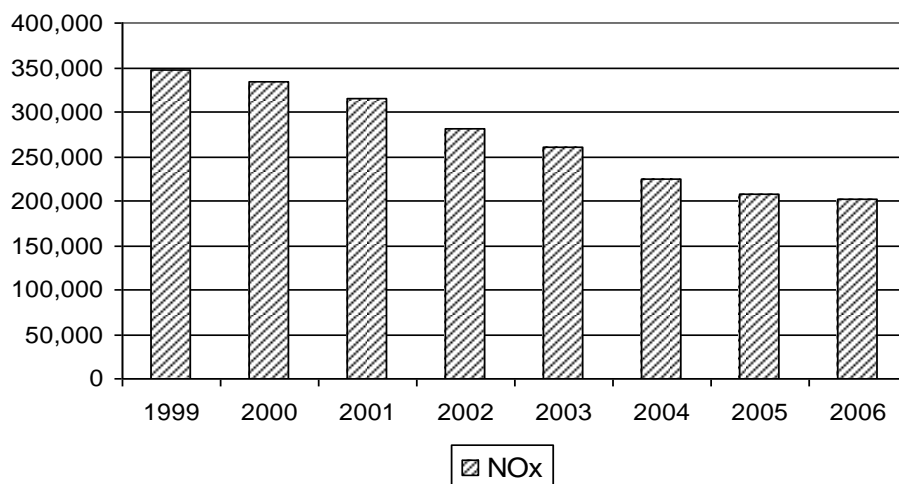


APPENDIX D

NO_x and SO₂ Emissions from Electric Generating Units

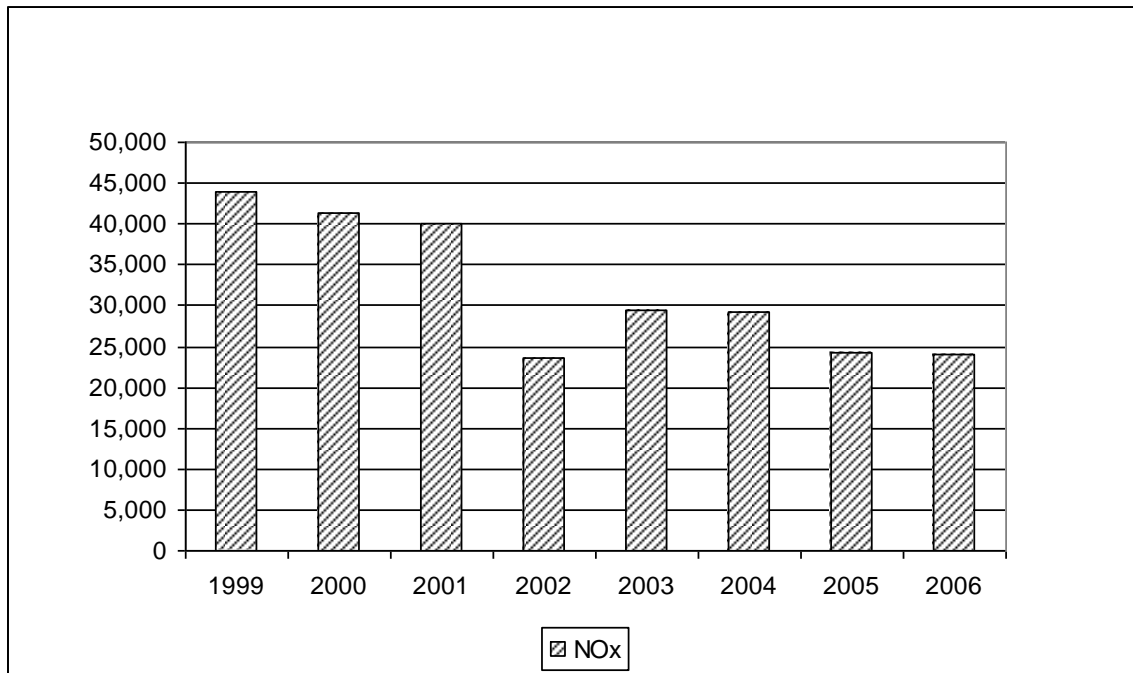
STATEWIDE EGU NO_x TRENDS

Year	NO _x Emissions, tons / annual
1999	347,217
2000	334,522
2001	315,420
2002	281,146
2003	260,980
2004	224,311
2005	207,982
2006	202,728
Budget 2009-2014	108,935
Budget 2015 and later	90,779



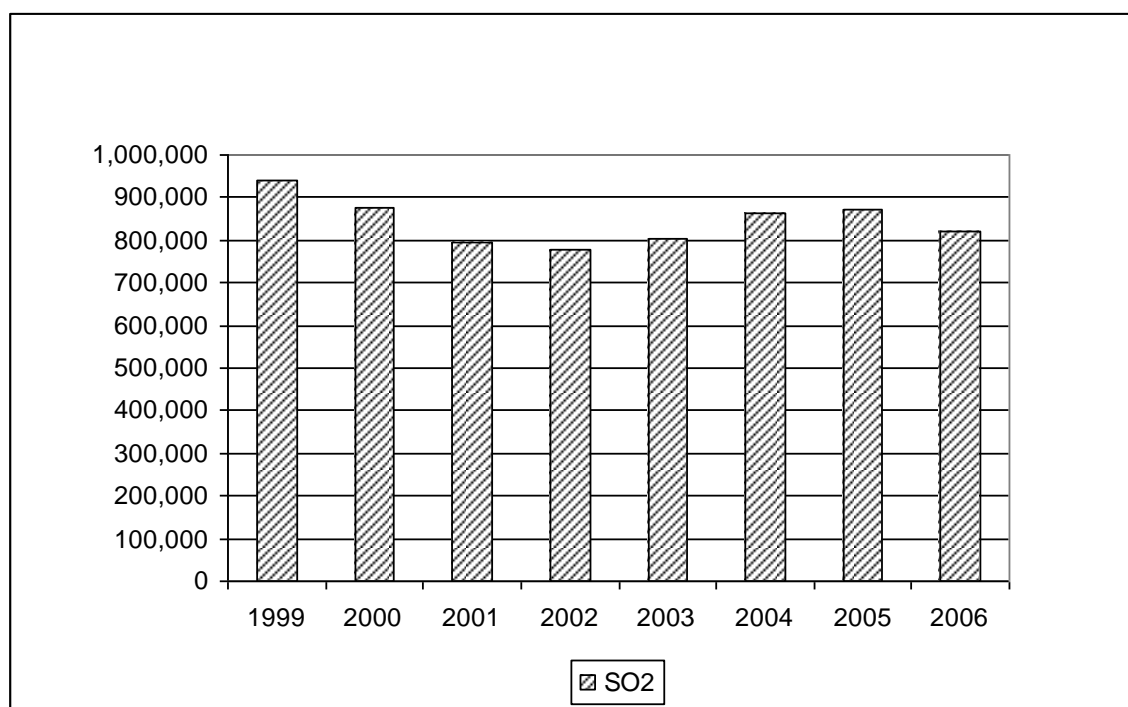
EGU NO_x TRENDS – LAKE AND PORTER COUNTIES

Year	NO _x Emissions, tons / annual
1999	43,953
2000	41,393
2001	40,132
2002	23,645
2003	29,527
2004	29,282
2005	24,297
2006	23,921



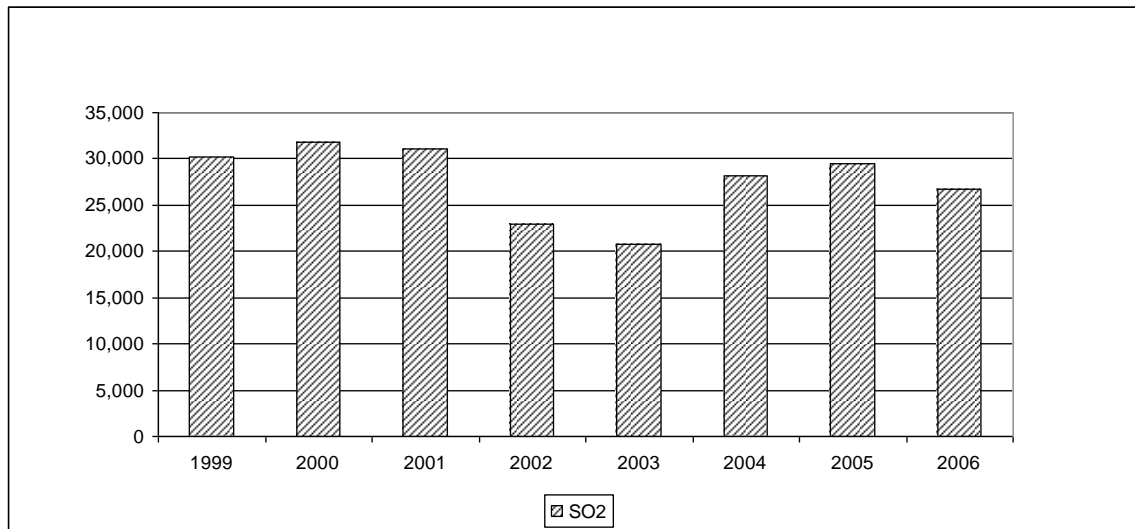
STATEWIDE EGU SO₂ TRENDS

Year	SO ₂ Emissions, tons / annual
1999	941,852.4
2000	874,617.2
2001	795,505.6
2002	778,868.0
2003	804,828.6
2004	862,876.4
2005	870,811.8
2006	820,993.4
Budget 2010-2014	254,599
Budget 2015 and later	178,219



EGU SO₂ TRENDS – LAKE AND PORTER COUNTIES

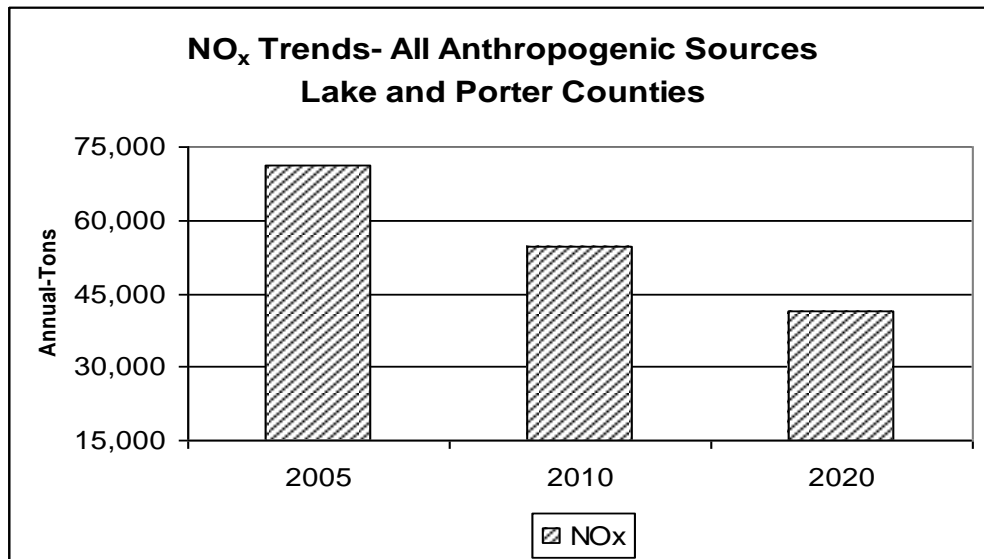
Year	SO ₂ Emissions, tons / annual
1999	30,240
2000	31,801
2001	31,013
2002	22,968
2003	20,778
2004	28,189
2005	29,418
2006	26,652

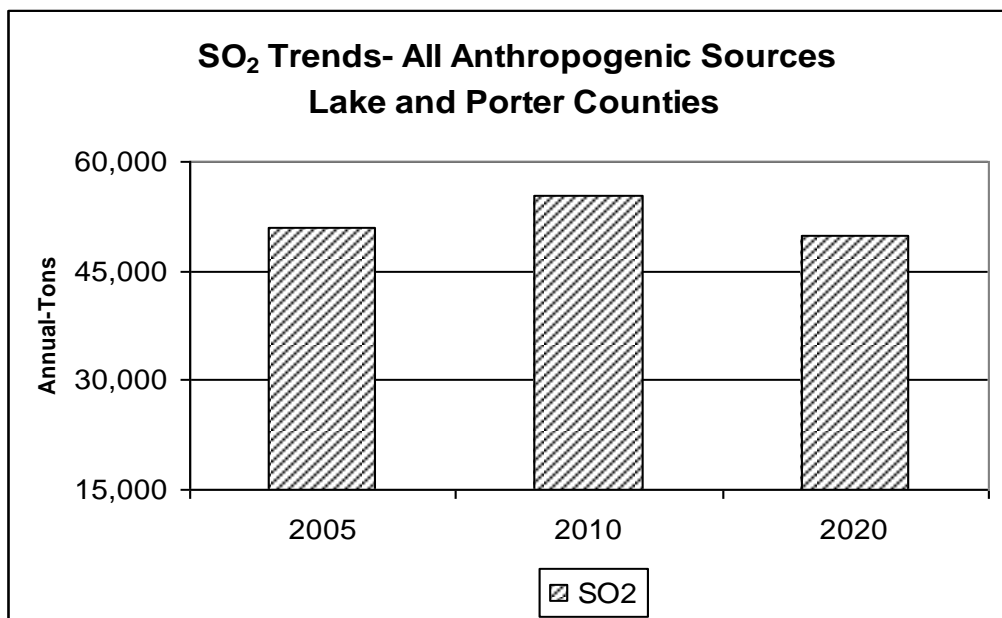
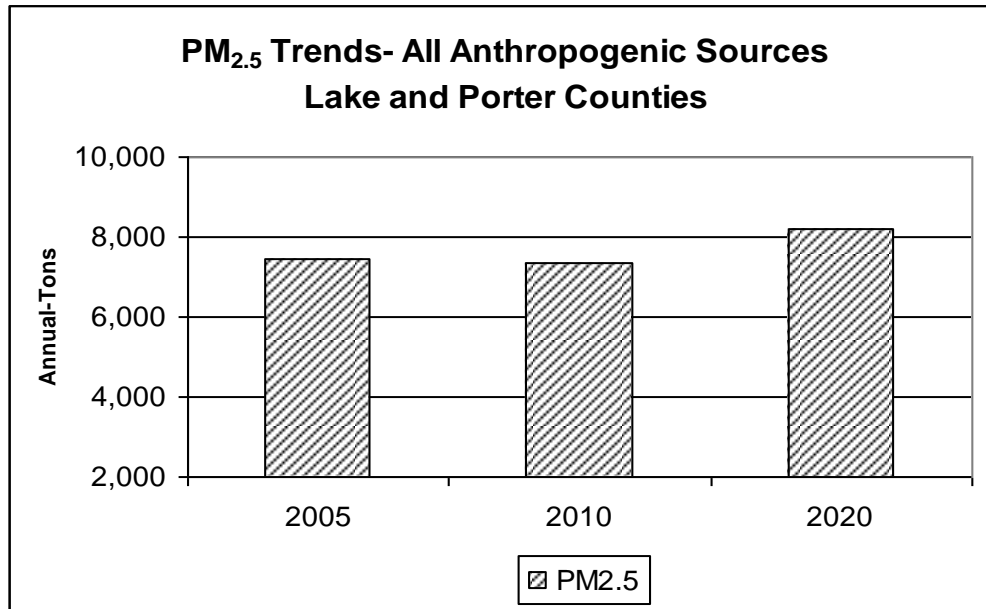


