, 20+ states are using them
- EPA is providing 10 more cameras to states, and possibly more.
- August 2014 solicitation led to 18 state proposals
- Top 10 selected; may find funds for one more



# Off-site assessment with *GMAP-REQ*

*(Geospatial Measurement of Air Pollution – Remote Emissions Quantification)*



- Drive-by Mapping
- Position vehicle in the plume
- Acquire CH<sub>4</sub> and wind data for 20 min
- Pull a 30 second canister sample for VOC information

driving path

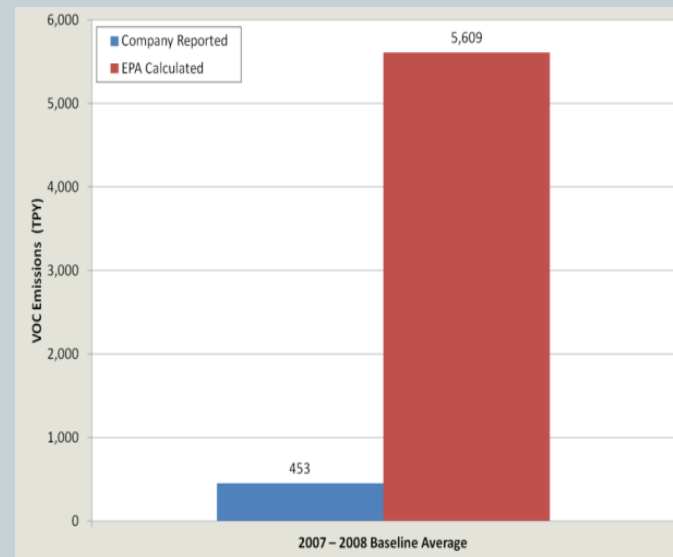
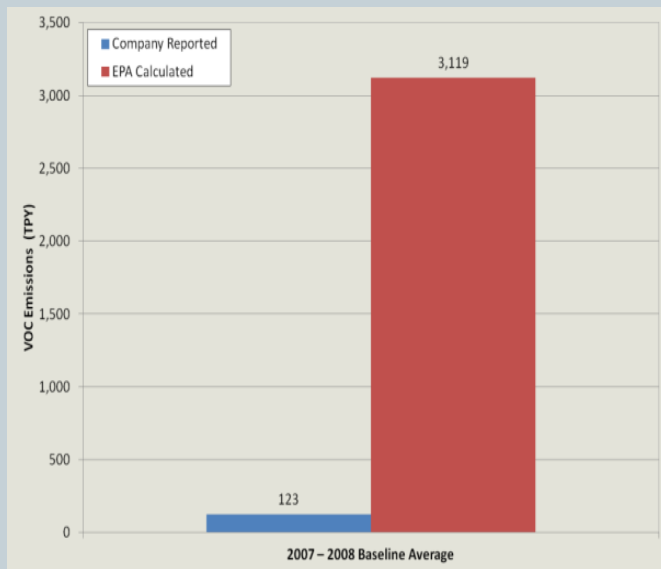


Spike in CH<sub>4</sub> indicates emission

# Advanced monitoring

18

## Two examples from flaring enforcement



# Village Green Project, Durham, NC

19

## ■ Solar-Powered Park Bench

- Located in Raleigh, NC

## ■ Air Sensors Monitor:

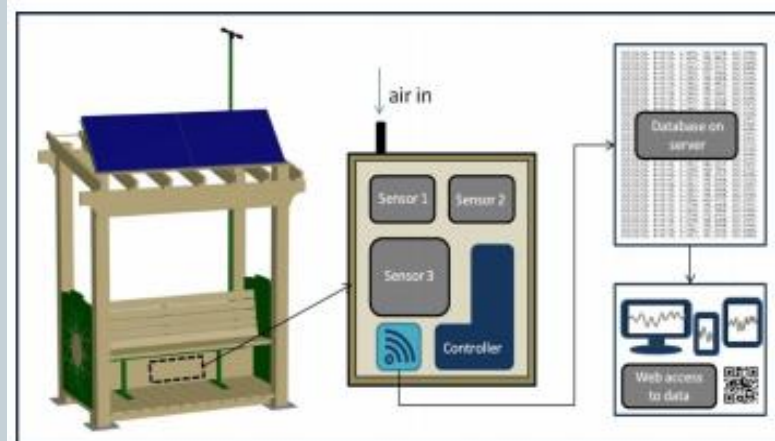
- Air Quality (ozone, particulates, etc.)
- Weather Information (wind speed, temperature, humidity)

