

Policy Perspectives Session:

Using Next Generation Compliance Drivers in Permits and Rules

Advanced Monitoring, Remote Sensing, and Data Gathering, Analysis and Disclosure in Compliance and Enforcement Symposium

The George Washington University Law School
March 27, 2015

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New Approach: Next Generation Compliance

Next Generation Compliance

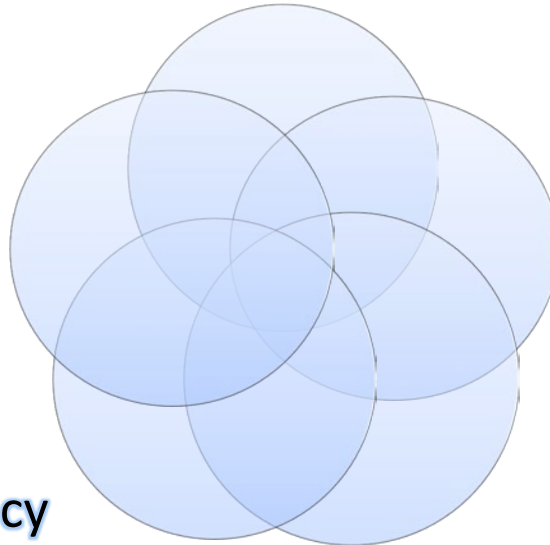
**Regulation
and Permit
Design**

Innovative
Enforcement

Advanced
Monitoring

Transparency

Electronic
Reporting



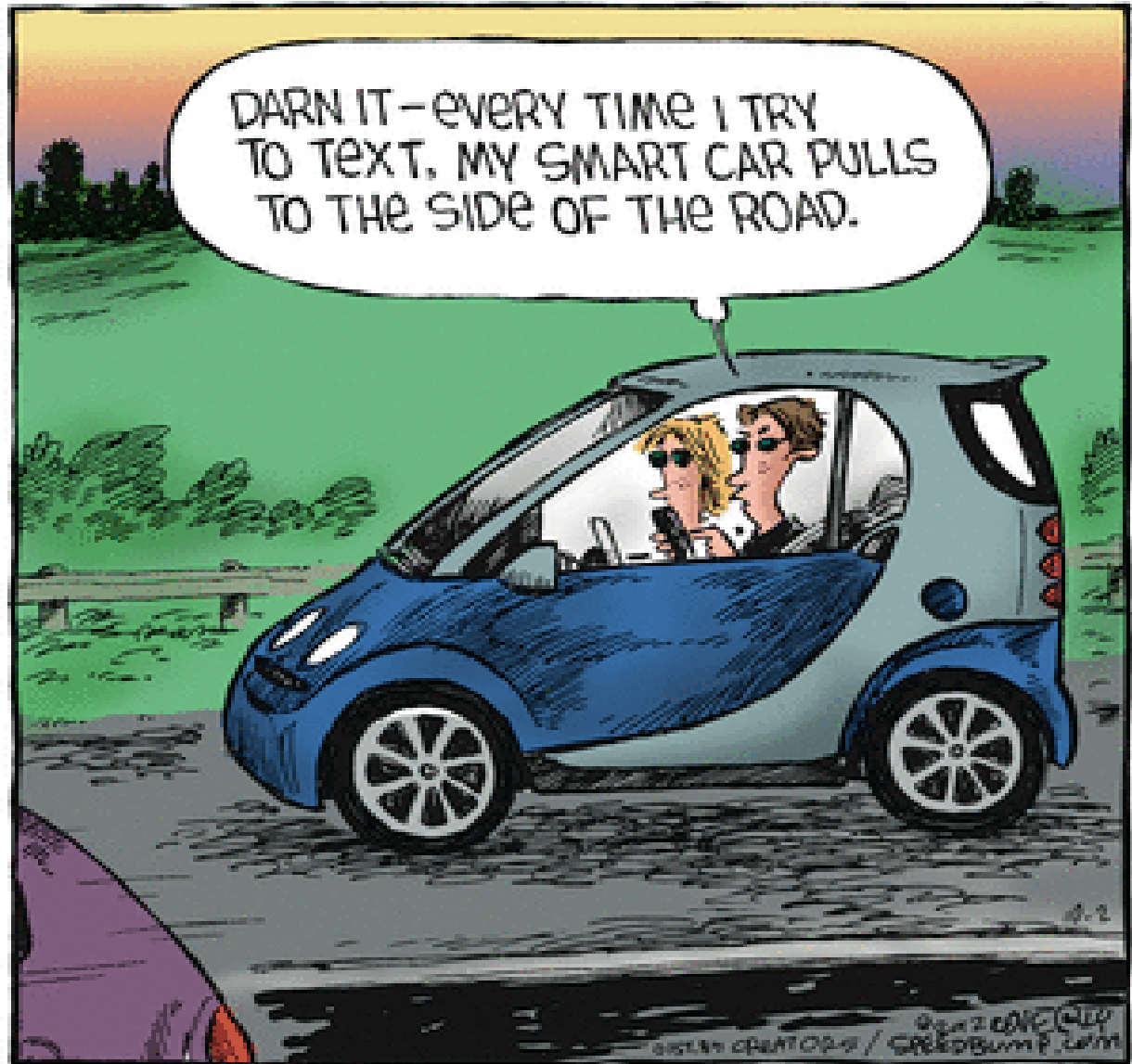
Technology Opportunities



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

The World is Changing: “Next Gen” is Everywhere



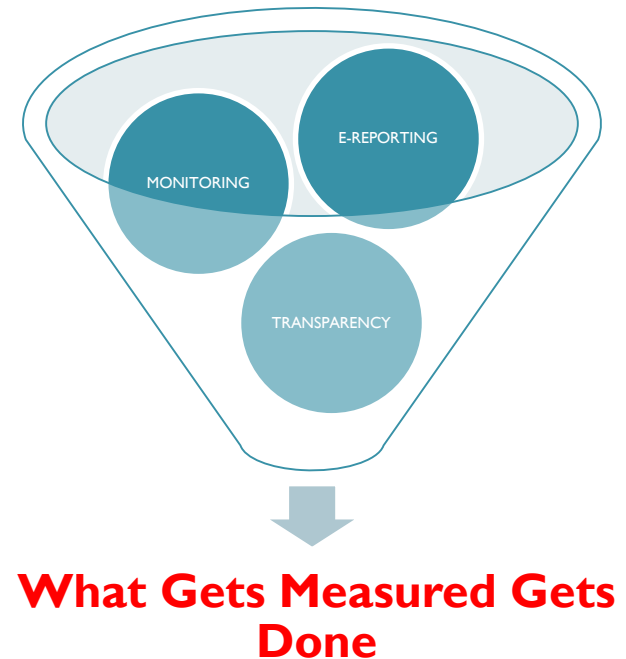


Common Causes of Environmental Noncompliance

- Costs often internal and immediate to regulated entity; benefits often long term and to public.
- Complexity
- Lack of awareness
- Disagree with the law
- “I’m special” or “Comply with spirit of law”
- Perceived norm of noncompliance
- Some competitors not covered by rule

Developed Principles and tools for Designing Effective Rules & Permits

- Leverage advances in:
 - Information technology
 - Advanced Monitoring
 - Social science
 - Best practices



Overview: 5 Principles for Designing Effective Regulations and Permits

1. Applicability and simplicity
2. Structural: compliance easier than noncompliance
3. Self-monitoring and third-party monitoring
4. E-Reporting and transparency
