



# EPA's Office of Enforcement Compliance Assurance Initiatives



# Question 1

- Who is this guy and where is Adam?



# EPA Administrator's Budget

- Taking Action on Climate Change
- Cleaning Up Our Communities
- Improving Air Quality
- Expanding the Conversation on Environmentalism and Working for Environmental Justice
- Protecting America's Waters
- Building Strong State and Tribal Partnerships
- Assuring the Safety of Chemicals



# Fiscal Year 2011-2013 National Enforcement Initiatives

- Keeping raw sewage and contaminated stormwater runoff out of our waters
- Cutting animal waste to protect surface and ground waters
- Reducing widespread air pollution from the largest sources, especially the coal-fired utility, cement, glass, and acid sectors
- Cutting toxic air pollution that affects communities' health
- Assuring energy extraction sector compliance with environmental laws
- Reducing pollution from mineral processing operations





# Process

- Initiatives selection based on three criteria
  - a history of noncompliance with environmental laws
  - the potential for significant environmental or human health benefits
  - an appropriate Federal role

# Air Toxics Initiative

- Focus Areas
  - Flares
  - Leak detection and repair (LDAR)
  - Benzene/HAPs
  - Community Based Approach
  - Excess Emissions



# Flares

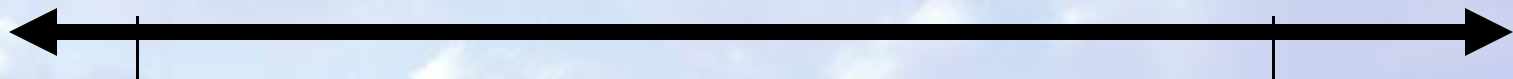
- Parts 60 and 63 (“General Provisions”)
  - Flares that are control devices must combust gases with heat content of  $\leq 300$  Btu; and
  - Meet flare design specifications
- Flares -- Two major problems:
  - Combustion of gases with low Btu content, and/or
  - Over-steaming
- Causing --
  - Incomplete combustion
  - Significant HAP emissions





# Steam Use

Good Combustion:  
Turbulent, Hot Flame



Insufficient Steam:  
Smoke due to poor mixing-  
Not enough oxygen

Excess Steam:  
Dilution and  
Cooling of Flame



# Oversteaming

- Range of Proper Steam Addition
  - Low End – Just enough to supply sufficient oxygen and avoid smoke (termed: incipient smoke)
  - Recommended (or design) Parameter – Suggested optimum by manufacturer, API
    - Stated in lb steam/lb vent gas, norms near 0.5 lb/lb
  - High End – Flame quenching by lowering temperature
  - Operating between “incipient smoke point” and “recommended ratio” results in good combustion, and