## ■ Real Time Results

- Uploaded to Website
- Accessible to communities
- Available on mobile app

## ■ EPA partnering with states

- EPA will build 3 more stations
- Providing grants to 5 states



*Air-monitoring system incorporated into a park bench.*

# Merging Air Pollution Sensors with Information Technology

20

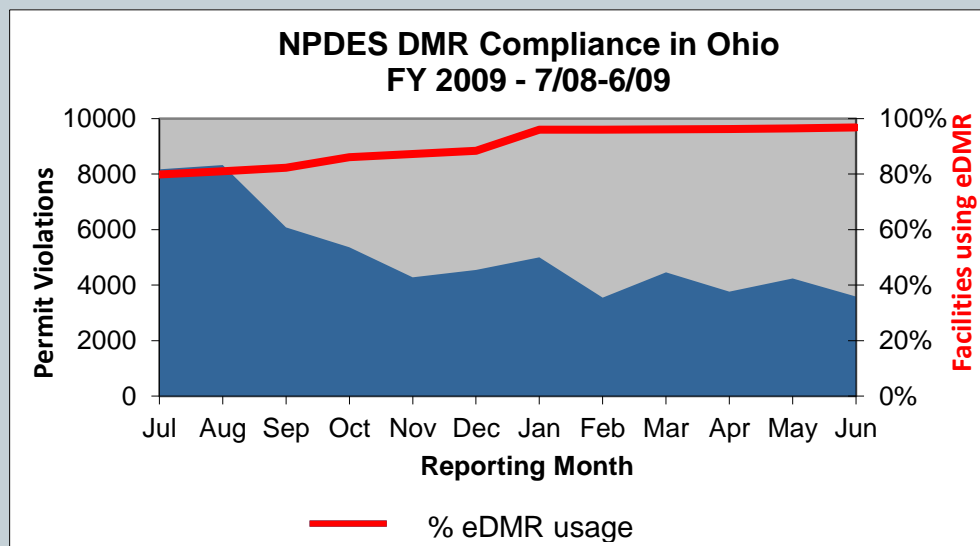


Credit: CitiSense Air Quality Monitoring Mobile Sensors, University of California, San Diego, Jacobs School of Engineering. See: [http://ucsdnews.ucsd.edu/pressrelease/small\\_portable\\_sensors\\_allow\\_users\\_to\\_monitor\\_exposure\\_to\\_pollution\\_on\\_their\\_mobile\\_devices](http://ucsdnews.ucsd.edu/pressrelease/small_portable_sensors_allow_users_to_monitor_exposure_to_pollution_on_their_mobile_devices)

### 3. Electronic reporting

21

- Information technologies make new solutions possible
  - ICIS – NPDES
  - ICIS – Air
  - Modernized ECHO
- NPDES e-reporting rule proposed July 2013
  - includes e-reporting tools: NetDMR and eNOI



# E-reporting now EPA default

22



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

SEP 3 0 2013

DEPUTY ADMINISTRATOR

## MEMORANDUM

**SUBJECT:** E-Reporting Policy Statement for EPA Regulations

**FROM:** Bob Perciasepe

A handwritten signature in black ink that reads "Bob Perciasepe".

**TO:** Assistant Administrators  
General Counsel  
Inspector General  
Associate Administrators  
Regional Administrators

We are establishing a new Agency-wide policy on e-reporting that specifies in developing new regulations that we will start with the assumption that reporting will be electronic and not paper based. And we will use shared services to do this to the maximum extent possible. This Policy Statement is one important step forward in the Agency's larger E-Enterprise for the Environment Initiative.