APPENDIX E

2010 and 2020 Projected Emissions Inventories


Sector	NOx 2005	NOx 2010	NOx 2020
Area	2,351.02	2,398.32	2,463.23
Non-road	11,347.44	10,376.16	7,778.80
Mobile	14,095.55	8,459.90	3,002.86
Point	43,488.11	33,488.95	28,118.31
Total	71,282.12	54,723.32	41,363.20
Sector	Direct PM_{2.5} 2005	Direct PM_{2.5} 2010	Direct PM_{2.5} 2020
Area	391.83	404.93	426.86
Non-road	513.31	431.60	267.41
Mobile	229.39	159.16	114.31
Point	6,299.95	6,238.97	7,326.59
Total	7,434.48	7,234.66	8,135.17
Sector	SO₂ 2005	SO₂ 2010	SO₂ 2020
Area	797.62	805.17	816.79
Non-road	1,049.90	566.02	453.62
Mobile	146.44	60.06	72.75
Point	48,999.85	54,021.98	48,456.54
Total	50,993.81	55,453.23	49,799.70





APPENDIX E-1

IDEM's Emissions Inventory Standard Operating Procedure

	<p style="text-align: center;">Area Source Inventory S-006-OAQ-R-MO-08-S-R1</p> <p style="text-align: center;">Standard Operating Procedure</p> <p style="text-align: center;">Office: Office of Air Quality Branch: Air Programs Branch Section: Technical Support and Modeling Section</p> <p style="text-align: center;">Revised: 02/27/2008 Revision Cycle: 2 years Effective date: 02/15/07</p>
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Scope of operations

This SOP is to identify source categories and develop emissions not calculated in point source inventories. This data is compiled every three years as mandated by EPA.

Scope of applicability

This SOP is for the Senior Environmental Manager and the Environmental Manager in the Emissions Group.

Authorized Signatures

I approve and authorize this Standard Operating Procedure:

Branch Chief

Scott Deloney
Typed/Printed

Signature

Date

Section Chief

Ken Ritter
Typed/Printed

Signature

Date

Section QA Contact

Michele Boner
Typed/Printed

Signature

Date

Branch QA Coordinator

Chris Pedersen
Typed/Printed

Signature

Date

Author

Michele Boner
Typed/Printed

Signature

Date

This Standard Operating Procedure is consistent with agency requirements.

Indiana Department of Environmental Management
Quality Assurance Program
Planning and Assessment

Date

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1. Overview work flow chart

The process described is not part of a larger system and does not need an Overview work flow chart.

2. Definitions

AP-42 – Compilation of Air Pollutant Emission Factors AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources (January 1995) plus Supplements A – F (Updates 2001 – 2004). AP-42 can be obtained at www.epa.gov/ttn/chief/ap42/.

Area Sources - A collection of similar emission units within a geographic area that collectively represent individual sources that are small and numerous and have not been inventoried as a specific point, mobile, or biogenic source.

Authorized - Established by official authority and usage; as with a policy, standard operating procedure (SOP), or quality assurance project plan (QAPP) that is signed and dated.

EIIP (Emission Inventory Improvement Program) -The EIIP is an EPA program established in 1993 to promote the development and use of standard procedures for collecting, calculating, storing, reporting, and sharing air emissions data.

Emission Factors - An emission factor is the estimate of the quantity of pollutant released to the atmosphere (because of some operation or activity such as combustion or industrial production) divided by the level of that activity.

Process - The term “process” used when describing area sources is used to name an operation or activity that produces emissions.

NEI - National Emission Inventory Air Pollutant Emission Trends, U.S. EPA.

Standard Industrial Classification (SIC) Code - A Standard Industrial Classification code from the series of codes devised by the United States Office of Management and Budget (OMB) to classify establishments according to the type of economic activity in which they engage.

Source Classification Code (SCC) - Source Classification Code is a process-level code that describes the equipment or operation emitting pollutants.

3. Roles

Title	# of Staff	Experience	Qualifications	Location
Senior Environmental Manager	1	N/A	MS ACCESS, Emission Inventories and familiarity with the EIIP	Air Programs Branch
Environmental Manager	1	N/A	MS ACCESS, Emission Inventories and familiarity with the EIIP	Air Programs Branch

Responsibilities:

Senior Environmental Manager

Oversees work of the Environmental Manager and ensures that all goals are met. The Senior Environmental Manager also does the final upload to the NEI.

Environmental Manager

The Environmental Manager calculates the Area Source Emissions using the EIIP or other EPA guidance as provided. The Environmental Manager is also responsible for updating the SOP for the Emissions Group.

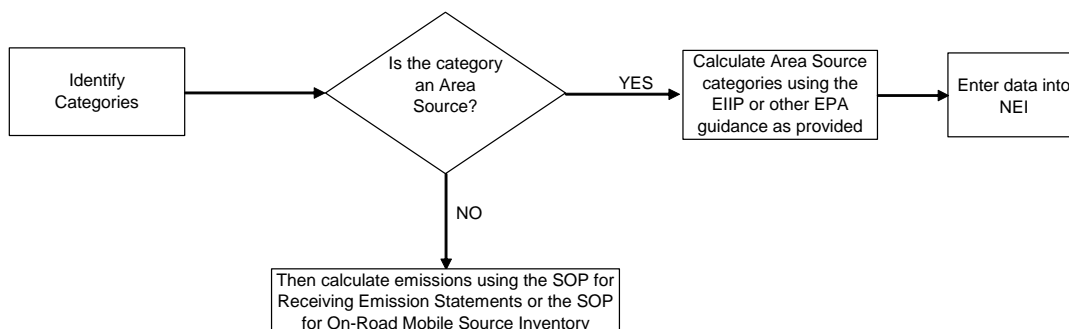
4. Description of equipment, forms, and/or software to be used

Equipment, Form, &/or Software	Who uses it?	Location
AP42	Senior Environmental Manager and Environmental Manager	EPA's website: http://www.epa.gov/ttn/chief/ap42/index.html
Emission Inventory Improvement Program (EIIP)	Senior Environmental Manager and Environmental Manager	EPA's website: http://www.epa.gov/ttn/chief/eiip/techreport/
National Emission Inventory (NEI) Air Pollutant Emission Trends, U.S. EPA	Senior Environmental Manager and Environmental Manager	EPA's website http://www.epa.gov/ttn/chief/trends/

5. Procedure

5.1 Procedural Flowchart

The procedural flowchart below titled "Area Source Inventory" is used to calculate non-point source inventories. This data is compiled every three years as mandated by EPA. The guidance followed is located in the EIIP. Emissions from area sources are calculated at the county level and consist of individual sources that are small, numerous and that have not been inventoried as specific point, mobile, or biogenic sources according to the EIIP.



5.2 Procedure

Category 1: Stationary Fuel Combustion

Sub-Category 1.1: Industrial Fuel Combustion

SCC: 2102002000, 210200400, 2102005000, 2102006000, 2102007000

Follow these steps when calculating emissions from industrial fuel combustion:

1. Obtain statewide fuel consumption for “Other Industrial” for the following fuels: coal, distillate oil, natural gas, and liquefied petroleum gas (LPG). Use the Energy Information Administration’s website at <http://www.eia.doe.gov/> to find fuel consumption.

Note: As of the date of this SOP, the following steps will lead to data for fuel consumption.

- a. Go to <http://www.eia.doe.gov/>
 - b. Click on link for the various types of fuel consumption
 - c. Click on consumption tab for state totals
2. To avoid double calculating the various fuel combustions, subtract reported source totals from the total statewide fuel consumption by querying the total process rates for the various SCC codes using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. The remaining number is the area source fuel consumption for the state.
 3. To distribute the remaining fuel to the county level, calculate the ratio of county to state employment for the manufacturing sector by dividing the number of Manufacturing Employees for each county by the number of manufacturing employees statewide. Use the County Business Patterns website at <http://www.census.gov/> to find the number of manufacturing employees for each county.

Note: As of the date of this SOP, the following steps will lead to data for Economic Census.

- a. Go to <http://www.census.gov/>
 - b. Click on Economic Census
 - c. Under 2002 Reports by State, use the down arrow key to select Indiana
 - d. Now, select each of the counties to find the county manufacturing employees
 - e. Use the total of employees for manufacturing under the paid employees’ column
4. Multiply the ratio calculated above in step 3 by the area source fuel consumption to distribute the fuel to the county level. The remaining number is the process rate for each county. Multiply the process rate by the appropriate EPA emission factors for the various fuels for industrial manufacturing found in AP-42, Fifth Edition, Volume 1, Chapter 1, External Combustion Sources at <http://www.epa.gov/ttn/chief/ap42/ch01/>.

Sub-Category 1.2: Commercial/Institutional Fuel Combustion

SCC: 2103004000, 2103005000, 2103006000, 2103007000

Follow these steps when calculating emissions from commercial/institutional fuel combustion:

1. Obtain statewide fuel consumption for “Commercial” for the following fuels: distillate fuel oil, liquefied petroleum gas (LPG), natural gas, and residual fuel oil. Use the Energy Information Administration’s website at <http://www.eia.doe.gov/> to find fuel consumption.

Note: Use the steps in sub-category 1.1-1 to navigate through the Energy Information Administration’s website.

2. To avoid double calculating the various fuel combustions, subtract reported source totals from the total statewide fuel consumption by querying the total process rates for the various fuels using the SIC codes greater than 4999 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. These are the SIC codes that identify all the commercial/institutional area sources.
3. To distribute the remaining fuel to the county level, calculate the ratio of county to state employment for the commercial/institutional sector by dividing the number of commercial/institutional employees for each county by the number of commercial/institutional employees statewide. Use the County Business Patterns website at <http://www.census.gov/> to find the number of commercial/institutional employees for each county.

Note: Use the steps in sub-category 1.1-3 to navigate through the U.S. Census Bureau's website.

4. Multiply the ratio calculated above in step 3 by the area source fuel consumption to distribute the fuel to the county level. The remaining number is the process rate for each county. Multiply the process rate by the appropriate EPA emission factors for the various fuels for commercial/institutional found in AP-42, Fifth Edition, Volume 1, Chapter 1, External Combustion Sources at <http://www.epa.gov/ttn/chief/ap42/ch01/>.

Sub-Category 1.3: Residential Fuel Combustion

SCC: 2104002000, 2104004000, 2104006000, 2104007000

Follow these steps when calculating emissions from residential fuel combustion:

1. Obtain statewide fuel consumption for "Residential" for the following fuels: coal, distillate oil, natural gas, and liquid petroleum gas. Use the Energy Information Administration's website at <http://www.eia.doe.gov/> to find fuel consumption.

Note: Use the steps in sub-category 1.1-1 to navigate through the Energy Information Administration's website.

2. To distribute residential fuel to the county level, calculate the ratio of county fuel usage to statewide fuel usage using the breakdown of fuels by household per county divided by the breakdown of fuels by household per state using the U.S. Census Bureau's website at <http://www.census.gov/>.

Note: As of the date of this SOP, the following steps will lead to data for breakdown of fuels by household.

- a. Go to <http://www.census.gov/>
 - b. On the left hand side click on "American Fact Finder"
 - c. Using the drop down menu, click on Indiana
 - d. Scroll to "Housing Characteristics" and select "show more"
 - e. On the left hand side, select "change geography (state, county, place...)"
 - f. Using the drop down menu, select county, state, and each county name to obtain housing information
3. Multiply the ratio calculated above in step 3 by the area residential fuel use by state to distribute the fuel to the county level. The remaining number is the process rate for each county for the various fuels. Multiply the process rate by the appropriate EPA emission factors for the various fuels for residential found in AP-42, Fifth Edition, Volume 1, Chapter 1 External Combustion Sources at <http://www.epa.gov/ttn/chief/ap42/ch01/>.