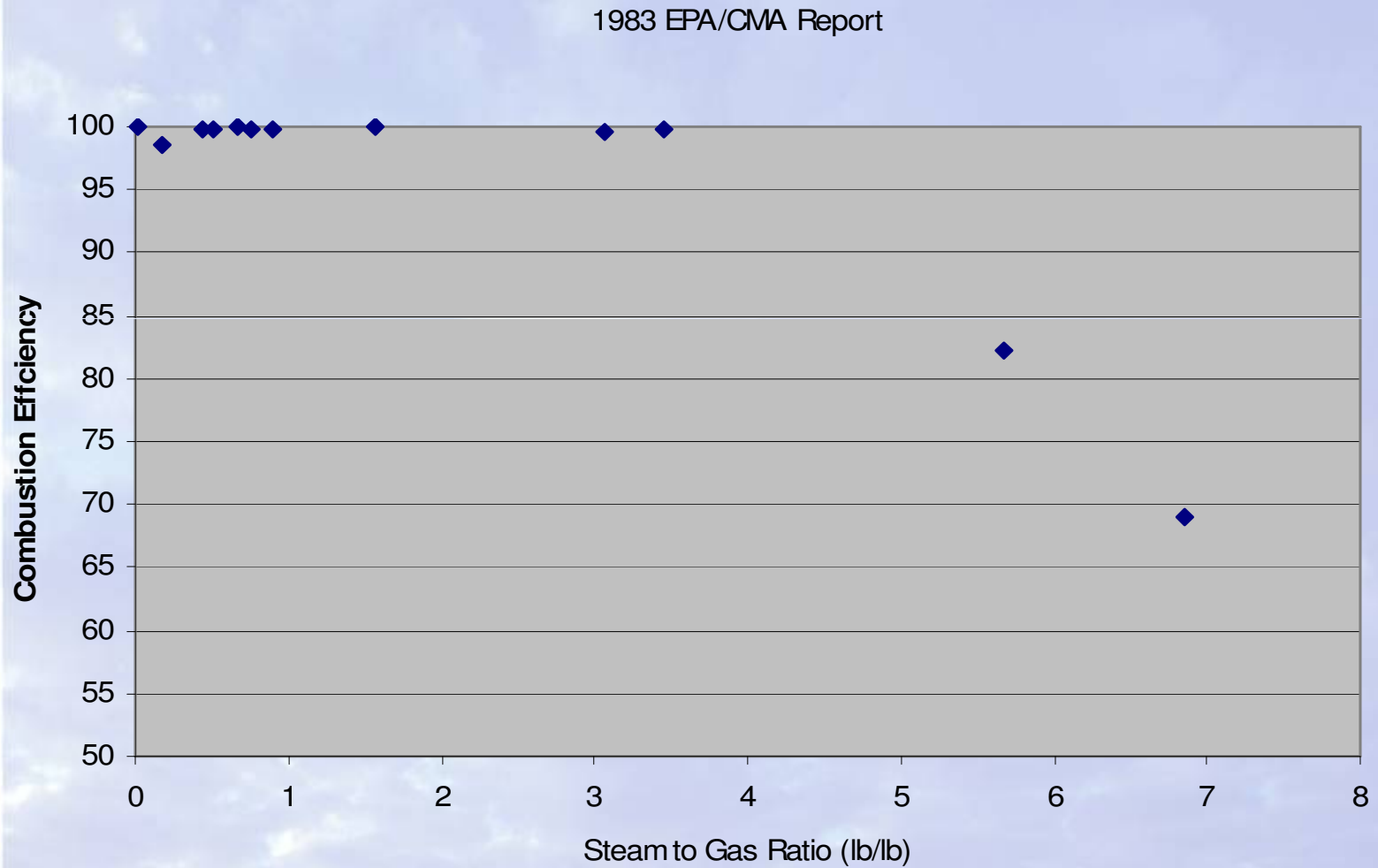
# Rationale for Steam/Vent Gas Multiple

Report Comparing Steam/Vent Gas Ratio to Efficiency	Compound Tested	API 521 Recommended Ratio for the Compounds Tested	Highest Steam/Gas Ratio while Maintaining High Efficiency	Multiple of Recommended Ratio
		Column A	Column B	Column B/A
Mellqvist	Ethylene	0.45	2	4.4
1983 CMA/EPA	Propylene	0.55	3.5	6.4
Castineira	Methane	0.1	0.47	4.7
Pohl	Propane	0.275	1	3.7
Marathon Tests	Various	0.3 - 0.56	1 - 2	2 to 4



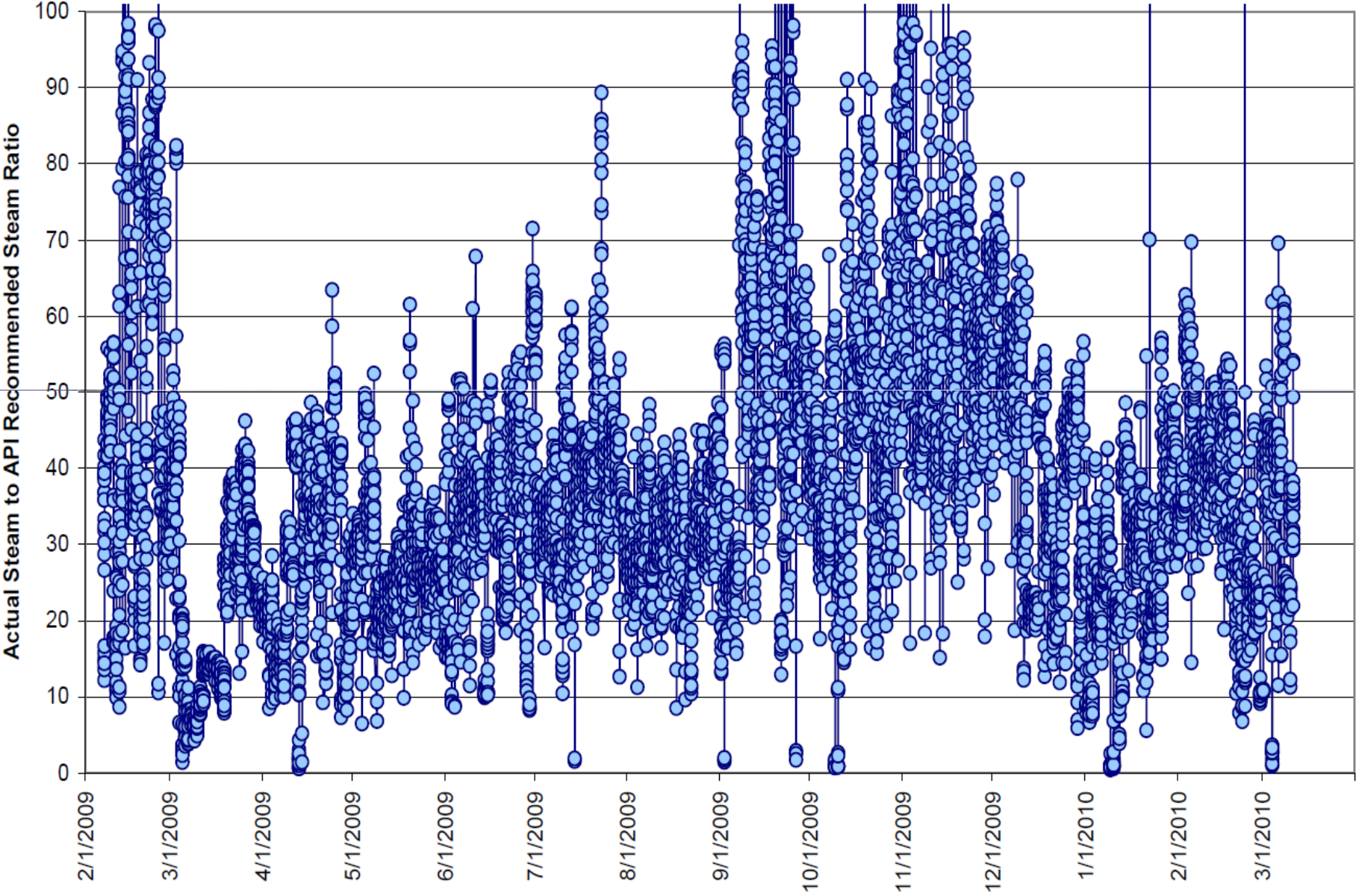
# Steam and Combustion Efficiency from EPA/CMA Study