## 4. Increased transparency

23

- **Evidence that effective transparency drives performance**
- **Restaurant health inspection grades**
- **Environmental Applications:**
  - SDWA Consumer Confidence Reports
  - Echo modernization
  - State performance dashboards
  - Mapping capability



# Leveraging transparency for compliance: NY State Sewage Pollution Right-to-Know Act

24



- Currently, signs identify discharge points
- New state law will require POTWs to electronically report sewage discharges to government *and* the public within four hours of discovery



# Leveraging transparency for compliance: NY State Sewage Pollution Right-to-Know Act

25



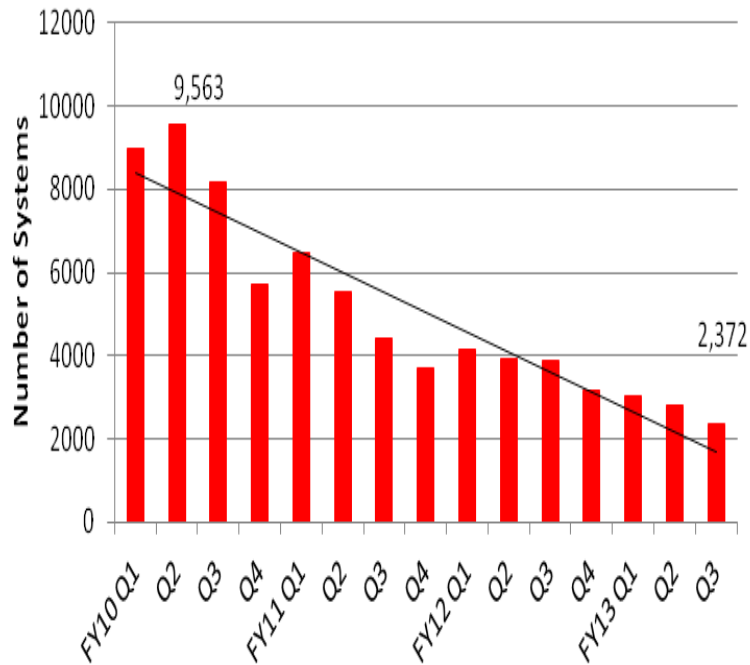
The screenshot shows the NY-Alert website interface. At the top, there is a navigation bar with "New York State" and "State Agencies". Below this is a banner featuring the NY-Alert logo, the text "NY-ALERT" with "Andrew M. Cuomo Governor" underneath, and three images: a fire, a damaged building, and a flooded area. A yellow bar below the banner contains the text "(Already Signed Up?) Click to Sign In" and "NY-ALERT". The date and time "Friday, November 14, 2014 4:56:00 PM" are displayed in the top right. On the left side, there is a vertical menu with links: "NY-Alert Home", "Radiological Emergency Program", "EAS/Alert Messages", and "Press Releases & Publications". The main content area is titled "Press Releases & Publications" with the instruction "(To view the full text of a press release, click on its headline)". A press release titled "Halloween DWI Crackdown Enforcement" is visible, dated "11/12/14 10:18 AM", with a summary of enforcement actions in Niagara County.

- Reported sewage discharges will be posted on “NY-Alert” website – state’s emergency alert system
- Publicized via RSS feed and mobile apps
- Reports also posted on DEC website
- Data included in an Annual Compliance Report

# Innovative enforcement public targeting tool

26

Public Water Systems with Serious Violations Left Unaddressed



## Drinking water serious violators

- New scoring system
- New enforcement strategy: return to compliance in 6 months or face enforcement
- 74% reduction in serious violators in 3 years