Sub-Category 1.4: Residential Heating Using Wood

SCC: 2104008001, 2104008002, 2104008003, 2104008004, 2104008010, 2104008030, 2104008050

Follow these steps when calculating emissions from residential heating using wood:

1. Obtain statewide wood consumption for “Residential” using the Energy Information Administration’s website at <http://www.eia.doe.gov/>. To convert the statewide wood consumption from cords of wood consumed to tons, multiply the total cords consumed by 1.25.

Note: As of the date of this SOP, the following steps will lead to data for wood consumption.

- a. Go to <http://www.eia.doe.gov/>
 - b. Click on Households, Buildings & Industry
 - c. Under Consumption Summaries, click on “Annual”
 - d. Now, over to the right click on “State Energy”
 - e. Using the drop down menu at the bottom, select “Indiana”
 - f. Under “Consumption” click on the “Residential” document
2. Using the ratio estimates provided by EPA found in the “Documentation For The Final 2002 NONPOINT SECTOR (FEB 06 version) NATIONAL EMISSIONS INVENTORY FOR CRITERIA AND HAZARDOUS AIR POLLUTANTS” at <http://www.epa.gov/ttn/chief/net/2002inventory.html#documentaiton> the number calculated above in step 1 is broken out into three categories (fireplace without inserts, fireplaces with inserts and woodstoves).
 3. To distribute to the county level for the three categories above, calculate a ratio of county to state using the statewide total of households and the county total of households that burn wood found at the U.S. Census Bureau website <http://www.census.gov/>. The remaining number is the process rate for each county. Multiply the process rate by the appropriate EPA emission factors for each of the categories using the EIIP, Volume 3, Chapter 2, Residential Wood Combustion at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii02_apr2001.pdf.

Note: Use the steps in sub-category 1.3-2 to navigate through the Energy Information Administration’s website.

Category 2: Industrial Processes

Sub-Category 2.1: Bakeries

SCC: 2302050000

Follow these steps when calculating emissions from bakeries:

1. Calculate a per capita consumption factor using the reported weight of yeast–raised product reported under the Bread, Cake, and Frozen Bakery Products from the Economic Census Bureau at <http://www.census.gov/econ/census02/> and the U.S. population at the U.S. Census Bureau at <http://census.gov/>.

Note: As of the date of this SOP, the following steps will lead to data for yeast-raised product.

- a. Go to <http://www.census.gov>
- b. Under Business & Industry open “Economic Census”
- c. Now open “Subject Series”
- d. Under Manufacturing, open the table “Product Summary”
- e. Use the yeast – raised product under Commercial Bakeries (NAICS code 311812) and Frozen cakes, pies, and other pastries manufacturing (NAICS code 311813)

2. Multiply the per capita consumption factor calculated above in step 1 by the Indiana population found at the U.S. Census Bureau at <http://www.census.gov>.
Note: As of the date of this SOP, the following steps will lead to Indiana population data.
 - a. Go to <http://www.census.gov>
 - b. Under Population Finder, use the drop down menu to select Indiana
3. To avoid double calculating the amount consumed for the state, subtract the reported process rate for both the straight-dough and sponge-dough by querying the total process rates for the SCC 30203202 (straight-dough) and SCC 30203201 (sponge-dough) using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.
4. Multiply the remaining process rate by the straight-dough emission factor of .5 lbs VOC/1,000 pounds baked found in the EIIP, Volume 3, Area Source Method Abstracts: Baked Goods at Commercial/Retail Bakeries at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/index.html>.
5. Calculate a per capita factor by dividing the Indiana population found in step 2 by the remaining process rate. Now multiply the per capita factor by each of the county populations to calculate the VOC emissions for each county.

Note: As of the date of this SOP, the following steps will lead to county population data.

- a. Go to <http://www.census.gov>
- b. Under Population Finder, use the drop down menu to select Indiana
- c. Under "View more results", select the county table

Category 3: Solvent Utilization

Sub-Category 3.1: Architectural Coatings

SCC: 2401001000

Follow these steps when calculating emissions from architectural coatings:

1. Calculate an emission factor for architectural coating area sources first by adding all the solvent-based paints together and all the water based paints together using the U.S. Census Bureau's website <http://www.census.gov>. Use Table 1 to select all solvent-based paints and Table 2 to select all water based paints.

Table 1
National Solvent Coating Sales

Solvent Type	1,000 gallons
Exterior Solvent Type	XX
Interior Solvent Type	XX
Architectural Lacquers	XX
Architectural Coating N.S.K.	XX
Total Solvents	XX

Table 2
National Water Based Coating Sales

Water Type	1,000 gallons
Exterior Water Type	XX
Interior Water Type	XX
Total Water Type	XX

Note: As of the date of this SOP, the following steps will lead to architectural coating data.

- a. Go to <http://www.census.gov>
 - b. Under Business & Industry, select more
 - c. Now select Current Industrial Reports (CIR)
 - d. Select CIRs by Subject
 - e. Tab down to find the report "Paints and Allied Products"
2. Now multiply the total national number for solvent-based paints by the average solvent-based coating content number (3.87 lbs VOC/gallon) and the total national number for water-based paints by the average water-based coating content number (0.74 lbs VOC/gal) found in the EIIP, Volume 3, Chapter 3: Architectural Surface Coating at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/archsfc.pdf>.
 3. Add the total solvent-based coatings and the water-based paints together for a total national VOC emission factor from architectural surface coating. Then divide this number by the total national population using the U.S. Census Bureau's website <http://www.census.gov>.
 4. Multiply the number calculated above in step 3 by each of the county populations to calculate the total emissions per county.

Note: Use the steps in sub-category 2.1-5 to navigate through the Census Bureau's website.

Sub-Category 3.2: Automobile Refinishing

SCC: 2401005000

Follow these steps when calculating emissions from automobile refinishing:

1. To avoid double calculating, first query the employees from the reported sources using the SIC 7532- Body Repair and Paint Shops using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. Subtract this number from the county employment for the same SIC using the U.S. Census Bureau's website <http://www.census.gov>.

Note: As of the date of this SOP, the following steps will lead to county employment data.

- a. Go to <http://www.census.gov>
 - b. Under Business & Industry, select more
 - c. Now select the County Business Patterns report for county
 - d. Select Indiana
 - e. Select each of the counties to find the number of employees for the corresponding SIC or NAICS code
2. Multiply the emission factor 3,519 lbs VOC/employee found in the EIIP, Volume 3, Chapter 13 Auto Body Refinishing at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/archsfc.pdf> and the county employment found above in step 1 to calculate the VOC emissions for each county.

Sub-Category 3.3: Traffic Markings

SCC: 2401008000

Follow these steps when calculating for traffic markings:

1. First calculate the national emissions by finding the amount of sales for traffic marking paints from the U.S. Census Bureau's website <http://www.census.gov> and multiply 3.36 lb VOC/gallon the national average VOC content for water and solvent-based paints from the EIIP, Volume 3, Chapter 14, Traffic Markings at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii14.pdf>.

Note: As of the date of this SOP, the following steps will lead to traffic marking paints.

- a. Go to <http://www.census.gov>
 - b. Under Business & Industry, select more
 - c. Now select Current Industrial Reports (CIR)
 - d. Select CIRs by Subject
 - e. Tab down to find the report "Paints and Allied Products"
 - f. Use the quantity amount in 1000/gallons under "Traffic marking paints (all types: shelf goods and highway department)"
2. Allocate the national emissions calculated above in step 1 to the state level by dividing the amount of money spent in Indiana by the money spent nationally on highway maintenance using the category "Total Disbursements" at the Federal Highway Administration's website <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/sf2.htm>.
 3. Calculate the emission factor for Indiana by dividing the state level emissions by the total number of roadway miles in Indiana, given by contacting the Program Development Division, Highway Statistics, Indiana Department of Transportation or the Office of Air Quality, Technical Support and Modeling Section's mobile inventory preparer.
 4. Multiply the emission factor by the total number of roadway miles in each county using the information supplied from above in step 3.

Sub-Category 3.4: Industrial Surface Coating (employment based emission factor)

SCC: 2401015000, 2401020000, 2401030000, 2401040000, 2401045000, 2401055000, 2401060000, 2401065000, 2401070000, 2401075000, 2401080000

Follow these steps when calculating for industrial surface coating using the employment based emission factor:

1. Calculate an employee based emission factor for the following SIC's in the table below running a query to find the point source employment for each of the SIC's and the reported VOC emissions for each using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.

SCC	Description	SIC's
2401015000	Factory Finished Wood	2426-2429, 243-245, 2492, 2499
2401020000	Wood Furniture	25
2401030000	Paper Coating	26
2401040000	Metal Cans *	341
2401045000	Metal Coils *	3479
2401055000	Machinery and Equipment	35
2401060000	Appliances *	363
2401065000	Electronic and Other Electrical	3612, 3357
2401070000	New Motor Vehicles **	3711
2401075000	Other Transportation	37 (not 3711, 373)
2401080000	Marine Coatings	373

* Use the National default emission factor because the reporting sources are low.
** Emissions reported in point source

2. Divide the reported VOC emissions for each of the SIC's by the reported employment for each SIC. Use this number for the emission factor.
3. Subtract the number of reported employees found in step 1 from each of the SIC county totals using the U.S. Census Bureau's website <http://www.census.gov>. Use the remaining number for the process rate for each of the counties.

Note: Use the steps in sub-category 3.2-1 to navigate through the County Business Patterns.

4. Multiply the process rates above found for each of the SIC's in step 4 by the emission factors found in step 3 to allocate the emissions to each of the counties.

Sub-Category 3.5: Industrial Surface Coating (default emission factor)

SCC: 2401090000, 2401100000, 2401200000

Follow these steps when calculating emissions from industrial surface coating using the default emission factor:

1. Calculate industrial surface coating emissions using the default emission factor in the EIIP, Volume 3, Chapter 8, Industrial Surface Coating at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii08.pdf> and multiply by the county populations found at the U.S. Census Bureau's website <http://www.census.gov>.

Note: Use the steps in 2.1-5 to navigate through U.S. Census Bureau's website.

SCC's	Description	Default Emission Factor
24-01-090-000	Miscellaneous Manufacturing	0.600 lbs VOC/person
24-01-100-000	Industrial Maintenance Coatings	0.800 lbs VOC/person
24-01-200-000	Other Special Purpose Coatings	0.800 lbs VOC/person

Sub-Category 3.6: Degreasing

SCC: 2415230000, 2415245000, 2415345000, 2415360000

Follow these steps when calculating emissions from degreasing activities:

1. Use the U.S. Census Bureau to find employment numbers for each of the counties for the categories in Table 1 below at <http://www.census.gov>.

Note: Use the steps in 2.1-5 to navigate through U.S. Census Bureau's website.

Source Classification Codes and Industries Associated with Degreasing		
SCC	SIC	Description
2415230000	36	Electronic and other electronic equipment
	25	Furniture and fixtures
	33	Primary metal industries
	34	Fabricated metal products
	35	Industrial machinery and equipment
	37	Transportation equipment
	38	Instruments and related products

2415245000	39	Miscellaneous manufacturing industries
	417	Bus Terminal and Service Facilities
	423	Trucking terminal facilities
	551	New and used car dealers
	552	Used car dealers
	554	Gasoline service stations
	555	Boat dealers
	556	Recreational vehicle dealers
	753	Automotive repair shops
2415345000	25	Furniture and fixtures
	33	Primary metal industries
	34	Fabricated metal products
	35	Industrial machinery and equipment
	36	Electronic and other electronic equipment
	37	Transportation equipment
	38	Instruments and related products
	39	Miscellaneous manufacturing industries
2415345000 cont.		
2415360000	417	Bus Terminal and Service Facilities
	423	Trucking terminal facilities
	551	New and used car dealers
	552	Used car dealers
	554	Gasoline service stations
	555	Boat dealers
	556	Recreational vehicle dealers
	753	Automotive repair shops

- Run a query to find reported employment numbers for each of the categories in the table above using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.
- Subtract the reported employment from the U.S Census Bureau's numbers to find the process rates for each of the counties.
- Calculate the VOC emissions by multiplying the default emission factor in the EIIP, Volume 3, Chapter 6, Solvent Cleaning at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii06fin.pdf> and the process rate for each of the counties found in step 3.

Sub-Category 3.7: Dry Cleaners

SCC: 2420010370

Follow these steps when calculating emissions from dry cleaners:

- Calculate an emission factor by finding the number of employees state wide and county wide for SIC 7216(Laundry and Garment Services) at the U.S. Census Bureau's website <http://www.census.gov>.

Note: Use the steps in 2.1-5 to navigate through U.S. Census Bureau's website

- Take the sum of the employment from the counties, multiply by 2000, and divide by the statewide total found in step 1. Use this number for the emission factor.
- Calculate the process rate by running a query to find the number of reported employees for SIC 7216 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract this number from the county total.
- Multiply the process rate for each of the counties above by the emission factor to calculate for VOC emissions.

Sub-Category 3.8: Graphic Arts

SCC: 2425000000

Follow these steps when calculating emissions from graphic arts activities:

1. Multiply the per capita factor found in the EIIP, Volume 3, Chapter 7, Graphic Arts at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii07.pdf> by the state population from the Census Bureau <http://www.census.gov> to find the total emissions for the state.

Note: Use the steps in 2.1-2 to navigate through the U.S. Census Bureau's website.

2. Develop an emission factor by subtracting point source emissions from the total emissions and dividing by the state population found in step 1.
3. Distribute to the counties by multiplying the emission factor by the population for each county.

Note: Use the steps in 2.1-5 to navigate through the U.S. Census Bureau's website.