(API-521 recommended steam-to-gas ratio 0.5 – 0.6)

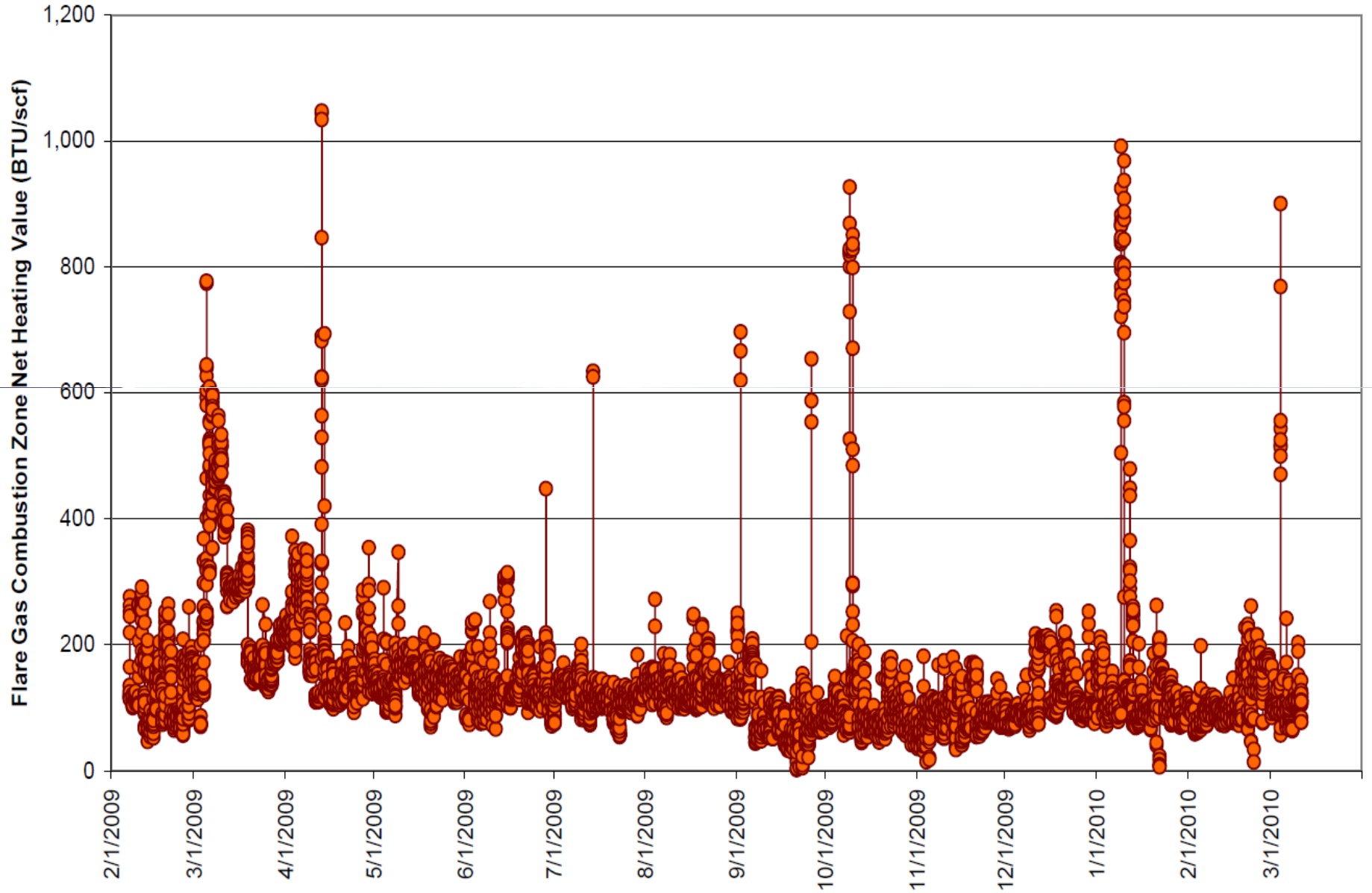


# Flare Actual Steam to API Recommended Steam Ratio

## Company X



# Flare Gas Combustion Zone Net Heating Value Company X





# INEOS / Lanxess Facility





# INEOS / Lanxess Settlement

- The Meredith Hitchens Elementary School is located across the street from the Lanxess/INEOS facility.
  - Monitoring: Ohio initiated ambient air monitoring on the school's roof after malfunctions in late 2004 and early 2005 caused releases of BD and AN.
  - School's Temporary Closure: Due in part to concerns about children's exposure to the facility's emissions, the elementary school closed and its 370 students were moved.
  - Impact of Settlement: This settlement results in the reduction of air toxics at a facility whose emissions were previously identified as a potential risk to school children.