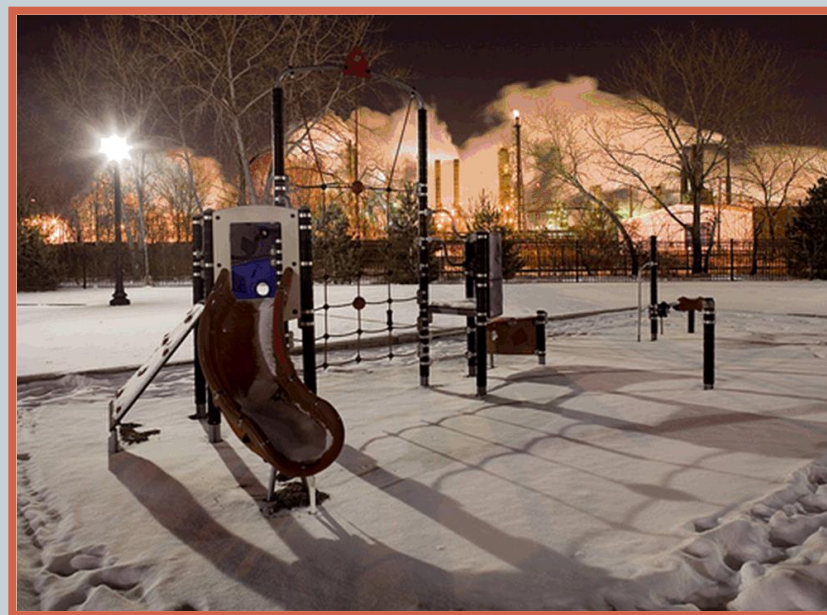
U.S. Environmental Protection Agency

## 5. Innovative enforcement

27

### Include Next Gen ideas in settlements

- Fence line monitors (advanced monitoring)
- Electronic reporting under consent decree (e-reporting)
- Public posting of compliance and pollution data (transparency)
- Third party auditing



# CAA settlement with BP Whiting (Indiana)

28



- 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

# CWA settlement with Roquette America (Iowa)

29

- Next Gen Tools included in settlement:
  - EPA-approved contractor must complete annual 3<sup>rd</sup> 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



# CAA settlement with Shell Deer Park (Texas)

30



- 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

# TSCA Settlement with Lowe's

31

- New lead paint compliance program covers 1,700 stores and thousands of contractors



- Lowe's use only EPA-certified contractors for renovations of pre-1978 housing or of any child-occupied facilities and will:
  - Suspend contractors not in compliance
  - Verify receipt of lead safe checklist prior to paying the companies

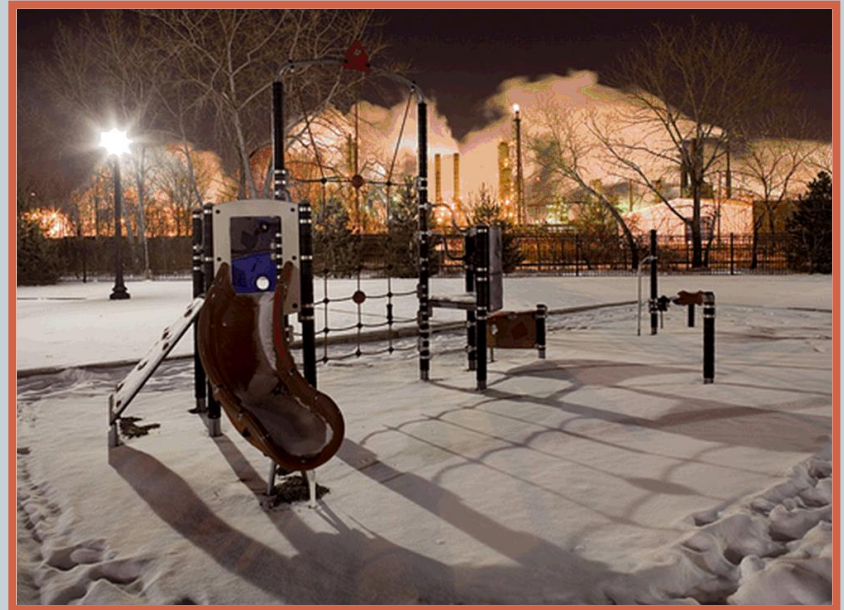
# Applying Next Gen to Permitting

32

Permits provide the facility's roadmap to compliance

Many Next Gen concepts can be incorporated at the permitting stage

Authorities vary among programs, but many provide room for innovation





# Next Gen Ideas

33

- Can permit requirements be written to be clear, unambiguous and understandable?
  - Use the permit to educate?
  - Simplified cover sheet or attachment for shop floor?
  
- Can permits require reporting in electronic form?
  - Not just email
  - Enhance review of submitted data?
  
- Transparency: report data to public?
  - Agency website?
  - Facility website?