Sub-Category 3.9: Rubber and Plastics

SCC: 2430000000

Follow these steps when calculating emissions from rubber and plastics activities:

1. Run a query to find the total of reported emissions and number of reported employees for all SIC's beginning with 30 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.
2. Calculate the emission factor by dividing the point source emissions by the reported employees.
3. Subtract the reported employment for SIC's beginning with 30 from total employment for each of the counties.

Note: Use step 3.2-1 to navigate through the County Business Patterns.

4. Multiply the remaining number from above with the emission factor calculated in step 2.

Sub-Category 3.10: Miscellaneous Industrial Adhesives

SCC: 2440020000

Follow these steps when calculating emissions from industrial adhesives activities:

1. Using the guidance in the Air Pollutant Emission Trends at <http://www.epa.gov/ttn/chief/trends>, calculate an emission factor by finding the total National Emissions from Industrial Adhesives and divide by the National Manufacturing Employment from the U.S. Census Bureau's website <http://www.census.gov>.

Note: As of the date of this SOP, the following steps will lead to emission trends data for industrial adhesives.

- a. Go to <http://www.epa.gov/air/airtrends/aqtrnd03/>
- b. Select "Appendix A –Data Tables"
- c. Search for industrial adhesives

Note: As of the date of this SOP, the following steps will lead to National Manufacturing Employment.

- a. Go to <http://www.census.gov>

- b. Select Economic Census
 - c. Now select "Businesses with paid employees"
 - d. Use the manufacturing number under "paid employees"
2. To avoid double calculating, run a query collecting sources reporting adhesives using the ACCESS data tables at K:\OAQ_INV\Stepool\Stptl_02.mdb. Subtract the reported employment from the total amount of manufacturing employment. The remaining number is the process rate.

Sub-Category 3.11: Commercial/Consumer Solvents

SCC: 2460100000, 2460200000, 2460400000, 2460500000, 2460600000, 2460800000, 2460900000

Follow these steps when calculating emissions from commercial/consumer solvent usage:

1. Using the EIIP, Volume 3, Chapter 5, Consumer, and Commercial Solvent Use at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii05.pdf>, multiply the per capita factors for each of SCC codes by the population for each county from the U.S. Census Bureau's website <http://www.census.gov>.

Note: Use the steps in 2.1-5 to navigate through the U.S. Census Bureau's website.

Emission Factors for Commercial/Consumer Solvents

Source Classification Codes	Product Category	Per Capita Emission Factor (lb VOC/person)
2460100000	Personal Care Products	2.32
2460200000	Household Products	0.79
2460400000	Automotive Aftermarket Products	1.36
2460500000	Coatings and Related Products	0.95
2460600000	Adhesives and Sealants	0.57
2460800000	FIFRA-Regulated Products	1.78
2460900000	Miscellaneous Products	0.07

Sub-Category 3.12: Asphalt Emulsions

SCC: 2461022000

Follow these steps when calculating emissions from asphalt emulsions:

1. To calculate the process rate, find the number of barrels of asphalt used for the state found at the State Energy Data website at http://www.eia.doe.gov/emeu/states/_seds_updates.html.
2. Obtain the amount of roadway miles for the state and county from the Indiana Department of Transportation's, Division of Roadway Management Section.
3. Divide the county roadway miles by the state roadway miles and multiply by the total asphalt usage for the state found above in step 1.
4. Multiply the process rate by the default emission factor in the EIIP, Volume 3, Chapter 17, Asphalt Paving http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii17_apr2001.pdf.

Sub-Category 3.13: Pesticide Usage

SCC: 2461800000

Follow these steps when calculating emissions from pesticide usage:

1. Calculate pesticide usage by using a state specific emission factor. Develop the factor using a methodology that includes the retrieval of information of pesticides used, an emission factor for each pesticide used, a calculation about the inert ingredients in each pesticide, and an estimate of the amount of crop oil concentrate (an adjuvant used for the application of herbicides) used in the state of Indiana.
2. Find the amount of active ingredients for herbicides and insecticides applied to Indiana fields at the Indiana Agricultural Statistics Service at <http://www.usda.gov/nass/pubs/agr02/acro02.htm>.
3. Insert the numbers for both corn and soybeans to the Excel pesticide table found at K:\OAQ_INV\Inv\pesticide.
4. Calculate the emission factor by adding the emissions from crop oil concentrates obtained in the pesticide Excel table, pesticides, and solvent carriers and then divide by the total number of acres of corn and soybeans in Indiana found at the National Agricultural Statistics Services, United States Department of Agriculture <http://www.nass.usda.gov/QuickStats/>.
5. Multiply the emission factor by the county-specific acreage for both corn and soybeans found at the National Agricultural Statistics Services, United States Department of Agriculture <http://www.nass.usda.gov/QuickStats/>.

Category 4: Petroleum Marketing

Follow these steps when calculating emissions for bulk terminals:

Sub-Category 4.1: Bulk Terminals

SCC: 2501050120

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm>.
2. Find the amount of gasoline sold statewide and by county using, the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.
3. Run a query to find the amount of point source reported gasoline using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract from the amount sold statewide. Use this to allocate to each county.
4. Allocate the amount gasoline sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
5. EPA guidance suggests that only 25% of all gasoline consumed goes through bulk plants. To calculate process rate, multiply each county by 25% to estimate the amount of fuel transferred through bulk terminals.
6. Multiply process rate by the emission factors in the table below:

Emission Factors	
Source	Emission Factor (lb VOC/1000) gal
Storage Tanks Breathing Loss	5.0
Storage Tank Working Loss - Filling	9.6
Storage Tank Working Loss - Emptying	3.8
Gasoline Loading Racks (Vapor balance controlled)	11.9 (0.3)
Total	30.3

7. Bulk terminals also have controls set forth in the Indiana rule (326 IAC 8-4). This rule says that any source of this type that is new after January 1, 1980 is required to make sure that any transfer between a tank and transport uses a submerged pipe vapor balance system. Using EPA's default rule effectiveness, multiply the number in step 2 by the Control Efficiency (CE) 38%, a Rule Effectiveness (RE) of 80%, and a Rule Penetration (RP) of 13%, i.e. process rate X emission factor X $(1-(CE \times RE \times RP)) \times 1 \text{ ton}/2000 \text{ lb} = \text{VOC tons}$.

Sub-Category 4.2: Portable Fuel Containers

SCC: 2501011011, 2501011012, 2501011016, 2501012011, 2501012012, 2501012016

Follow these steps when calculating emissions for portable fuel containers:

- Calculate the emissions for Commercial and Residential gas cans by using the method developed by the California Environmental Protection Agency's document Public Meeting to Consider Approval of California's Portable Gasoline-Container Emissions Inventory. Use the excel spreadsheet found at K:\OAQ_INV\Inv\Area Source\Gasoline.zip to calculate the emissions for permeation, diurnal, and transport. Both the Spillage and Vapor losses are estimated in the nonroad emissions inventory by EPA models.
- Using the survey results below in Table 1, estimate the number of fuel containers in the state for residential categories. The calculations are set up in an excel spreadsheet at K:\OAQ_INV\Inv\Area Source\Gasoline.zip\250101\GasCans.xls, insert the number of occupied housing, from the U.S. Census Bureau's website at <http://www.census.gov/>, in the space marked "households".

Note: As of the data of this SOP, the following steps will lead to number of households in Indiana.

- Go to <http://www.census.gov/>
- On the left hand side select American Fact finder
- Now select housing
- Under "Occupancy Status", select occupies housing units
- Now use the drop down menu and select Indiana

Table 1

Residential Survey Results	
Percentage of households with at least one gas can	46%
Number of gas cans per household	1.8
Percentage of plastic cans/metal cans	76% / 24%
Weighted average gas can capacity (gal)	2.34
Percentage of gas cans stored with fuel	70%
Weighted average stored fuel volume (% of capacity)	49%

Percentage of all gas cans that are plastic and stored open/closed	23% / 53%
Percentage of all gas cans that are metal and stored open/closed	11% / 13%
Percent of all cans stored open/closed	34% / 66%

- Using the survey results below in Table 2, estimate the number of fuel containers for commercial categories for the state. Do this by using the commercial population based on the number of identified businesses in Table 3 and insert into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls.

Table 2

Commercial Survey Results	
Percentage of businesses with at least one gas can	80%
Number of gas cans per business	6.9
Percentage of plastic cans/metal cans	72% / 28%
Weighted average gas can capacity (gal)	3.43
Weighted average stored fuel volume (% of capacity)	49%
Percentage of all gas cans that are plastic and stored open/closed	39% / 33%
Percentage of all gas cans that are metal and stored open/closed	10% / 18%
Percent of all cans stored open/closed	49% / 51%

Table 3

Category	NAICS
Agricultural	115
Automotive Club and Towing Services	48841
Service Stations	8111
Lawn and Garden Maintenance Services	81141
General Contractors	23
Construction and Rental Yards	5324
Landscaping Services	561730

- Calculate permeable emissions separately for both residential and commercial by using the emission rates given in the California document. Use 1.57g/gal/day for plastic containers and 0.6g/gal/day for metal containers. Insert the numbers for both residential and commercial into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls.
- Calculate diurnal emissions by inserting the numbers for both residential and commercial into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls.
- Calculate transport spillage emissions by inserting the numbers for both residential and commercial into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls

Sub-Category 4.3: Service Station Tank Loading or Tank Truck Unloading (Stage 1)

SCC: 2501060052 (uncontrolled), 2501060053 (controlled)

Follow these steps when calculating emissions from tank loading and unloading

- Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm>.
- Find the amount of gasoline sold statewide and county wide by using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Run a query to find the amount of point source reported gasoline using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract from the amount sold statewide. Use this to allocate to each county.
4. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
5. Find the amount of gasoline tanks from the Underground Storage Tank data files from the Office of Land Quality, Indiana Department of Environmental Management
<http://www.in.gov/idem/programs/land/ust/ust.html>.
6. Now copy the data into an Excel spreadsheet. Filter finding the tanks that have only gasoline. Also filter out the tanks that are “permanently out of service”, “suspended per inspection”, and “unregulated”.
7. Using the Petroleum Sources Applicability Rule 326 IAC 8-4-1, filter out the tanks that are located in Clark, Boone, Dearborn, Elkhart, Floyd, Hamilton, Hancock, Harrison, Hendricks, Johnson, Lake, Marion, Morgan, Porter, Saint Joseph, and Shelby counties.
8. To find the amount of balanced tanks in Indiana, use the total of gasoline tanks found in step 7 and divide by the number of tanks that constructed after 1985 through current year. Use the spreadsheet created in step 7 and filter out the tanks that constructed prior to 1985.
9. Now apply the percentage found in step 8 to the amount of gasoline found in each county.
10. Apply the controlled emission factor to only those counties identified in 326 IAC 8-4, i.e. Boone, Clark, Dearborn, Elkhart, Hamilton, Hancock, Harrison, Hendricks, Johnson, Lake, Marion, Morgan, Porter, Saint Joseph, and Shelby. Use the emission factors for stage 1 controlled and uncontrolled in the EIIP, Volume 3, Chapter 11, Gasoline Marketing (Stage 1 and Stage 2)
http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii11_apr2001.pdf.

Sub-Category 4.4: Vehicle Fueling (Stage II) – Vapor Displacement

SCC: 2501060101 (uncontrolled), 2501060102 (controlled)

Follow these steps when calculating emissions from vehicle fueling – Vapor Displacement:

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm>.
2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.
3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
4. Calculate an emission factor using the input files supplied from the mobile model. Table 1 and Table 2 show examples of how the emission factors for January and July for the Southern Counties were calculated. By using these two months, the other months are distributed. Use the average of all months for the emission factor for the Southern counties. Use the same methodology for the Northern counties, Central Counties, Clark/Floyd, and Lake/Porter.

Table 1

January Run for Southern Counties

VTYPE	GM_MILE	MILES	MPG	VMT	G/GAL	Month	Factor
1	0.0628	29.4642	23.89	0.463793	0.322719	1	1.01
2	0.1058	35.2923	18.77	0.070491	0.009868	2	1.14
3	0.1058	35.2923	18.77	0.234672	0.109364	3	1.28
4	0.1486	34.0851	14.31	0.071379	0.010834	4	1.41
5	0.1486	34.0851	14.31	0.032825	0.002291	5	1.55
6	0.2152	35.8919	9.88	0.028896	0.001775	6	1.69
7	0.2342	32.3617	9.08	0.001027	2.24E-06	7	1.82
8	0.2465	19.9098	8.63	0.000522	5.8E-07	8	1.69
9	0.2719	27.6093	7.82	0.001164	2.88E-06	9	1.55
10	0.2733	27.4686	7.78	0.002489	1.32E-05	10	1.41
11	0.2972	24.3758	7.15	0.001132	2.72E-06	11	1.28
12	0.3169	23.6257	6.71	0.000004	3.4E-11	12	1.14
25	0.3421	27.2301	6.22	0.000496	5.23E-07	Sum	16.97
					0.456873	g/gal	Average
					1.007222	lb/E3gal	1.41

Table 2
July Run for Southern Counties

VTYPE	GM_MILE	MILES	MPG	VMT	G/GAL
1	0.1144	29.1752	23.9	0.456768	0.570447
2	0.1955	34.8826	18.75	0.071404	0.018689
3	0.1955	34.8826	18.75	0.237712	0.207133
4	0.2882	33.944	14.3	0.072838	0.021865
5	0.2882	33.944	14.3	0.033496	0.004624
6	0.4164	35.8288	9.9	0.029201	0.003515
7	0.4529	32.4716	9.1	0.001038	4.44E-06
8	0.4763	19.6757	8.66	0.000509	1.07E-06
9	0.5264	27.4602	7.83	0.00116	5.55E-06
10	0.5283	27.3328	7.8	0.002482	2.54E-05
11	0.5749	24.2458	7.17	0.001122	5.19E-06
12	0.6128	23.3718	6.73	0.000004	6.6E-11
25	0.6629	27.2301	6.22	0.000485	9.7E-07
					0.826316 g/gal
					1.821697 lb/E3gal

5. Multiply the process rate in step 4 by the emission factor found in the mobile model.

Sub-Category 4.5: Vehicle Fueling (Stage II) – Spillage

SCC: 2501060103

Follow these steps when calculating emissions from vehicle fueling – Spillage:

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm>.
2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.
3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
4. Apply the emission factor 0.7 lb VOC/1000 gallons in AP-42, Fifth Edition, Volume 1, Chapter 5, Petroleum Industry, Transportation, and Marketing of Petroleum Liquids <http://www.epa.gov/ttn/chieff/ap42/ch05/final/c05s02.pdf> to the process rate found in step 4.