# INEOS / Lanxess Settlement

## Injunctive Relief

- Flare Injunctive Relief
  - meet a steam-to-total gas ratio of 3.6:1 in the combustion zone
  - meet 200 BTU after steam addition after the flame
  - meet 385 BTU/scf in the waste gas prior to steam addition before the flame
  - monitor the flare's operating parameters
  - perform Passive Fourier Transform Infra Red spectroscopy (PFTIR)





# INEOS / Lanxess Settlement

## Injunctive Relief (cont'd)

- Enhanced Leak Detection and Repair Relief
- Install a biofilter system at the wastewater treatment facility to capture and control AN emissions.
- Install a scrubber and route the emissions from the scrubber to the facility's existing thermal oxidizer, if a process line currently shut down reopens.
- Implement CERCLA/EPCRA relief to prevent future reporting violations



# INEOS / Lanxess Settlement

- Reductions
  - 360 TPY of BD reductions from the flare controls
  - ~1.1 TPY of AN reductions from the Biofilter Project
  - ~ 59.6 TPY of HAP reductions from the enhanced LDAR relief
- Penalty: \$3.1 million dollars
- State Partner: Ohio

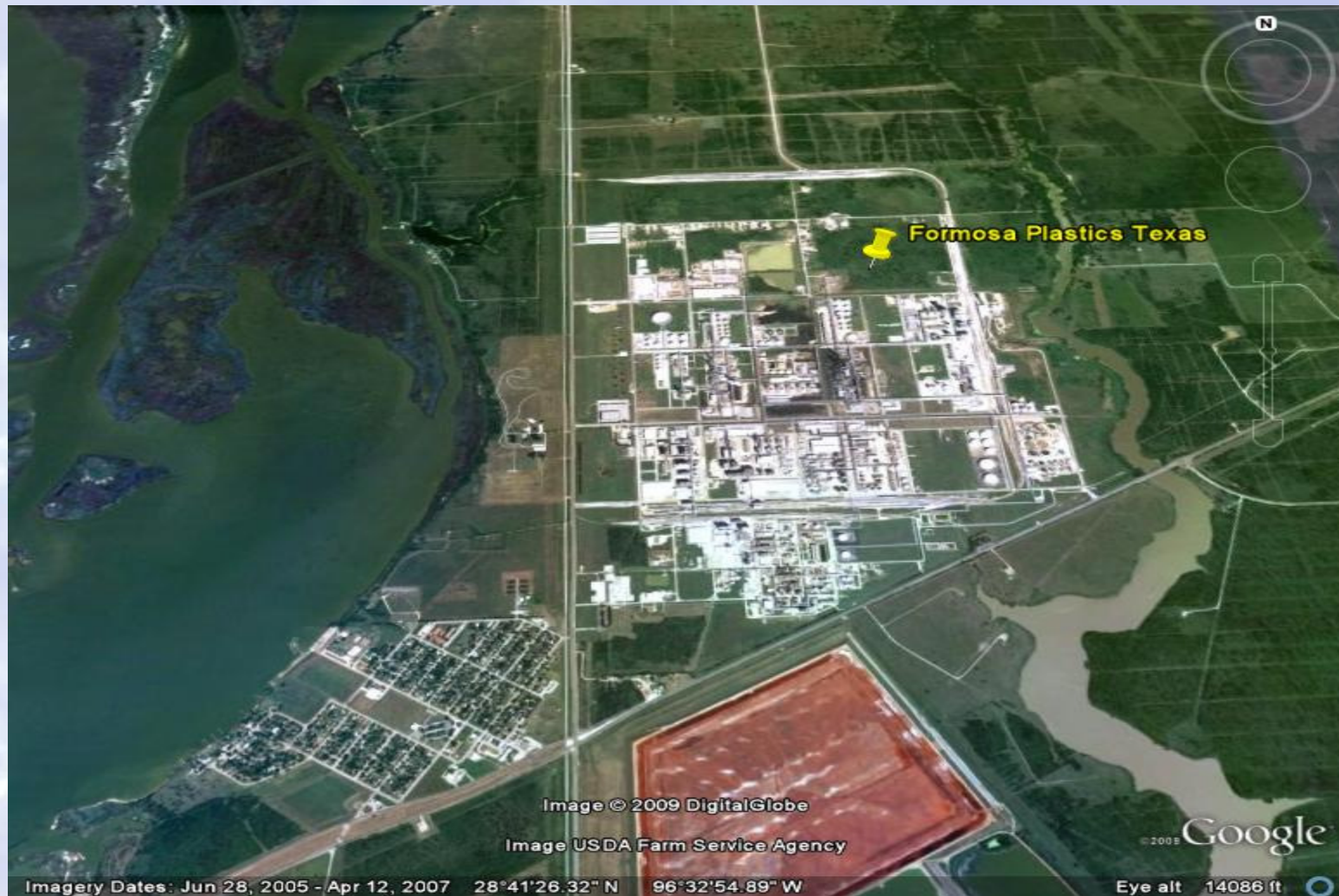
# Leak Detection and Repair (LDAR)