5. Market forces and incentives

Principle I - Enable everyone to easily identify who is regulated and the applicable requirements

- A. Focus regulatory requirements on fewer, better defined “upstream” sources”
- B. Use clear and objective regulatory requirements

Clear and Objective Requirements vs Precision/Complex



SPEED LIMIT

80

If between 25 and 80 years old, with at least 5 years of safe driving as defined by an approved state program, and 20/20 vision as determined by a licensed eye professional; or if certified as a professional driver pursuant to 40 CFR 12(b)(2)(ii)(a)(x)(b). Except if driver has had less than 6 hours of sleep the prior night or has been driving for more than 12 hours in the prior 24 hours, then 65 mph, unless following state-approved Best Driving Practices.

65

If between 21 and 85 years old with at least 2 years of safe driving as defined by the approved state program

55

All drivers who do not satisfy conditions for driving at higher speeds.

Principle 2 - Structure regulations to make compliance easier than noncompliance

- A. Build in physical structures and product designs to make noncompliance difficult
- B. Use immediate feedback technology
- C. Build in self-implementing regulatory consequences to deficiencies and noncompliance

Automobile Design



Automatic Feedback Systems

- Software combined with hardware can:
 - Stop or modify operations
 - Send immediate alerts via email, text
- Can be combined with disclosure to leverage public accountability

