

# Preparation of the 2005 Point Sources National Emissions Inventory



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# Acknowledgements

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# Overview of Presentation

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- **Overview of the NEI**
- **Data Sources**
- **Blend/Merge/QA Approach**
- **Preliminary Results**

## Background on the NEI

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- **Comprehensive inventory of stationary and mobile source emissions**

- **Pollutant coverage:**

- **Criteria air pollutants (CAPs)**

- **CO**
    - **NH<sub>3</sub>**
    - **NO<sub>x</sub>**
    - **PM**
    - **SO<sub>2</sub>**
    - **VOC**



- **Hazardous air pollutants (HAPs): 188 compound groups**

## Background on the NEI

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- **Geographic coverage:**
  - **Entire United States (including D.C.)**
  - **Puerto Rico**
  - **Virgin Islands**
  - **Federal Waters in the Gulf Of Mexico**
  
- **Previous NEI efforts:**
  - **1990 (\$1.16\*)**
  - **1996 (\$1.23\*)**
  - **1999 (\$1.17\*)**
  - **2002 (\$1.38\*)**

**\*= Nationwide avg. price of gas  
(\$2.31 in 2005)**

# Data Sources

- **Risk and Technology Review (RTR):**
  - **Emissions from 50 MACT source categories**



0201	0502	1001	1318	1339
0202	0503	1201	1320	1409
0202-1	0504	1301	1321	1410
0205	0603	1302	1322	1411
0304	0701	1307	1325	1610
0310	0714	1311	1326	1615
0409	0715-1	1312	1328	1619
0410	0715-2	1313	1331	1625
0412	0715-3	1314	1332	1626-1
0501	0716	1315	1338	1626-2

# Data Sources

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- **Emission Inventory and Analysis Group (EIAG):**

Electricity Generating Units (oil, natural gas, coal, and wood)
Combustion Turbines (oil and natural gas)
Internal Combustion Engines (oil and natural gas)
Boilers (oil, natural gas, coal, and wood)
Airports



# Data Sources

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- **EPA's Sectors, Policy, and Program Division (SPPD):**

Large Municipal Waste Combustors
Small Municipal Waste Combustors
Hazardous Waste Combustors

# Data Sources

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- **Tribal Air Agencies**

Navajo Nation, Arizona, New Mexico & Utah
Sac & Fox Nation of Missouri in Kansas and Nebraska
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, Montana
Winnebago Tribe of Nebraska

# Data Sources

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- **Local Air Agencies**

AL: Jefferson County	NC: Mecklenburg County
AZ: Maricopa County	OR: Lane County
KY: Jefferson County	PA: Allegheny County
NE: Lincoln	PA: Philadelphia County
NE: Omaha	TN: Hamilton County
NV: Clark County	TN: Shelby County
NV: Washoe County	TN: Nashville
NM: Albuquerque	WA: Olympia
NC: Buncombe County	WA: Puget Sound
NC: Forsyth County	

# Data Sources

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## • State Air Agencies

Alabama	Indiana	Montana	Rhode Island
Alaska	Iowa	Nebraska	South Carolina
Arizona	Kansas	Nevada	South Dakota
Arkansas	Kentucky	New Hampshire	Tennessee
California	Louisiana	New Jersey	Texas
Delaware	Maine	New York	Utah
District of Columbia	Maryland	North Carolina	Vermont
Florida	Massachusetts	Ohio	Virginia
Georgia	Michigan	Oklahoma	Washington
Hawaii	Minnesota	Oregon	Wyoming
Idaho	Mississippi	Pennsylvania	Wisconsin
Illinois	Missouri	Puerto Rico	

# Data Sources

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- **Missing States:**

Colorado
Connecticut
New Mexico
North Dakota
Virgin Islands
Wyoming

# Data Sources

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- **WRAP RPO Tribal Data:**

Confederated Tribes of the Colville Reservation, Washington
Puyallup Tribe of the Puyallup Reservation, Washington
Confederated Tribes and Bands of the Yakama Nation, Washington
Arapahoe Tribe of the Wind River Reservation, Wyoming
Tohono O'Odham Nation of Arizona