- Leaking equipment - largest source of hazardous air pollutant emissions in the petroleum refinery and chemical manufacturing sectors
- Noncompliance and the potential for significant emission reductions
  - EPA's LDAR compliance evaluations reveal higher leak rates than industry's
  - EPA - 5% leak rate
  - Industry - 1% leak rate





# Formosa Plastics (PVC) Point Comfort, Texas





# Formosa Plastics (PVC) E. Baton Rouge





# Formosa Consent Decree (Lodged September 30, 2009)

- Comprehensive Enhanced LDAR Program corrective actions, including
  - Employee training
  - 3<sup>rd</sup> party LDAR audits
  - Lower leak definition for initiating repair
  - Reduced “delay of repair” listing
  - Replace leaking equipment with newer technology
  - Include 160,000 connectors in LDAR program
- Annual emissions reduced: 6,570,000 lbs of VOCs, including HAPs such as vinyl chloride
- Civil Penalty \$2,800,000

# New Source Review Initiative

- National NSR Areas
  - Coal-fired Utilities
  - Acid Manufacturing
  - Glass
  - Cement

# Coal-Fired Utilities







## Coal-Fired Utilities: Current Litigation

- Alabama Power Company
- Cinergy (now Duke Energy Indiana and Duke Energy Ohio)
- Duke Energy Corporation
- Louisiana Generating – Big Cajun 2 (filed February 2009)
- Midwest Generation (filed August 2009)



# Midwest Generation

- Illinois fleet (6 plants, 13 units)
- Motion to Dismiss granted March 9, 2010, as to:
  - liability for alleged modifications of prior owner
  - penalty claims for the one alleged modification performed by Midwest Generation



# Duke Wabash River

- On appeal to the Seventh Circuit
- Issues appealed:
  - Statute of Limitations
  - Expert witness testimony
  - Jury instructions/emissions test



# Coal-Fired Utilities: Results

- 18 Settlements

- > 2 million tpy of reductions of SO<sub>2</sub> and NO<sub>x</sub> (upon full implementation)
- > \$11.9 billion – injunctive relief
- > \$65 million – civil penalties
- > \$239 million – mitigation projects

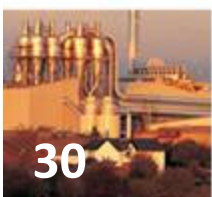
# Westar – Jeffrey Energy Station

- Complaint filed February 2009
- Settled January 2010
- Injunctive Relief – \$500 million
- 78,600 tons of SO<sub>2</sub> and NO<sub>x</sub> emission reductions
- \$3 million civil penalty
- \$6 million for mitigation



# Duke Gallagher Settlement

- Complaint filed November 1999
- Settled December 2009
- Injunctive Relief -- \$85 million
- 35,000 tons of SO<sub>2</sub> emission reductions
- \$1.75 million civil penalty
- \$6.25 million for mitigation





## Coal-Fired Utilities: Other Litigation

- Otter Tail Citizen Suit (Big Stone)
  - On appeal before Eighth Circuit
  - Statute of Limitations and Collateral Attack
  - United States filed amicus brief and participated at oral argument
- TVA Citizen Suit (Bull Run)
  - Routine Maintenance Decision (March 2010)

# Acid Manufacturing Sector





# Acid Sector Enforcement

## ■ Notices of Violations- 13

- Agrifos, Pasadena, TX
- Big River Zinc, Sauget, IL (NSPS)
- Chemtrade, Cairo, OH
- DuPont, James River, VA
- DuPont, North Bend, OH
- Dyno Nobel, Donora, PA
- Lucite, Belle, WV
- Marsulex, Toledo, OH
- PCS Nitrogen, Geismar, LA
- PVS Chemical, Chicago, IL (NSPS)
- Royster-Clark, North Bend, OH
- J.R. Simplot, Pocatello, ID
- PCS Nitrogen, Geismar, LA



# Acid Sector - Results to Date

## Six Settlements Covering 25 Acid Plants

- Agrium/Royster Clark
  - single facility nitric acid settlement (Feb '07)
- Rhodia Inc.
  - eight plant global sulfuric acid settlement (Apr '07)
- DuPont
  - four plant global sulfuric acid settlement (July '07)
- Chemtrade/Marsulex
  - eight plant global sulfuric acid settlement (Jan '09)
- DuPont/Lucite
  - single facility sulfuric acid settlement (April '09)
- Mosaic
  - single facility sulfuric acid settlement (Oct '09)