Sub-Category 4.6: Underground Tank Breathing

SCC: 2501060200

Follow these steps when calculating emissions from underground tank breathing:

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm>.
2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
4. Apply the emission factor 1.0 lb VOC/1000 gallons in AP-42, Fifth Edition, Volume 1, Chapter 5, Petroleum Industry, Transportation, and Marketing of Petroleum Liquids <http://www.epa.gov/ttn/chief/ap42/ch05/final/c05s02.pdf> to the process rate found in step 4.

Sub-Category 4.7: Tank Trucks in Transit

SCC: 2505030120

Follow these steps when calculating emissions from tank trucks in transit:

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation <http://www.fhwa.dot.gov/policy/ohim/hs04/htr/mf21.htm>.
2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.
3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.
4. Using the guidance in the EIIP, Volume 3, Chapter 11, Gasoline Marketing (Stage I and State II) at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii11_apr2001.pdf), multiply the activity rate 1.25 by the amount sold per county found in step 4.
5. Now multiply the process rate found in step 5 by the emission factor .06 lb VOC/gallon transported using the EIIP guidance above.

Category 5: Waste Management Practices

Sub-Category 5.1: Solid Waste Incineration

5.1.1: Industrial Solid Waste Incineration

SCC: 2601010000

Follow these steps when calculating emissions from industrial solid waste incineration:

1. Find the number of manufacturing employees, NAICS code 31, for each county using the County Business Patterns at the U.S. Census Bureau's website <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsel.pl>.

Note: Use the steps in 3.2-1 to navigate through the county business patterns.

2. Multiply the county manufacturing employment by the default fuel-loading factor 420 tons / 1,000 manufacturing employees.
3. Multiply the process rate in step 2 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at <http://www.epa.gov/ttn/chief/ap42/ch02/index.html>.

5.1.2: Commercial Solid Waste Incineration

SCC: 2601020000

Follow these steps when calculating emissions from commercial solid waste incineration:

1. Find the population for each county at the U.S. Census Bureau's website <http://www.census.gov/>.
Note: Use steps 2.1-5 to navigate through the U.S. Census Bureau's website.
2. Next find the default factor of .65lb/person/day from U.S. EPA Municipal Solid Waste Report <http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm>.
3. Find the percent of commercial solid waste from the U.S. EPA Municipal Solid Waste Report above.
4. Now, calculate the process rate for commercial solid waste incineration by multiplying population by the default factor of .65lb/person/day by the percent of commercial solid waste and number of days in a year.
5. Multiply the process rate in step 4 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at <http://www.epa.gov/ttn/chief/ap42/ch02/index.html>.

5.1.3: Residential Solid Waste Incineration

SCC: 2601030000

Follow these steps when calculating emissions from residential solid waste incineration:

1. Find the population for each county at the U.S. Census Bureau's website <http://www.census.gov/>.
Note: Use step 2.1-5 to navigate through the U.S. Census Bureau's website.
2. Next find the default factor of .65lb/person/day from U.S. EPA Municipal Solid Waste Report <http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm>.
3. Find the percent of residential solid waste from the U.S. EPA Municipal Solid Waste Report above.
4. Now, calculate the process rate for residential solid waste incineration by multiplying population by the default factor of .65lb/person/day by the percent of commercial solid waste and number of days in a year.
5. Multiply the process rate in step 4 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at <http://www.epa.gov/ttn/chief/ap42/ch02/index.html>.

Sub-Category 5.2: Residential Open Burning

5.2.1: Leaf and Brush Burning

SCC: 2610000100 and 2610000400

Follow these steps when calculating emissions from leaf and brush burning:

1. Find a per capita factor for leaf burning and a per capita for brush burning by using the U.S. EPA's Solid Waste Report at <http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm>.
2. Allocate the amount burned by adjusting the per capita factor for leaves at 25% and for brush at 25%. Of the total waste generated only 28% burns.

- Once all the percentages from above are calculated, multiply the adjusted per capita factor by the rural population for each county from the U.S. Census Bureau at <http://www.census.gov/>

Note: As of the data of this SOP, the following steps will lead to county rural population.

- Go to <http://www.census.gov/>
 - On the left hand side, select American Fact Finder
 - Select data sets
 - Detailed tables
 - County
 - Indiana
 - All counties
- Use the table below to adjust the amount of waste generated to account for the percentage of forest in each county. The percentages come from a document from the United States Department of Agriculture at http://ncrs.fs.fed.us/pubs/rb/rb_nc253b.pdf.

Percent Forested Acres per County	Adjusted for Yard Waste Generated
< 10%	0% generated
>= 10%, and < 50%	50% generated
>= 50%	100% generated

- Now, multiply the amount of leaves and brush by the emission factors found in AP-42, Fifth Edition, Volume 1, Chapter 2, Solid Waste Disposal, Table 2.5-5, and Table 2.5-6 at <http://www.epa.gov/ttn/chief/ap42/ch02/final/c02s05.pdf>.

5.2.2: Residential Waste Incineration

SCC: 2610030000

Follow these steps when calculating emissions from for residential waste incineration:

- Find a per capita factor for residential waste incineration by using the U.S. EPA's Solid Waste Report at <http://www.epa.gov/epaoswer/non-hw/muncpl/pubs/mswchar05.pdf>.
- Using the Solid Waste Report above, subtract the percentage of recycled and composted material from the per capita factor above.
- Now, subtract the percentages of combustibles i.e. glass, metal, yard trimmings, and other waste.
- Using a document from EPA, it states that only 28% of waste generated by rural population burns and of that percent, 49% is actually combusted. Using this information multiply the per capita factor by 0.28 and then multiply that number by 0.49 actually burned in rural counties.
- Once all the percentages are calculated, multiply the adjusted per capita factor by the rural population for each county from the U.S. Census Bureau at <http://www.census.gov/>.

Note: Use steps 5.2.1-3 to find county rural population.

- Calculate the amount of residential waste by the emission factors in the EIIP, Volume 3, Chapter 16, Open Burning at <http://www.epa.gov/ttn/chief/eiip/techreport/volume03/index.html>.

Sub-Category 5.3: Public Owned Treatment Works (POTW's)

SCC: 2630020000

Follow these steps when calculating emissions from POTW's:

1. To calculate the amount of annual flow for public owned treatment works, obtain the amount of monthly flow rate for each county. This is data is supplied by the Office of Water Quality. To calculate for annual flow multiply the monthly flow by the default of 0.16 that represents the amount of industrial flow.
2. Calculate the process rate above by the emission factors in FIRE 6.25 using the SCC code 2630020000.

Sub-Category 5.4: Treatment, Storage, and Disposal Facilities

SCC: 2640000004

Follow these steps when calculating emissions from treatment, storage, and disposal facilities:

1. Obtain a list of treatment facilities and the amount of ignitable waste from each facility from IDEM's Office of Land Quality.
2. Using the list of facilities from step 1, run a query using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb to obtain the amount of ignitable waste reported to IDEM's Office of Air Quality.
3. Compare the two lists obtained in step 1 and step 2, for each facility subtract any quantity reported to OAQ from the quantity reported to OLQ. Do this in order to avoid double counting quantities reported to both offices. Combine the quantities reported from facilities within the same counties. Use these quantities as the process rate for each county.
4. Multiply the process rate above with the combined emission factor in the table below:

Emission Source	Emission Factor in AP-42 (lb VOC/Ton)	Emission Factor Used (lb VOC/Ton)
Storage Tank Vent	0.004-0.09	0.09
Spillage (filling)	0.20	0.20
Loading (filling)	0.00024-1.42	1.42
Spillage (emptying)	0.20	0.20
Loading (emptying)	0.00024-1.42	1.42
Combined Emission Factor		3.33

Category 6: Submit Data to EPA

Submit data in a format that is acceptable to EPA. At the present time the format is the National Emission Inventory (NEI).

6. Standards and checklists

The Emission Reporting program does not have any checklist for the Area Source Inventory at this time. The Emission Group does this electronically through an excel spreadsheet that is created when needed.

7. Records Management

The Area Source Inventory files are kept electronically at K:\OAQ_INV\Inv\Area Source.

The Branch Contact for the Air Programs Branch and the Section contact for the Technical Support and Modeling Section will keep copies of the SOPs for the Technical Support and Modeling Section to be referenced as needed. An electronic copy will also be available on K:\OAQ_INV\SOPs.

8. Quality Assurance / Quality Control

Comparisons are made against the emissions estimates made by The U.S. EPA in the NEI.

9. Continuous Improvement Cycle

A periodic review will be completed per updates and changes made to the EIIP.

10. References

The Area Source Inventory is a requirement of 40 CFR Part 51 Subpart A - Emission Inventory Reporting Requirements.

11. History of Revisions

Date Month/day/year	Revision Number	Description
02/27/2008	1	Revised using new SOP template.

12. Appendices

None

APPENDIX F

Example Mobile Input/Output and Calculation Files
Lake and Porter Counties

MOBILE6 INPUT FILE

POLLUTANTS : HC NOX
DATABASE OUTPUT :
WITH FIELDNAMES :
DATABASE EMISSIONS : 2222 2221
DATABASE FACILITIES: ARTERIAL FREEWAY LOCAL RAMP

RUN DATA

MIN/MAX TEMPERATURE: 60. 82.
FUEL RVP : 9.0
FUEL PROGRAM : 2 N
NO REFUELING :
EXPAND EXHAUST :
EXPAND EVAPORATIVE :
ANTI-TAMP PROG :
90 76 95 22222 21111111 1 12 095. 12111112
REG DIST : iregdata.d

* The following describes the I/M programs within Lake/Porter Counties:

* First I/M Program

I/M PROGRAM : 1 1997 2050 2 T/O IDLE
I/M MODEL YEARS : 1 1976 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 20.0
I/M COMPLIANCE : 1 95.0
I/M WAIVER RATES : 1 3.0 3.0

* Second I/M Program (Cutpoints for LDGV, LDGT2, LDGT4 and HDGV2B)

I/M PROGRAM : 2 1997 2050 2 T/O IM240
I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 21212 21111111 1
I/M STRINGENCY : 2 20.0
I/M COMPLIANCE : 2 95.0
I/M WAIVER RATES : 2 3.0 3.0
I/M CUTPOINTS : 2 IM2002A.d
I/M GRACE PERIOD : 2 4

* Third I/M Program (Cutpoints for LDGT1 and LDGT3)

I/M PROGRAM : 3 1997 2050 2 T/O IM240
I/M MODEL YEARS : 3 1981 1995
I/M VEHICLES : 3 12121 11111111 1
I/M STRINGENCY : 3 20.0
I/M COMPLIANCE : 3 95.0
I/M WAIVER RATES : 3 3.0 3.0
I/M CUTPOINTS : 3 IM2002B.d
I/M GRACE PERIOD : 3 4

* Fourth I/M Program

I/M PROGRAM : 4 1997 2050 2 T/O GC
I/M MODEL YEARS : 4 1976 1995
I/M VEHICLES : 4 22222 21111111 1

* Fifth I/M Program

I/M PROGRAM : 5 2002 2050 2 T/O OBD I/M
I/M MODEL YEARS : 5 1996 2050
I/M VEHICLES : 5 22222 21111111 1
I/M STRINGENCY : 5 20.0
I/M COMPLIANCE : 5 95.0

I/M WAIVER RATES : 5 3.0 3.0
I/M GRACE PERIOD : 5 4
* Sixth I/M Program
I/M PROGRAM : 6 1997 2050 2 T/O EVAP OBD & GC
I/M MODEL YEARS : 6 1996 2050
I/M VEHICLES : 6 22222 11111111 1

SCENARIO RECORD

CALENDAR YEAR : 2010
EVALUATION MONTH : 7
VMT FRACTIONS :
0.364715466 0.091693420 0.305130180 0.094060366 0.035666192 0.033118607
0.003226941 0.002717424
0.002038068 0.007387997 0.008746709 0.009510985 0.033882883 0.001698390
0.000849195 0.005557177
VMT BY FACILITY : 2010nvmt.d
SPEED VMT : svmt10.d