# Data Sources

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- **Supplemental Data:**

2005 EPA TRI
2002 EPA NOF

- **Gulf of Mexico Oil and Gas Platform Data:**

- **1,585 platforms**
- **Criteria pollutants only**



## QA Procedure

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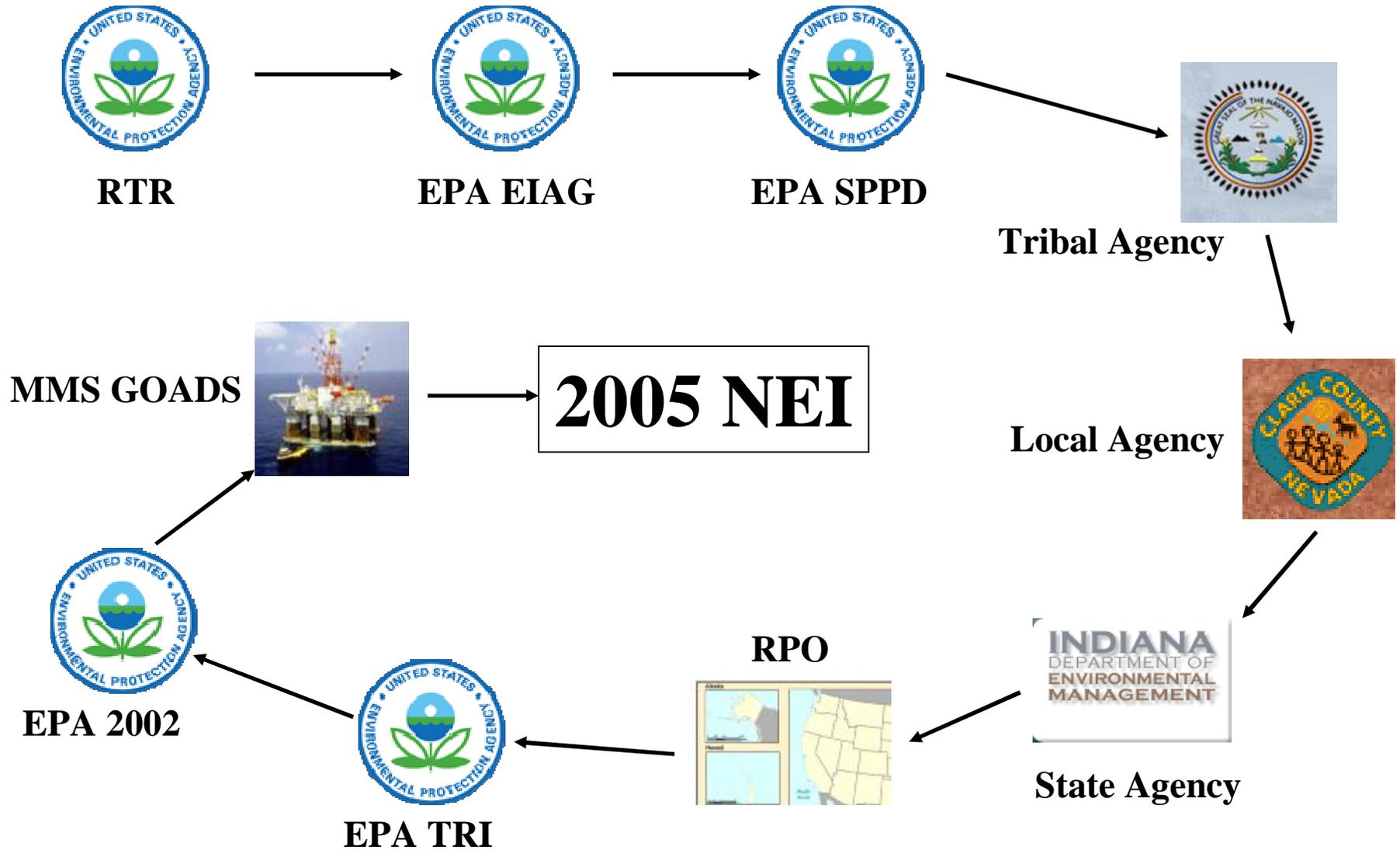
- **Each submitted file in NIF was put through the QA routine**
- **A flattened file was generated and uploaded into the Master Database (in SQL Server)**
  - **Contained all data fields from NIF**
  - **Easier to review pollutant/MACT/SCC/Facility information**
- **Blend/Merge of the data included:**
  - **Identifying common facilities/units/processes**
  - **Standardization**