# Acid Sector - Results to Date (con't)

- Nationwide in 9 States
  - California, Indiana, Kentucky, Louisiana, Ohio, Oklahoma, Texas, Virginia, and Wyoming
- Emission Reduction
  - SO<sub>2</sub> > 44,340 tpy
  - NO<sub>x</sub>, acid mist, VOC, CO and PM > 610 tpy
- Injunctive Relief – “Set the Bar” on Rates
  - Sulfuric acid: 1.0-2.5 lb/ton (from 3.5 lb/ton)
  - Nitric acid: 0.6 lb/ton (down from 3.0 lb/ton)
  - \$224 million in control technologies
- \$11.775 Million Civil Penalties
- \$48,000 in Supplemental Environmental Projects



# Glass Manufacturing Sector





# Glass Sector

- Notices of Violation (8)
  - Saint Gobain Containers inc., global, (2009)
  - Durand Glass, Millville, NJ (2007)
  - Owens Brockway, Clarion, PA (2008)
  - Owens Brockway, Crenshaw, PA (2008)
  - Owens Brockway, Waco, TX (2009)
  - Owens Brockway, Muskogee, OK (2009)
  - AFG Industries, Church Hill, TN (2008)
  - Saint Gobain, Madera, CA (2003)
- Federal Complaints (2)
  - Saint Gobain, Madera, CA (2005)
  - Saint Gobain, Global (2010)



# Glass Sector - Results to Date

## Case Results

- Saint Gobain; single facility, Madera, CA (Apr 2005)
- Saint Gobain Containers, Inc., global, 15 plants (January 2010)

## Emissions Reductions

- NO<sub>x</sub> reduced by 4,388 tpy
- SO<sub>2</sub> reduced by 1,533 tpy
- PM reduced by 397 tpy



# Saint-Gobain Containers, Inc.

- Global Settlement Covers
  - 15 glass-manufacturing facilities in 13 states
  - 31 total furnaces
- The first SCR at a glass furnace in the U.S.
- All furnaces will install controls for NO<sub>x</sub>, SO<sub>2</sub> and PM emissions
  - NO<sub>x</sub> controls are oxyfuel, SCRs and oxygen-enriched air staging
  - SO<sub>2</sub> controls are scrubbers (dry and wet and also cloud chamber scrubbers)
  - PM controls are electrostatic precipitators and cloud chamber scrubbers
- Injunctive Relief -- \$112 million



## Saint-Gobain Containers, Contd.

All furnaces will accept enforceable emissions limits:

- **NO<sub>x</sub>**: 1.3 pounds per ton of glass produced for furnaces getting top-tier controls, and 3.8 pounds per ton for units getting second-tier controls
- **SO<sub>2</sub>**: approximately 0.8 pounds per ton for top-tier controls; second-tier units will be controlled to approximately 2.25 pounds per ton.
- **PM**: the CD includes limits for both filterable particulates and total particulates





## Saint-Gobain Containers, Contd.

- The settlement will result in the following emissions reductions, once all injunctive relief is fully implemented:
  - NO<sub>x</sub>: 4,162 tons per year (tpy)
  - SO<sub>2</sub>: 1,386 tpy
  - Particulate Matter: 364 tpy
- Saint-Gobain is paying a \$2.25 million civil penalty, with \$1.15 million to the United States and \$1.1 million to the 10 states and two local regulatory agencies that are co-plaintiffs in the case



## Saint-Gobain Containers, Contd.

- Participating States
  - Illinois, Indiana, Louisiana, Commonwealth of Massachusetts, Missouri, North Carolina, Oklahoma, Commonwealth of Pennsylvania, Washington, and Wisconsin, as well as the Puget Sound Clean Air Agency and the San Joaquin Valley Unified Air Pollution Control District



## Saint-Gobain Containers, Contd.

- Saint-Gobain will perform two SEPs as part of the settlement, one federal and one state
  - The federal SEP will require Saint-Gobain to surrender permanently, and request that New Jersey retire, all remaining  $\text{NO}_x$ ,  $\text{SO}_2$  and PM credits at the closed SG glass plant in Millville, New Jersey
  - The state SEP will require Saint-Gobain to pay \$250,000 into a fund established by the Oklahoma Department of Environmental Quality for the purpose of reducing  $\text{NO}_x$  emissions in the Tulsa air shed, which is adjacent to the company's Sapulpa, Oklahoma facility

# Cement Manufacturing Sector





# Cement Sector

## ■ Notices of Violation (12)

- California Portland Cement, Rillito, AZ
- Capitol Cement, San Antonio, TX
- Cemex, Victorville, CA\*
- Cemex, Lyons, CO
- Cemex, Fairborn, OH
- Cemex, Knoxville, TN
- Cemex, Ponce, PR
- Dragon Products, Thomaston ME
- Essroc, Bessemer, PA
- Holcim, Hagerstown, MD
- St. Mary's Cement, Dixon, IL\*
- California Portland Cement, Mojave, CA