END OF RUN

Lake-Porter

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
VMT Distribution:	0.3644	0.3968	0.1278	0.5246	0.0304	0.0003	0.0019	0.0728	0.0056	1
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Composite Emission Factors (g/mi):										
Composite VOC :	0.519	0.428	0.543	0.456	0.524	0.166	0.292	0.289	1.83	0.476
Composite NOX :	0.486	0.565	0.844	0.633	2.483	0.48	0.689	8.214	1.4	1.192
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Exhaust emissions (g/mi):										
VOC Start:	0.118	0.119	0.166	0.13		0.068	0.103		0.401	0.113659
VOC Running:	0.1	0.108	0.161	0.121		0.098	0.189		1.038	0.131626
VOC Total Exhaust:	0.219	0.227	0.327	0.251	0.147	0.166	0.292	0.289	1.44	0.245
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
NOx Start:	0.089	0.107	0.142	0.115		0.018	0.02		0.395	0.095016
NOx Running:	0.397	0.458	0.701	0.517		0.462	0.67		1.006	1.096393
NOx Total Exhaust:	0.486	0.565	0.844	0.633	2.483	0.48	0.689	8.214	1.4	1.192
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Non-Exhaust Emissions (g/mi):										
Hot Soak Loss:	0.13	0.085	0.087	0.086	0.143	0	0	0	0.072	0.097
Diurnal Loss:	0.014	0.01	0.011	0.01	0.025	0	0	0	0.002	0.011
Resting Loss:	0.078	0.05	0.06	0.053	0.133	0	0	0	0.319	0.062
Running Loss:	0.069	0.046	0.048	0.046	0.067	0	0	0	0	0.051
Crankcase Loss:	0.008	0.01	0.01	0.01	0.01	0	0	0	0	0.009
Refueling Loss:	0	0	0	0	0	0	0	0	0	0
Total Non-Exhaust:	0.3	0.201	0.216	0.204	0.377	0	0	0	0.392	0.23
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

month	iimvmt	iemvmt	eimvmt	eemvmt	MVMT
1	260507809	53621688	49689584	119629666	483,448,747
2	241369566	49682363	46039132	110841056	447,932,117
3	274513605	56504575	52361067	126061369	509,440,615
4	272164245	56020994	51912947	124982502	505,080,689
5	284037546	58464938	54177676	130434926	527,115,086
6	284633922	58587693	54291429	130708792	528,221,836
7	288519401	59387461	55032550	132493071	535,432,483
8	289639865	59618092	55246269	133007607	537,511,833
9	273790725	56355781	52223184	125729410	508,099,100
10	280115923	57657729	53429660	128634050	519,837,363
11	269453446	55463016	51395886	123737657	500,050,005
12	280115923	57657729	53429660	128634050	519,837,363

LEGAL NOTICE OF PUBLIC HEARING
Redesignation Petition and Maintenance Plan
In association with the Annual Standard for Fine Particulate Matter (PM_{2.5})

Lake and Porter Counties, Indiana

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management (IDEM) will hold a public hearing on February 27, 2008. The purpose of this hearing is to receive public comment on the Draft Redesignation Petition and Maintenance Plan in Association with the Annual Standard for Fine Particulate Matter, for Lake and Porter Counties, Indiana. The meeting will convene at 6:00 p.m. (local time) in the Multi-Purpose Room #C125, at Ivy Tech Community College – Gary Campus, located at 1440 East 35th Avenue, Gary, Indiana. The Multi-Purpose Room is located in the lower level of the Business, Science and Administration building. All interested persons are invited and will be given opportunity to express their views concerning the draft documents.

This Redesignation Petition and Maintenance Plan is being drafted and submitted consistent with United States Environmental Protection Agency (U.S. EPA) guidance.

Copies of the draft documents will be available on or before January 28, 2008 to any person upon request and at the following locations:

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate, Room N1003, Indianapolis, Indiana.
- Indiana Department of Environmental Management, Northwest Regional Office, 8315 Virginia Street, Suite 1, Merrillville, Indiana.
- Crown Point Community Library, 214 South Court Street, Crown Point, Indiana.
- Valparaiso Public Library, 103 Jefferson Street, Valparaiso, Indiana.
- Gary Public Library, 220 West 5th Avenue, Gary, Indiana.
- Hammond Public Library, 564 State Street, Hammond, Indiana.
- Whiting Public Library, 1735 Oliver Street, Whiting, Indiana.

Oral statements will be heard, but for the accuracy of the record, statements should be submitted in writing. Written statements may be submitted to the attendant designated to receive written comments at the public hearing.

IDEM will also accept written comments through March 11, 2008. Mailed comments should be addressed to:

**Lake and Porter Counties Fine Particulate Matter (PM_{2.5})
Redesignation Petition and Maintenance Plan**
Scott Deloney, Chief
Programs Branch
Office of Air Quality MC 61-50
100 North Senate Avenue
Indiana Department of Environmental Management
Indianapolis, IN 46206-2251

A transcript of the hearing and all written submissions provided at the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.

For additional information contact Ms. Pat Daniel, at the Indiana Department of Environmental Management, Air Programs Branch, Office of Air Quality, Room 1001, Indiana Government Center North, 100 North Senate Avenue, Indianapolis or call (317) 233-0429 or (800) 451-6027 ext. 3-0429 (in Indiana).

Individuals requiring reasonable accommodations for participation in this hearing should contact the IDEM Americans with Disabilities Act (ADA) coordinator at:

Attn: ADA Coordinator
Indiana Department of Environmental Management – Mail Code 50-10
100 North Senate Avenue
Indianapolis, IN 46204-2251

Or call (317) 233-1785 (voice) or (317) 232-6565 (TDD). Please provide a minimum of 72 hours notification.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Thomas W. Easterly
Commissioner

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Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

The Post Tribune
1433 East 83rd Avenue
Merrillville, Indiana 46410

Date: January 22, 2008

Phone: 219-648-2182
Fax: 219-648-3218

ATTENTION: PUBLIC NOTICES - LEGAL ADVERTISING SECTION

Enclosed please find Indiana Department of Environmental Management Public Hearing Legal Notice(s) concerning the Drift Redesignation Petition and Maintenance Plan for Fine Particulate Matter (PM2.5) for Lake and Porter Counties, Indiana.

Please print ONE TIME, on or before January 25, 2008 in order for us to satisfy our statutory requirements.

Please send a notarized form no. 99p and/or publisher's claim, together with the clipping, showing the date of publication and your Federal ID number to:

MAIL TO:

**Attn: Sandra Robinson, Room N1001
Indiana Department of Environmental Management
100 N. Senate, MC 61-50
Indianapolis, Indiana 46204**

If you have any questions, please call me at 317-233-0427. Thank you.

Sincerely,

Sandra Robinson
Program Planning and Policy
Office of Air Quality

Enclosures

COMPUTATION OF CHARGES

73.00

2

146.00

lines, columns wide equals equivalent

lines at 3290 cents per line

\$ 48.03

Additional charge for notices containing rule or tabular work
(50 percent of above amount)Charge for extra proofs of publication
(\$1.00 for each proof in excess of two)

TOTAL AMOUNT OF CLAIM

\$ 48.03

DATA FOR COMPUTING COST

Width of single column 6.8 ems

Size of type 5.5 point

Number of insertions 1

Pursuant to the provisions and penalties of Ch. 155, Acts 1953,

I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid

Date January 28 20 08

BY 132

1:28

LEGAL NOTICE OF PUBLIC HEARING

Redesignation Petition and Maintenance Plan

In association with the Annual Standard for Fine Particulate Matter (PM2.5)

Lake and Porter Counties, Indiana

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management (IDEM) will hold a public hearing on February 27, 2008. The purpose of this hearing is to receive public comment on the Draft Redesignation Petition and Maintenance Plan in Association with the Annual Standard for Fine Particulate Matter (PM2.5), for Lake and Porter Counties, Indiana. The meeting will convene at 6:00 p.m. (local time) in the Multi-Purpose Room #C125, at Ivy Tech Community College - Gary Campus, located at 1440 East 35th Avenue, Gary, Indiana. The Multi-Purpose Room is located in the lower level of the Business, Science and Administration building. All interested persons are invited and will be given opportunity to express their views concerning the draft documents.

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Redesignation Petition and Maintenance Plan
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Programs Branch
Office of Air Quality MC 61-50
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Indiana Department of Environmental Management
Mail Code 50-10
100 North Senate Avenue
Indianapolis, IN 46204-2251

Or call (317) 233-1785 (voice) or (317) 232-6565 (TDD). Please provide a minimum of 72 hours notification.

Title CREDIT MANAGER

PUBLISHER'S AFFIDAVIT

State of Indiana)
Lake County) SS

Personally appeared before me a notary public in and for said county and state, the undersigned MARIBEL DELBREY

being duly sworn, says that he/she is LEGAL CLERK

of the POST-TRIBUNE a DAILY

newspaper of general circulation printed and published in the English language in the city of

MERRILLVILLE

..... in state and county

aforsaid, and that the printed matter attached hereto is a true copy, which was duly published

in said paper for 1 time the dates of publication being as follows

REDESIGNATION PETITION

1/28

Subscribed and sworn to before me this 30th day of January, 20 08

Notary Public

My commission expires May 11, 2008

TO: ACCOUNTING
IGCN - Room 1345

FROM: KAROL T. CHUMA
IGCN - 1001
RULES SECTION
OFFICE OF AIR QUALITY

DATE: 2-11-08

Note: Please send a copy of the paid
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Indianapolis, Indiana 46204
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(800) 451-6027
www.IN.gov/idem

Indianapolis Star & News
307 North Pennsylvania
P.O. Box 145
Indianapolis, Indiana 46204

Date: January 22, 2008

Phone: 317-444-4000
Fax: 317-444-8806

ATTENTION: PUBLIC NOTICES - LEGAL ADVERTISING SECTION

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100 N. Senate, MC 61-50

Indianapolis, Indiana 46204

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Sincerely,

Sandra Robinson
Program Planning and Policy
Office of Air Quality

Enclosures

IND DEPT OF ENVIRONMENTAL MGMT

MARION COUNTY, INDIANA

To: INDIANAPOLIS NEWSPAPERS
307 N PENNSYLVANIA ST - PO BOX 145
INDIANAPOLIS, IN 46206-0145

PUBLISHER'S CLAIM

LINE COUNT

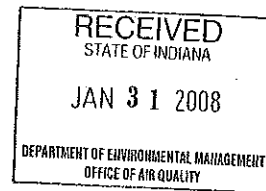
Display Matter - (Must not exceed two actual lines, neither of which shall total more than four solid lines of the type in which the body of the advertisement is set). Number of equivalent lines

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Charges for extra proofs of publication (\$1.00 for each proof in excess of two)

TOTAL AMOUNT OF CLAIM

DATA FOR COMPUTING COST

Width of single column 7.83 cms Size of type 5.7 point

Number of insertions 1.0

Pursuant to the provisions and penalties of Chapter 155, Acts of 1953,
I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

DATE: 01/28/2008

81956-5111344

PUBLISHER'S AFFIDAVIT

State of Indiana SS:
MARION County

Personally appeared before me, a notary public in and for said county and state,
the undersigned Karen Mullins who, being duly sworn, says that SHE is clerk
of the INDIANAPOLIS NEWSPAPERS a DAILY STAR newspaper of general circulation
printed and published in the English language in the city of INDIANAPOLIS in state
and county aforesaid, and that the printed matter attached hereto is a true copy,
which was duly published in said paper for 1 time(s), between the dates of:
01/28/2008 and 01/28/2008

Karen Mullins
Clerk
Title

Karen Mullins
Clerk
Title

Subscribed and sworn to before me on 01/28/2008

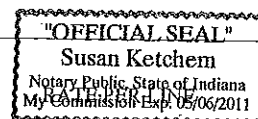
Susan Ketchum
Notary Public

Form 65-REV 1-88

My commission expires:

STATE PRESCRIBED FORMULA

7.83 PICA COLUMN - 94 POINT
94 POINTS / 5.7 PT. TYPE - 16.49
16.49 EMS / 250 - .06596 SQUARES
.06596 SQUARES x \$5.14 - .339 CENTS PER LINE



PUBLISHED 1 TIME = .339
PUBLISHED 2 TIMES = .509
PUBLISHED 3 TIMES = .679
PUBLISHED 4 TIMES = .848

PUBLIC NOTICES

LEGAL NOTICE
OF PUBLIC HEARING
 Redesignation Petition and Maintenance Plan
 In association with the Annual Standard for Fine Particulate Matter (PM_{2.5})
 Lake and Porter Counties, Indiana
 Notice is hereby given under 40 CFR 51.302 that the Indiana Department of Environmental Management (IDEM) will hold a public hearing on February 27, 2008. The purpose of this hearing is to receive public comment on the Draft Redesignation Petition and Maintenance Plan in Association with the Annual Standard for Fine Particulate Matter (PM_{2.5}), for Lake and Porter Counties, Indiana. The meeting will convene at 6:00 p.m. (local time) in the Multi-Purpose Room #C125, at Ivy Tech Community College - Gary Campus, located at 1440 East 35th Avenue, Gary, Indiana. The Multi-Purpose Room is located in the lower level of the Business, Science, and Administration building. All interested persons are invited and will be given opportunity to express their views concerning the draft documents.
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 Scott Deloney, Chief Programs Branch
 Office of Air Quality MC 61-50
 100 North Senate Avenue
 Indiana Department of Environmental Management
 Indianapolis, IN 46206-2251
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 Attn: ADA Coordinator
 Indiana Department of Environmental Management - Mail Code 50-10
 100 North Senate Avenue
 Indianapolis, IN 46204-2251.
 Or call (317) 233-1785 (voice) or (317) 232-6565 (TDD). Please provide a minimum of 72 hours notification.
 (S-01/28/08-5111344)

Form 65-REV 1-88

PUBLISHER'S AFFIDAVIT

State of Indiana SS:
 MARION County

Personally appeared before me, a notary public in and for said county and state, the undersigned **Karen Mullins** who, being duly sworn, says that SHE is clerk of the INDIANAPOLIS NEWSPAPERS a DAILY STAR newspaper of general circulation printed and published in the English language in the city of INDIANAPOLIS in state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for 1 time(s), between the dates of:

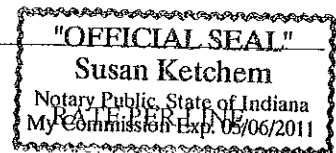
01/28/2008 and 01/28/2008

Karen Mullins

Subscribed and sworn to before me on 01/28/2008

Susan Ketchem
 Notary

My commission expires:



BED FORMULA

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T. TYPE - 16.49

.06596 SQUARES

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 PUBLISHED 2 TIMES = .50
 PUBLISHED 3 TIMES = .67
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TO: ACCOUNTING
IGCN - Room 1345

FROM: KAROL T. CHUMA
IGCN - 1001
RULES SECTION
OFFICE OF AIR QUALITY

DATE: 2-11-08

Note: Please send a copy of the paid
publication to Indianapolis Star
or News

The attached invoice for publication of
public notice is approved for payment.