## QA Procedure

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- **Each record was assigned a hierarchy code based on the data source**
- **Each record was assigned a record number consisting of:**
  - **Tribal Code**
  - **State County FIPS**
  - **NEI Site ID/State Facility ID**
  - **Pollutant Group ID/Pollutant Code**
  - **Emission Unit ID**
  - **Process ID**
  - **Emission Release Point ID**
  - **Start-Date and End-Date**

# QA Procedure – Hierarchy



## QA Procedure

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- **Records were then converted into the NOF**
  - **Additional fields than NIF**
  - **Additional QA; primary keys turned on**
- **Set up to perform:**
  - **Stack Parameter Routine**
  - **LatLon Coordinates Routine**

# QA Procedure

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- **Records were then converted into the NOF**
  - **MACT Code Assignment Routine:**
    - **Includes facility/process-level matching to sources subject to MACT and/or Area Sources Rules (e.g., Integrated Iron and Steel)**
  - **Assignments through the RTR process**
  - **MACT code Default Routine**

# QA Procedure

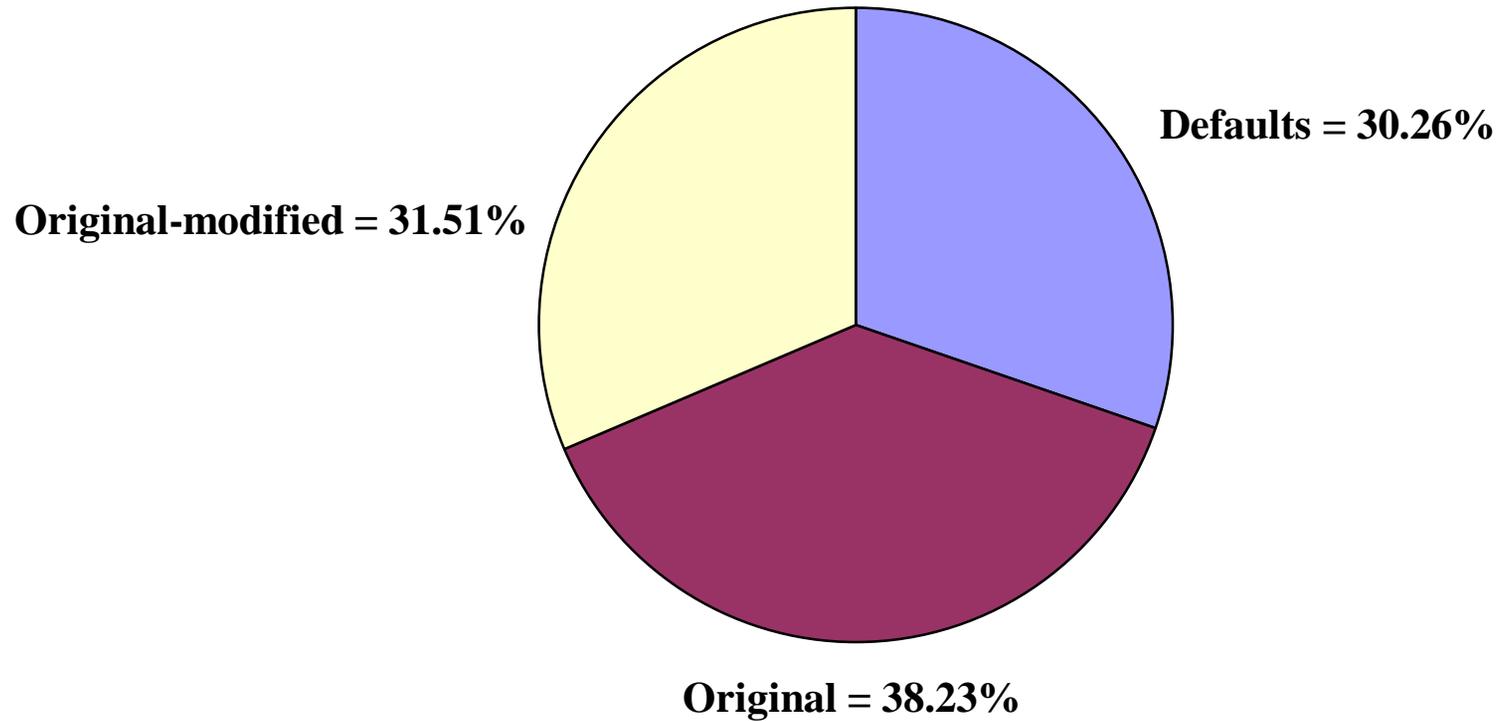
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- **Additional corrections were made to the NOF:**
  - **Emission changes due to lead NAAQS**
  - **Control device changes due to CoST work**
  - **Miscellaneous state/local agency comments**
  - **Closed facilities**
  - **Populating null SCCs**