## ■ Federal Complaints (2)

- Cemex, Victorville, CA (2007)\*
- Cemex, Lyons, CO (2009)

\* Resolved via consent decree



# Cement Sector - Results to Date

- Three Settlements for 15 Cement Plants
  - St Mary's Cement (Sept '08)
  - CEMEX Victorville California (Jan '09)
  - Lafarge Global (Jan '10)
- Fourteen States
  - CA, AL, MI, GA, IA, IL, KS, SC, OH, NY, WA, MO, OK, PA
- Emissions Reduction
  - NO<sub>x</sub> - 14,490 tons/yr
  - SO<sub>2</sub> - 26,000 tons/yr
- Civil Penalties - \$7.875 million



# Lafarge

## Lafarge Injunctive Relief

- install and implement control technologies at an expected cost of up to \$170 million to reduce emissions of NO<sub>x</sub> by more than 9,000 tons each year and SO<sub>2</sub> by more than 26,000 tons per year at their cement plants.
- In addition, as part of the settlement, Lafarge has agreed to pay a \$5 million civil penalty to resolve alleged violations of the Clean Air Act's new source review regulations.
- Of the \$5 million civil penalty, Lafarge will pay \$3.4 million to the United States and \$1.7 million to the 13 participating states and agencies.



# Lafarge

## Lafarge Injunctive Relief (con't)

- Install and operate a selective catalytic reduction (SCR) system at Joppa Kiln 1;
- Install and operate selective non-catalytic reduction (SNCR) systems to control NO<sub>x</sub> on 17 of their 23 kilns;
- Install and operate wet gas scrubbers (WGS) to control SO<sub>2</sub> at 4 of their 23 kilns;
- Install and operate dry absorbent addition (DAA) systems to control SO<sub>2</sub> at 13 of the 23 kilns; and
- Operate continuous emission monitors (CEMs) on all U.S. operating kilns.





# Lafarge

## Participating States and Agencies

- Alabama, Illinois, Iowa, Kansas, Michigan, Missouri, New York, Ohio, Pennsylvania, South Carolina, Washington, Oklahoma and the Puget Sound Clean Air Agency



# Other PSD/NSR Activity

- Polystyrene Foam
- Landfills
- Industrial Boilers
- Iron and Steel
- Natural Gas Transmission
- Elevated Flares
- Aluminum
- Municipal Waste Combustors
- Carbon Black Production
- PVC Manufacturers
- Oil and Gas producers
- Ethanol producers
- Wood Products
- Pulp and Paper



# U.S. v. Pep Boys and Baja

- Largest vehicle and engine importation case in CAA history
- Defendants imported almost 250,000 Chinese-manufactured non-compliant vehicles and engines
- Over 45 vehicle and generator models imported and sold by Pep Boys and Baja were not certified to meet federal emission standards
- \$5 Million penalty paid by Pep Boys
- Mitigate excess emissions: 620 tons of HC + NO<sub>x</sub> and 6,520 tons of CO
- Remediate, export or destroy over 15,000 vehicles and engines
- Implement rigorous compliance plans
- Offer extended emission system warranties.
- Cost of Injunctive Relief: Over \$5 Million



# High Priority Violations Policy

# The High Priority Violations (HPV) Policy

- The Policy Purpose
  - To provide a tool for prioritizing which violations receive the highest scrutiny and oversight
- The Goals of 1998 Revision
  - Encourage a greater degree of team-building and cooperative resolution of HPVs by all responsible agencies
  - To encourage agencies to give priority attention to those violations that they believe are most environmentally important
  - To permit an increased degree of agency flexibility in identifying and resolving all HPVs