ACCOUNT # 3610/140900



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

The Times
601 West 45th Avenue
Munster, Indiana 46321

Date: January 22, 2008

Phone: 219-933-3292
Fax: 219-933-3334

ATTENTION: PUBLIC NOTICES - LEGAL ADVERTISING SECTION

Enclosed please find Indiana Department of Environmental Management Public Hearing Legal Notice(s) concerning the Draft Redesignation Petition and Maintenance Plan for Fine Particulate Matter (PM_{2.5}) for Lake and Porter Counties, Indiana.

Please print **ONE TIME**, on or before ²⁸January 25, 2008 in order for us to satisfy our statutory requirements.

Please send a notarized form no. 99p and/or publisher's claim, together with the clipping, showing the date of publication and your Federal ID number to:

MAIL TO:

**Attn: Sandra Robinson, Room N1001
Indiana Department of Environmental Management
100 N. Senate, MC 61-50
Indianapolis, Indiana 46204**

If you have any questions, please call me at 317-233-0427. Thank you.

Sincerely,

Sandra Robinson
Program Planning and Policy
Office of Air Quality

Enclosures

106-11
 (Governmental Unit)
Lake County, Indiana

To: Northwest Indiana Newspapers
601-45th Avenue, Munster, IN 46321

PUBLISHER'S CLAIM

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Head -- number of lines

Body -- number of lines

Tail -- number of lines

Total number of lines in notice

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140 lines 1 columns wide equals 140 equivalent lines at 29.8 cents per line

\$ 41.72

Additional charge for notices containing rule or tabular work

none

(50 percent of above amount)

10.00

Charge for extra proofs of publication (\$1.00 for each proof in excess of two)

TOTAL AMOUNT OF CLAIM

\$ 51.72

20047219

DATA FOR COMPUTING COST

Width of single column 6.4 ems

Number of insertions 1

Size of type 5.5 point

Pursuant to the provisions and penalties of Chapter 155, Acts 1953,

I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

Date: Jan 28, 2008

Title: Legal Clerk

PUBLISHER'S AFFIDAVIT

State of Indiana)

) ss:

Lake County)

Personally appeared before me, a notary public in and for said county and state, the undersigned Kurt Stephens who, being duly sworn, says that he is Legal Clerk of the TIMES newspaper of general circulation printed and published in the English language in the (city) (town) of Munster in the state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for 1 time, the dates of publication being as follows:

January 28, 2008

Subscribed and sworn to before me this 28 day of Jan, 2008

My commission expires:

Janice C. Melinger
 Notary Public
June 13, 2015

112EM
(Governmental Unit)
Lake County, Indiana

To: Northwest Indiana Newspapers
601-45th Avenue, Munster, IN 46321

LEGAL NOTICE OF PUBLIC
HEARING
Redesignated Petition and
Maintenance Plan
In association with the Annual
Standards for Fine Particulate
Matter (PM2.5)
Lake and Porter Counties,
Indiana

PUBLISHER'S CLAIM

not exceed two actual lines, neither of which shall total more
than 3 of type in which the body of the advertisement is set) -- number

RECEIVED
STATE OF INDIANA
JAN 31 2008
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

Notice is hereby given under
40 CFR 51.102 that the Indiana
Department of Environmental
Management (IDEM) will hold a public hearing on
February 27, 2008. The purpose
of this hearing is to receive public comment on the
Draft Redesignation Petition
and Maintenance Plan in Association
with the Annual Standard for Fine Particulate Matter
(PM2.5), for Lake and Porter
Counties, Indiana. The meeting
will convene at 10:00 a.m. (local
time) in the Multi-Purpose
Room #C125, at Ivy Tech
Community College - Gary
Campus, located at 1440 East

REGES

lines wide equals 140 equivalent lines at 29.8 cents per line

\$ 41.72

for notices containing rule or tabular work

online

(e amount)

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proofs of publication (\$1.00 for each proof in excess of two)

\$ 51.72

20047219

OF CLAIM

NG COST

per line 6.4 cents

nt

provisions and penalties of Chapter 185, Acts 1963,

that the foregoing account is just and correct, that the amount claimed is legally due,
credits, and that no part of the same has been paid.

18, 20 08

Title: Legal Clerk

PUBLISHER'S AFFIDAVIT

State of Indiana)
) ss:
Lake County)

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the undersigned Kurt Stephens who, being duly sworn, says that he is
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a true copy, which was duly published in said paper for 1 time, the dates
of publication being as follows:

January 28, 2008

Subscribed and sworn to before me this 28 day of Jan, 20 08

Jennifer C. Meloy
Notary Public
My commission expires: June 13, 2015

35th Avenue, Gary, Indiana.
The Multi-Purpose Room is located in the lower level of the Business, Science and Administration building. All interested persons are invited and will be given opportunity to express their views concerning the draft documents.
This Redesignation Petition and Maintenance Plan is being drafted and submitted consistent with United States Environmental Protection Agency (U.S. EPA) guidance. Copies of the draft documents will be available on or before January 28, 2008 to any person upon request and at the following locations:
Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate, Room N1003, Indianapolis, Indiana.
Indiana Department of Environmental Management, Northwest Regional Office, 8315 Virginia Street, Suite 1, Mendenhall, Indiana.
Crown Point Community Library, 214 South Court Street, Crown Point, Indiana.
Valparaiso Public Library, 103 Jefferson Street, Valparaiso, Indiana.
Gary Public Library, 220 West 5th Avenue, Gary, Indiana.
Hammond Public Library, 564 State Street, Hammond, Indiana.
Whiting Public Library, 1735 Oliver Street, Whiting, Indiana.
Oral statements will be heard, but for the accuracy of the record, statements should be submitted in writing. Written statements may be submitted to the attendant designated to receive written comments at the public hearing.
IDEM will also accept written comments through March 11, 2008. Mailed comments should be addressed to:
Lake and Porter Counties Fine Particulate Matter (PM2.5) Redesignation Petition and Maintenance Plan
Scott DeLooney, Chief
Programs Branch
Office of Air Quality MC 81-50
100 North Senate Avenue
Indiana Government Center North, 100 North Senate Avenue, Indianapolis, IN 46204-2251
A transcript of the hearing and all written submissions provided at the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.
For additional information contact Ms. Pat Daniel, at the Indiana Department of Environmental Management, Air Programs Branch, Office of Air Quality, Room 1001, Indiana Government Center North, 100 North Senate Avenue, Indianapolis or call (317) 233-0423 or (800) 451-6027 ext. 3-0423 (in Indiana).
Individuals requiring reasonable accommodations for participation in this hearing should contact the IDEM Americans with Disabilities Act (ADA) coordinator at:
Attn: ADA Coordinator
Indiana Department of Environmental Management
Mail Code 80-10
100 North Senate Avenue
Indianapolis, IN 46204-2251
Or call (317) 233-1785 (voice) or (317) 232-6555 (TDD). Please provide a minimum of 72 hours notification.
1/28 - 20047219

TO: ACCOUNTING
IGCN - Room 1345

FROM: KAROL T. CHUMA
IGCN - 1001
RULES SECTION
OFFICE OF AIR QUALITY

DATE: 2-11-08

Note: Please send a copy of the paid
publication to The Times,
located in Munster, IN

The attached invoice for publication of
public notice is approved for payment.

ACCOUNT # 3610/140900

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Page 1

PUBLIC HEARING ATTENDANCE RECORD

Title of Public Hearing: FINE PARTICLES REDSIGNATION Location: IVY TECH - GARY Date: 2/27/08
LAKE + PORTER COUNTIES

Please print all the information:

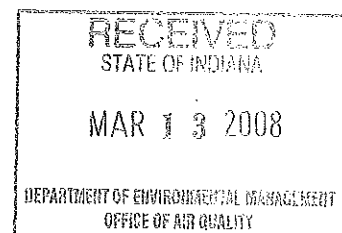
NAME	ORGANIZATION/ COMPANY	PHONE NUMBER	ADDRESS
Tim Anselmi	VSS GARY	219 888 3387	1 N. Broadway GARY
Tram Nguyen	EQM	219 888 3011	1 N. Broadway Gary
LISA GEORGE	Gary resident	" 938-5385	719 N. Hancock, GARY
Mark Strimbu	NiSource	219-647-5269	801 E. 86th Ave, Merrillville, IN 46410
Christine Lutz	Post-Tripping		
Mark Coleman	Ogden Area Resident	219-510-7092	9 Locust Place Ogden Dunes IN 46368
Doreen Carey	City of Gary	219 882 3000	839 Broadway N206 Gary 46402
Cynthia Friedrich	Gary resident		8007 Lake Shore Dr, Apt A Gary 46403
Karin Kirulis	Gary resident	219-938-0941	819 N. Vigo St. Gary 46403
KAREN KROZICK		219 836 1857	8212 Madison Ave # Munster IN 46321

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Under 40CFR 51.102

A PUBLIC HEARING ON THE MATTER OF
REDESIGNATION PETITION and MAINTENANCE PLAN
IN ASSOCIATION WITH THE ANNUAL STANDARD FOR FINE
PARTICULATE MATTER (PM2.5)

REPORT OF PUBLIC HEARING had in the
above-entitled matter, taken at Ivy Tech Community
College, Gary Campus, 1440 East 35th Avenue, Gary,
Indiana, on February 27, 2008, commencing at 6:00
o'clock in the evening.



SEIDEL & SASSE
COURT REPORTERS, INC.
150 W. Lincolnway, Suite 1005
Valparaiso, IN 46383
219.462.3436

PAT DANIEL: Good evening everyone. We can go ahead and get started.

This is a public hearing to solely accept comments concerning the draft redesignation petition and maintenance plan in association with the annual fine particulate matter standard for Lake and Porter Counties. This hearing is being held to conform to the provisions in 40 CFR Part 51 regarding public hearings for state implementation plan submittals.

My name is Pat Daniel. I'm a senior environmental manager in the planning section of the Indiana Department of Environmental Management, Office of Air Quality. I have been appointed to act as hearing officer for this public hearing. Also, here with me from the Office of Air Quality is Scott Deloney. He is the chief of the programs branch, also in the Office of Air Quality.

Notice of the time and place of the hearing was given, as provided by law, by publication in the following newspapers: The Indianapolis Star, Indianapolis, Indiana; The Times, Munster, Indiana; the Post-Tribune, Merrillville, Indiana.

The purpose of this hearing is to provide interested persons an opportunity to offer comments to the state regarding the draft redesignation petition and

maintenance plan for Lake and Porter Counties.. Appearance blanks have been distributed in the hearing room for all those desiring to be shown appearing on record in this cause. If you have not already filled out the form, please do so and indicate if you are appearing for yourself or on behalf of a group or organization, and identify such group or organization. Also, note the capacity in which you appear; such as attorney, officer or authorized spokesperson. Any person who is heard or represented at this hearing or who requests notice may be given written notice of the final action taken on this state implementation plan submittal. Please indicate on the appearance card if you wish to receive this notification. When appearance cards have been completed, they should be handed to me, and I will include them in the official record of this proceeding. Oral statements will be heard, but written statements may be handed to me or mailed to the Office of Air Quality on or before close of business on March 11th, 2008.

A written transcript of this hearing is being made. The transcript will be open for public inspection, and a copy of the transcript will be made available to any person upon payment of the copying cost. After the conclusion of this public hearing, I

will prepare a written report summarizing the comments received at this hearing and recommending changes which may need to be made to the document.

I would like to introduce the following documents into the record: the notice of the public hearing, a draft copy of the request for redesignation petition and maintenance plan for ozone attainment - not ozone, I'm sorry - for fine particle attainment in the fine particle nonattainment area, Lake and Porter Counties, supplement to Appendix A, 2007 monitoring data technical support documentation.

Finally, I would like to briefly go over the contents of the draft document. The most recent design value for the area, based on 2005 through 2007 data, is 14.5 micrograms per cubic meter. This design value represents fine particle concentrations that are below the national ambient air quality standard, thus the area is eligible to be redesignated to attainment under the annual fine particle standard and classified as maintenance.

A maintenance classification requires that the state ensure that air quality is maintained. This means that total emissions contributing to fine particle concentrations cannot increase over time and that the state maintain a permitting program that helps ensure

that no backsliding occurs. The Indiana Department of Environmental Management has prepared the draft redesignation and maintenance plan for Lake and Porter Counties consistent with U.S. EPA guidance. The draft petition outlines a demonstration that the area has attained the standard based on monitored concentrations and that the reductions in monitored concentrations are attributable to permanent and enforceable reductions in precursor emissions, specifically reductions of oxides of nitrogen.

Furthermore, the draft maintenance plan outlines the following: Lake and Porter Counties do not significantly contribute to violations outside its portion of the nonattainment area; redesignating the area to attainment will not adversely affect any downwind area's ability to attain the standard; regional precursor emissions of oxides of nitrogen and sulfur dioxide will continue to decline in the future; due to existing and future emission controls, the area's air quality is not projected to worsen, and should improve further over time; a commitment for all existing emission control programs to remain in place; a commitment to revise the plan within eight years of implementation of redesignation; a commitment to adopt and expeditiously implement necessary corrective actions

if a warning or action level response is triggered - an action level response is triggered by a violation of the standard 3-year average of 15.1 micrograms per cubic meter occurs; a mobile source budget for transportation conformity budget.