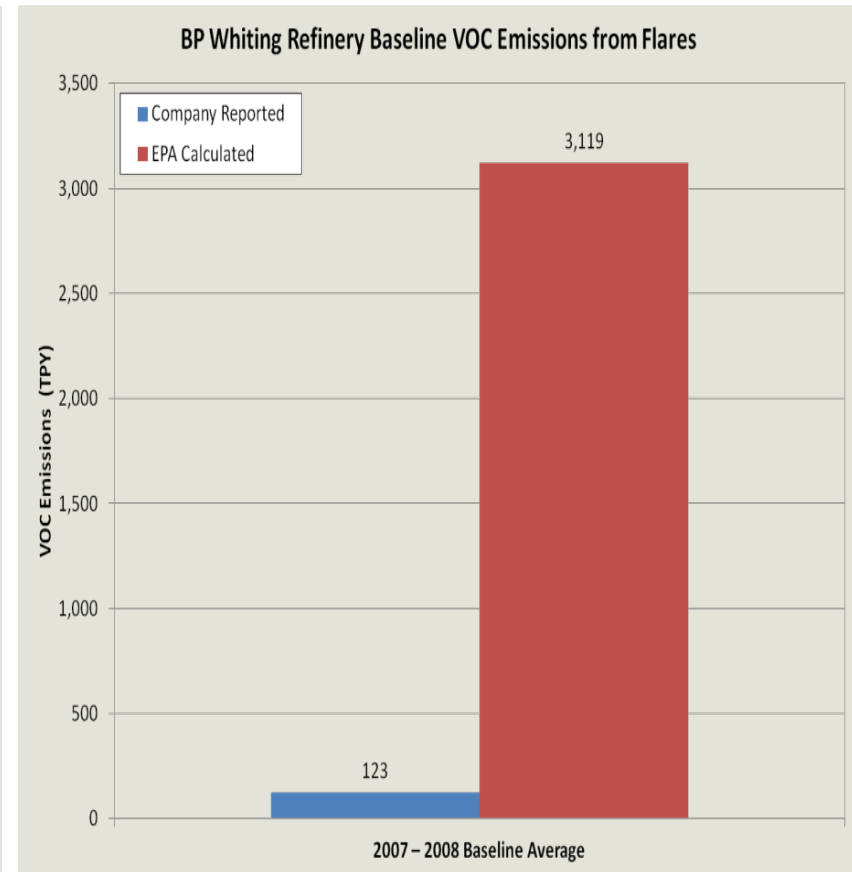
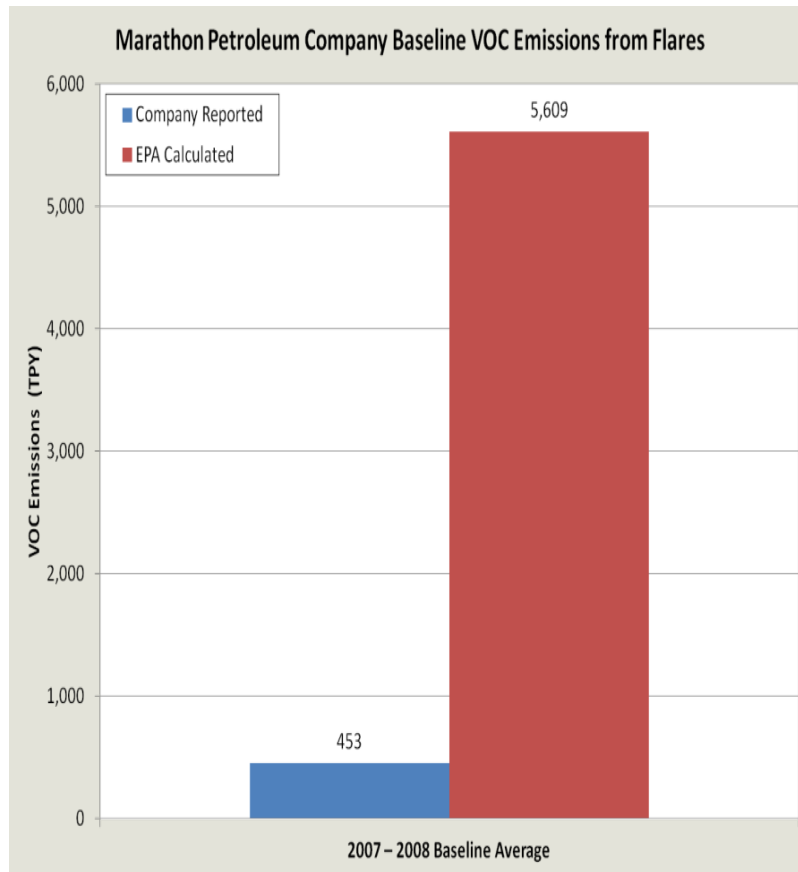


pH meters are like teenagers

Principle 3: The 5Ws of Compliance Monitoring

- **Who**
 - Source performs
 - **Independent third party**
- **What**
 - Qualitative requirements (Quantitative)
- **When (frequency)**
 - Continuous
 - Periodic
 - Upon occurrence of trigger event
- **Where**
 - Overall facility
 - Emission/discharge points
 - Fence line of facility (e.g., air monitoring)
 - Outside facility (e.g., downstream from discharge pipe)
- **Why**
 - **Compliance driver: establishes minimum requirements for facility to focus on compliance**

Example - Advanced monitoring in flare enforcement – 'Estimating v. Knowing' - Marathon and BP Whiting CAA CDs



PFTIR data showed that actual emissions (in red) at Marathon and BP were *10 times and 25 times greater*, respectively, than the companies' best engineering estimates (in blue)

Principle 4 - Leverage accountability and transparency:

- A. Electronic reporting to the government with smart tools to guide regulated entity.
- B. Public accountability via websites, mailings, signage, social media.

Leveraging Transparency for Compliance

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



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

Principle 5 - Leverage benefits, market forces, and other incentives that promote compliance

- A. Empower the local community
- B. Show investors and consumers when products and services are compliant
- C. Harness market forces (e.g., emission reduction credits)
- D. Provide and highlight benefits to regulated entities (e.g., energy efficiency)

CAA Acid Rain Program

- Pollution sources are assigned SO_2 allowances that may be bought, sold, or banked
- Electronic reporting, continuous monitoring, clear applicability