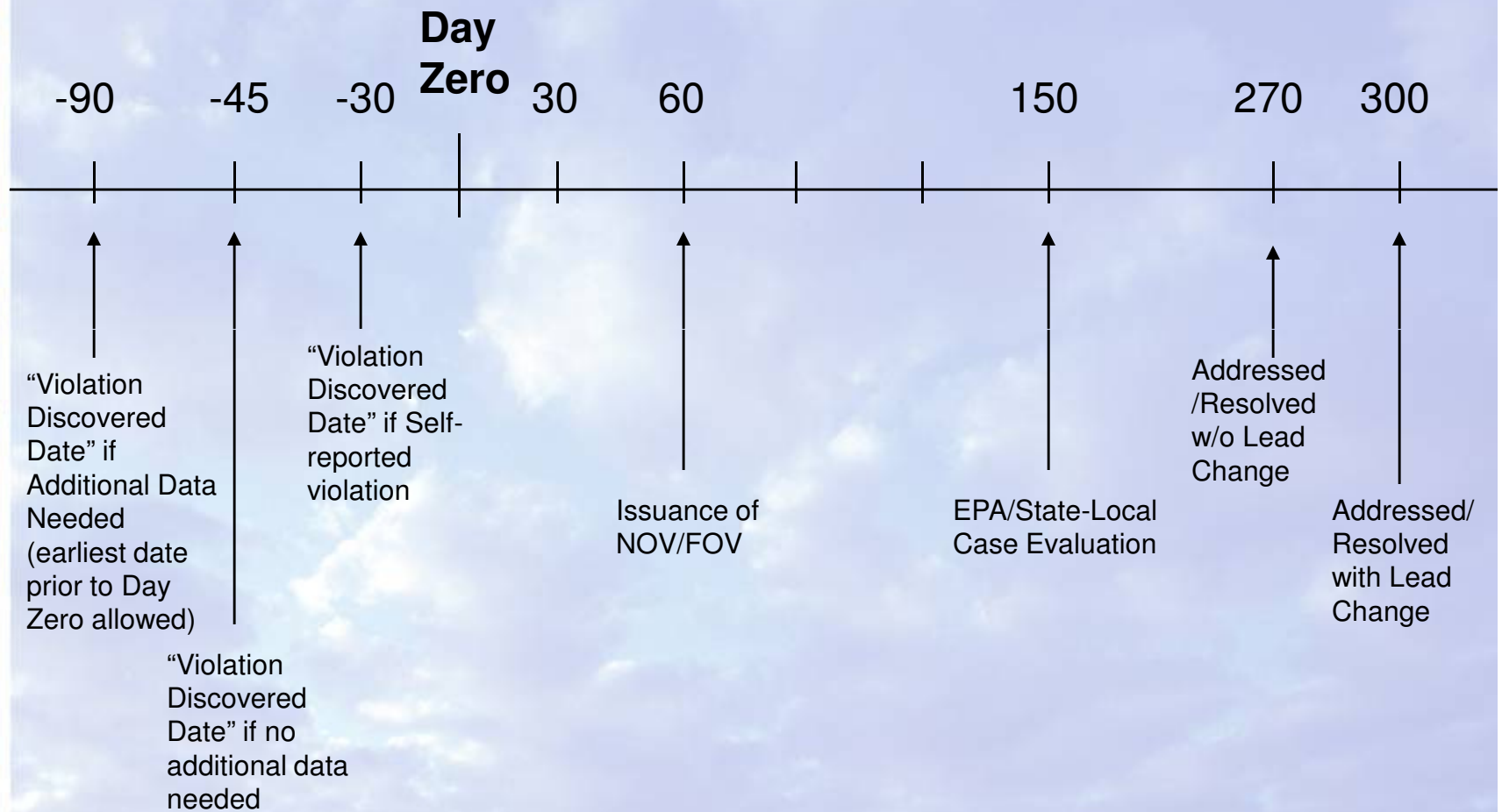


# Scope of the HPV Policy

- The Policy applies to EPA as well as State and Local Agencies
- The Policy Generally Covers
  - Definition/Identification of HPVs
  - Timely and Appropriate Enforcement Response



# HPV Timely and Appropriate Enforcement Timeline





## The Office of the Inspector General's (OIG) Report on the HPV Policy

On October 14, 2009, OIG issued a report finding:

1. HPVs were not being addressed in a timely manner because regions and states did not follow the HPV policy; and
2. EPA Headquarters did not oversee regional and state HPV performance.





# OIG's Recommendations

- To improve oversight over HPVs, OIG recommended that EPA:
  1. Direct regions to comply with the HPV policy;
  2. Make needed revisions to the policy to ensure the timelines are met; and
  3. Implement proper management controls over HPVs.
- OECA issued its response to the OIG Report on January 19, 2010; some minor revisions are being made to this response and it will be re-issued in the near future.

# OECA's Response to the OIG's Recommendations

- OECA issued a memo on March 1, 2010 requesting the regions to implement the HPV Policy and reiterating the roles for EPA Headquarters, EPA Regions and State/Local agencies.
- OECA has begun quarterly staff calls with the regions to monitor the regions' compliance with the HPV policy beginning.
- OECA will also hold semi-annual management calls with each region beginning in July 2010.



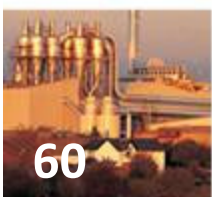


# HPV Reporting Requirements

- In December 2009, OECA began and it will continue to do annual data verification of AFS data.
- Annually, OECA will issue the HPV Identification Report.
- OECA will continue to follow the Watch List SOP and will modify the semi-annual and annual reports using updated metrics, currently available tools and other evaluation mechanisms.

# EPA's Reevaluation of the HPV Policy

- AED formed an inter-agency workgroup to evaluate the HPV policy, which includes regional members, OC and SLPD.
- OECA plans to complete its evaluation of the HPV policy by March 2011.
- OECA agreed to revise the HPV policy according to the evaluation results by September 2012.
- State participation is key; OECA looks forward to NACAA input in its evaluation and revision efforts.





# Permitting and Enforcement Training Schedule

- Atlanta, GA: September 2008
- Dallas, TX: February 2009
- Philadelphia, PA: June 2009
- Seattle, WA: July 2009
- Kansas City, KS: October 2009
- Chicago, IL: November 2009
- Denver, CO: March 2010
- Region 1 – Summer/Fall 2010?
- Region 9 – TBD
- Region 2 – TBD
- Beyond? --

# Questions