# Next Gen Ideas Contd.

34

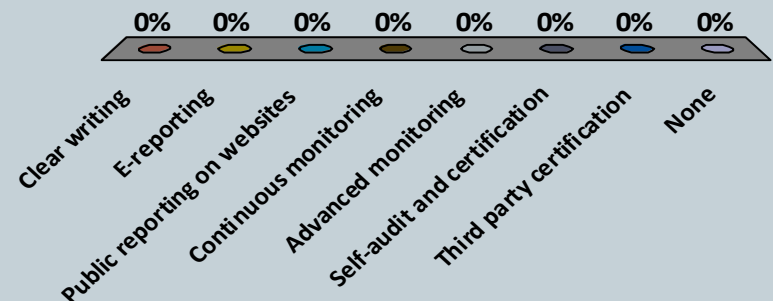
- Can permits leverage immediate feedback and continuous monitoring technologies?
- Take advantage of emerging, advanced monitoring?
  - E.g., fenceline monitoring for HAPs
- Require periodic self-monitoring and self-certification?
- Use independent 3<sup>rd</sup> party to verify and report?

# Feedback?

35

**Have you already used any of the approaches described today in a permit or settlement? (can select more than one)**

- A. Clear writing
- B. E-reporting
- C. Public reporting on websites
- D. Continuous monitoring
- E. Advanced monitoring
- F. Self-audit and certification
- G. Third party certification
- H. None

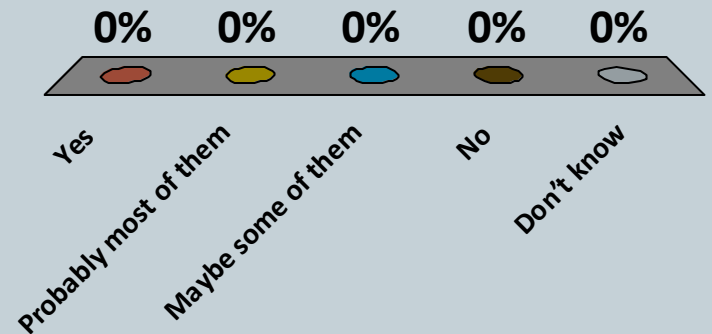


# Feedback?

36

If you haven't used them already, do you think these ideas could be used in your state?

- A. Yes
- B. Probably most of them
- C. Maybe some of them
- D. No
- E. Don't know

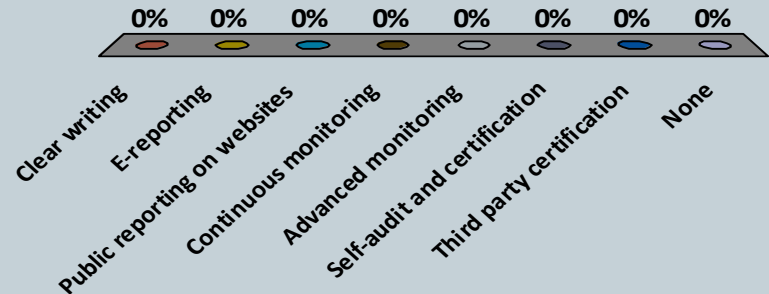


# Feedback?

37

Which of these approaches do you think you could use if you are not doing so already? (can select more than one)

- A. Clear writing
- B. E-reporting
- C. Public reporting on websites
- D. Continuous monitoring
- E. Advanced monitoring
- F. Self-audit and certification
- G. Third party certification
- H. None



# Feedback?

38

Do you see barriers to using these ideas, and if so what are they?  
(can select more than one)

- A. No barriers
- B. Uncertainty about legal authority
- C. Lack of justification for added burden
- D. Lack of agency budget (e.g., for e-reporting)
- E. Other



# EPA-led effort to develop pilot permits

39

- EPA has formed teams for CAA, NPDES permitting programs
- Each team led by a region
- Steering committee coordinates
- Seeking state involvement
- NPDES is farthest along (insert examples)
- CAA, RCRA being formed
- Looking for permits in which Next Gen ideas can be tested
- Also looking for examples from existing permits

# Next Generation Compliance Resources

40

## General Next Gen

[www2.epa.gov/compliance/  
next-generation-compliance](http://www2.epa.gov/compliance/next-generation-compliance)

## Next Gen Strategic Plan

[www2.epa.gov/compliance/  
next-generation-compliance-strategic-plan-  
2014-2017](http://www2.epa.gov/compliance/next-generation-compliance-strategic-plan-2014-2017)