# QA Procedure

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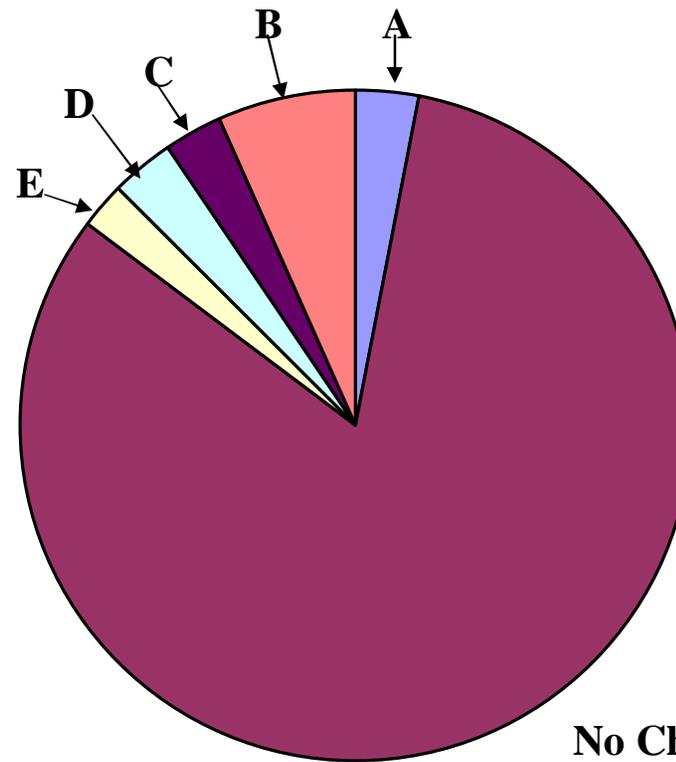
## Stack Parameter QA



# QA Procedure

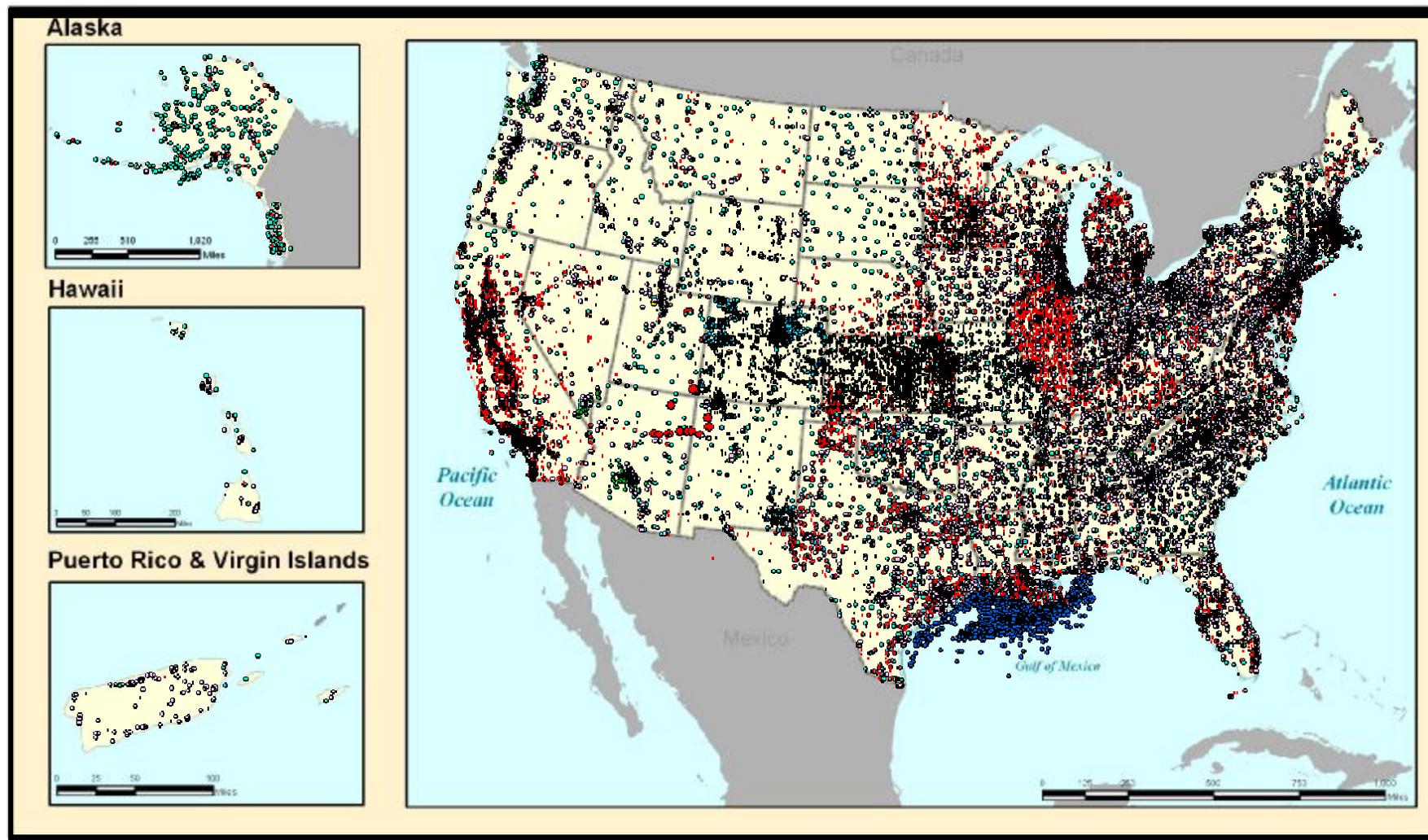
## Latitude/Longitude Coordinates QA

A	RTR Fixes
B	County-Centroid
C	Site Average
D	Zipcode-centroid
E	Address match



**No Change = 82.15%**

# Blending of Data Sources



# Limitations

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- **No PM Augmentation**
- **No Boiler Augmentation**
- **Missing States/Areas**
- **Unidentified closed facilities**
- **Use of defaults**

## Preliminary Results (do not cite or quote)

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- **Summary Statistics:**

<b>Parameter</b>	<b>2005 NEI</b>	<b>2002 NEI</b>
# Annual EM records	3.4 million	3.5 million
# Unique Facilities	98,255	85,144
# Tribes	23	15
# U.S. Counties	3,111	3,027
# GOM areas	1,079	0

# Questions?

## Quality:

*“Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction, and skillful creation; it represents the wise choice of many alternatives.” – William A. Foster*