And if I could back up just for a few minutes, in 1997, the U.S. EPA, United States Environmental Protection Agency, set daily and annual standards, ambient air quality standards for fine particles at 15 micrograms per cubic meter on an annual basis, and at 65 micrograms per cubic meter on a 24-hour or daily basis. Legal challenges to the new standards for fine particles resulted in delayed implementation of the standard until February 2001 when the Supreme Court upheld the standards and ruled that the U.S. EPA could proceed with implementation of the new standards. Indiana began monitoring for fine particles in 1999. The U.S. EPA originally designated Lake and Porter Counties under the fine particle standards based on 2001 through 2003 monitoring data in December 2004. The U.S. EPA -- U.S. EPA designated areas throughout the country as attainment, nonattainment or unclassifiable. Lake and Porter Counties were designated nonattainment as part of the Chicago nonattainment area. However, the U.S. EPA withdrew a number of counties identified as

nonattainment based on updated monitoring data for 2002 through 2004 prior to the effective date of designations, which was April 5th, 2005, based on the fact that those counties had met the standard at the close of 2004.

Although the 2001 through 2003 design value for the East Chicago monitoring site in Lake County resulted in a nonattainment designation for Lake and Porter Counties, the 2002 through 2004 monitored design values for all monitoring sites in both Lake and Porter Counties demonstrated attainment at the close of 2004, and the State of Indiana requested that the counties be classified in accordance with measured air quality. The U.S. EPA proceeded with a nonattainment designation for Lake and Porter Counties. Since being designated nonattainment, Lake and Porter County -- Counties have continued to record three years of quality assured ambient air quality monitoring data for the years 2003 through 2005, and 2004 through 2006 and now, 2005 through 2007, which demonstrates a continued compliance with the annual fine particle standard.

This concludes my comments regarding the draft redesignation petition and maintenance plan for Lake and Porter Counties.

Before opening this hearing for public

comments, may I once again remind you that this hearing pertains solely to the draft redesignation petition and maintenance plan in association with the annual fine particle standard for Lake and Porter Counties, and only comments germane to this matter will be considered as part of the public record. Scott and I will be available following this hearing to address any questions you may have that do not pertain to this specific matter.

This hearing is now open for public -- for public comment.

SCOTT DELONEY: I do have four cards from individuals that indicate that they would like to speak tonight. If during this portion of the hearing, now that it is open for public comment, someone else decides that they wish to speak, you're welcome to fill out a card and deliver it at any time before the hearing is closed, and Pat will make it very clear before the hearing is, in fact, closed. Due to time constraints, the first individual that I'm going to call is Karen -- is it Kroczek?

KAREN KROCZEK: Correct. Thank you.

SCOTT DELONEY: Great. If you wouldn't mind coming forward just a little bit to make sure that the recorder properly records your comments into the public

record.

KAREN KROCZEK: Scott, Pat, ladies and gentlemen, I come to you this evening without the depth of research on this topic of redesignation that I would like to be able to bring with me, but I have had a personal matter, a close relative who is terminal, and so I've been dealing with things.

I really appreciate your willingness to come here and listen to the public comments on this matter. I think it's an extremely important concern to many of us. The mission of IDEM is to encourage and aid businesses and citizens in protecting and improving Indiana's environment. I would, therefore, ask how permitting the emission of larger quantities of toxic soot could accomplish this mission. If EPA grants your request to increase the amount of emissions, is this likely to support an improvement in protecting and improving Indiana environment?

In searching for information regarding -- regarding soot, I found an article from Argonne National Laboratory, until recently, my employer, where an APS research group describes a new technology, new in 2003, that allows examination of the nano particles that make up soot while it's still in a nano state, which is, of course, way too small for U.S. Steel to see it D L4

seem. The DOE facility, Argonne, warns of health, environmental and aesthetic risks of soot. Soot particles are created when hydrocarbons are not completely burned. That is, there's incomplete combustion of hydrocarbons. In commercial applications, this is often referred to as carbon black. Soot creates health problems and may contribute to thousands of premature deaths each year, according to the United States Environmental Protection Agency.

Soot begins with the chemical growth of large benzene-based hydrocarbons, and anybody who deals with chemicals knows benzene is not something you want to play with. It's a complex particle. Anyway, it aggregates and merges from .5 nanometers up to 20 to 50 nanometers in diameter, at which time it coagulates and starts causing real problems. The smaller the particle size, the more dangerous it is, because it actually gets into our lungs and into our bloodstream.

Health effects that are noted by Argonne from soot, particularly fine particles, include increased respiratory symptoms, such as irritation of the airways, coughing or difficulties with breathing, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, nonfatal heart attacks and premature death in people who have heart -- who have

lung disease. People with heart or lung disease and children and older adults are most likely to be affected by particle pollution exposure. However, even if you're healthy, you may experience temporary symptoms from exposure to elevated levels of fine particle pollution. I brought the Argonne report with me, and I will submit that as part of written comment.

In terms of environmental damage, Argonne notes that the haze that is caused by soot overlays many of our cities and affects even our pristine national parks. Additionally, it contributes to acidity in lakes and streams, negative nutrient balance in coastal waters and large river basins. It depletes soil nutrients, damages sensitive forests and farm crops and affects the diversity of ecosystems. It also eats up our monuments and statues because of the acidity. Does this sound like something we would -- that we would encourage in order to assist the citizens and the businesses of Northwest Indiana and improving our Indiana environment?

The issue, however, before us is not particle size, and I realize that IDEM is very good at measuring particle size and reporting out, and I'm not really being critical of IDEM in here. I think the real question to be addressed here is why would we violate the spirit of the Clean Water Act? We're not supposed

to maintain; we're supposed to get better at this on a continuing basis. And in my relationship with IDEM workers in the past, I have found them very supportive of the idea that we should get cleaner; we should provide a better environment for our children and for ourselves.

Successful businesses, in my experience, especially when they are in an environment where penalties are levied and exercised for squandering the public resources of water, air and soil, successful businesses push hard to manage waste, both for the sakes of their bottom line; wasting is -- is not making good use of your resources, and also, that for the preservation of that which makes commerce possible. Squandering your resources, whether they're people or your environment, and you are going to screw up your business in the long term. To increase the level of pollution of soot -- of soot is to permit -- to promote inefficiency in the face of existing technologies that allows complete combustion, and it's also postponing the day of reckoning for legacy waste cleanup. Have we not learned anything from the clean -- cleanup of U.S. Steel's channel? Pay me now or pay me later, but if you pay me later, you're going to have to pay more, and it's our grandchildren that we will be paying this bill. And

in the meantime, your children and mine, and my grandchildren will be breathing air that is purposefully dirtier than it needs to be.

Please, listen to your public. Do the right thing. Establish and enforce laws and regulations that promote parsimony, good stewardship, health, wealth and competitiveness. Indiana is part of the rust belt. I'm very concerned about jobs. But if I were a green employer, I would not want to come near a place that is belching soot, and polluting the water, and leading to a general degradation of our environment. Indiana can be green, and both her environment and her economy can thrive.

Thank you very much.

SCOTT DELONEY: Thank you. If I understood, Ms. Kroczeck, you did have written comments that you wanted to be part of the record, too; is that correct?

KAREN KROCZEK: I do.

SCOTT DELONEY: All right. Next person, Mark Coleman.

MARK COLEMAN: I'll just go ahead and stand up and talk so everybody can hear.

My name's Mark Coleman. I live in Ogden Dunes, Porter County, Indiana. I've been a resident for ten years in Northwest Indiana, and I am speaking

against the designation or redesignating Lake and Porter County to attainment status. It is unreasonable and illogical to designate Lake and Porter Counties in attainment. Just a few short months ago, our area was designated as the worst and most unhealthy place to live by at least two national -- nationally distributed magazines. This is the world's perception of our area.

The methods the state uses to determine attainment are flawed. The Congress of the United States has already spoken out unanimously against Indiana's flawed environmental policies. They voted 387 to 26 for a resolution to stop a permit issued by the state to BP for which would -- a permit which would allow more pollution into Lake Michigan. Studies show that states with stronger environmental policies consistently outperform the weaker environmental states on all economic measures. This is the conclusion of Professor Steven Meyer of MIT. Another study was done by the Southern Studies in North Carolina, and they determined that states with the best environmental records also offer the best job opportunities in climate for long-term economic development.

It -- it appears the reason that you want to redesignate Lake and Porter Counties to attainment status is to, according to the newspapers, make it okay

for expanding businesses and new businesses to add more pollution to our -- our already polluted air. And this -- this is a flawed logic. If the only reason to change the designation is to open the door for more pollution, it makes more sense just to keep the nonattainment status intact and then make sure that no more pollution comes in. I mean what we need to do is attract clean industry.

There's -- I went to the auto show, and I talked to one of the representatives -- representatives there, and he said that the only reason that fuel sales technology hasn't been widely distributed is because the oil lobbyists are preventing the technology from being widely distributed, and the biggest expansion that we're talking about in Northwest Indiana is going to be the -- the BP expansion. They want to increase their pollution, as far as we know, 40 percent more, you know, even before they begin operations, so they're telling us they want to put 40 percent more pollution into our already brown skies. There's other industries we can develop here that will provide just as good of jobs for a far longer period of time. We need sustainable -- a need a sustainable economy; we need a sustainable environment. They have to work holistically together, and the only way we're going to get there is if we start

heading that way now. We can't wait 50 years down the road. We have to start now. In 50 years, we'll be doing great if we start now, so that's what we have to do.

And that's all I have to say. Thanks.

SCOTT DELONEY: Thank you, Mr. Coleman.

The next individual I have is Ms. Lisa George?

LISA GEORGE: Hi. I'm representing all the people that breathe in Lake and Porter County. Just a few things. I don't understand why, and the -- hopefully, somebody from IDEM can answer the question: Why do we need to redesignate to pollute more? Why couldn't we just shift the amount of pollution? If you want new companies to come in and to be able to pollute, why can't you take some of the allocation that you have from U.S. Steel and other polluters, or even smaller companies, reduce the amount that they can pollute so that the new businesses can pollute? That's my question.

SCOTT DELONEY: I'd be more than happy to answer that. What I would like to do is defer back to the opening remarks that Pat had made with regard to what does it mean to be classified as maintenance. Basically, the state implementation plan that we have on

public notice right now that we are soliciting comments for is a document of two main components. The first component is a demonstration showing that since 2003, measured air quality, based on the Federal Health Based Standard for fine particles has been complied by all monitors measuring fine particle concentrations within both Lake and Porter Counties. And that's based on that fact that the area's eligible for its air quality status to be recognized for measuring air quality that meets that standard. In other words, consistent with all other counties in the country that measure air quality that meets the standard, we would like for Lake and Porter Counties to be recognized the same way.

The second component is what's referred to as a maintenance plan, okay? So we refer to being redesignated from nonattainment to attainment and classified to maintenance. What being classified as maintenance means is that the state actually has an obligation, under the Clean Air Act, to ensure that air quality is maintained. The state, by federal approval of its plan, is obligated by law to ensure that we do not re-violate the air quality standard. We have to ensure that there's no backsliding with regard to measured air quality, and the precursor emissions that contribute to fine particle concentrations cannot

increase over time. So in all of the actions that the department does within the Office of Air Quality by approving a maintenance plan, we are locking ourselves into a contract with the federal government that prohibits us from allowing emissions to grow over time, next year, the year, after all the way out to the year 2020.

Eight years from now, we are required by law to update that plan and to extend that horizon for ten more years. Eight years from now, we will be in -- we would be in Lake County again, basically committing to take the same action all the way out to the year 2030. So actually, being redesignated to attainment and classified as maintenance really does provide the same limitations with regard to growth in emissions or worsening in air quality that being designated nonattainment does. One of the key differences that I'd like to point out is, is that being designated nonattainment right now, if we measure air quality that doesn't meet the standard today, we aren't committed to taking any sort of action. As a maintenance area, if we're redesignated and classified as maintenance, if we violate the standard this year, we are committed under -- by federal law, by approving that maintenance plan, to take swift action in order to reverse that

trend and address it with whatever action is necessary at the state level to ensure that air quality is reattained as expeditiously as practicable. That means that we can't drag our feet.

So in reality, a maintenance classification provides much greater obligation to the State of Indiana to ensure that air quality is not just protected, but that all action is taken to ensure that it's maintained over time. In this instance, the plan that we have presented is to ensure that it's maintained all the way to the year 2020. Within this plan, we also commit eight years from now to extend that horizon to ensure that it's protected all the way to the year 2030.

Does that help at all?

LISA GEORGE: So what you're saying is the level of pollution will not get any worse than it is right today, is what you're saying?

SCOTT DELONEY: That is what we are committing to as part of our plan; that is correct. And I don't want to get overly technical, so if anybody wants a more detailed explanation, we're here as long as you would like for us to stay here this evening, but one of the things that we're required to do as part of this plan is establish a base here. We established the year 2005, because at the time that this was originally

drafted, 2006 was the most recent complete monitoring year complete. That meant that the three-year average at the close of 2006 was 2004 through 2006. The year straddled in the middle is 2005. So if we're going to compare what air quality was like to the time period in which we measured air quality, we chose 2005 as being the representative year, because it was in the center of the period in which -- most recent period in which we measured air quality that met the standard. So we compare 2005 with previous years to determine this improvement in air quality; is it due to decreased emissions. We made that determination. Then when we're looking at are we going to be able to continue maintenance, we compare 2005 with 2010, and we compare it with 2020 to take a look at a snapshot in time are we going to be on this same path as we proceed down the road. And we did, in fact, make that determination. We also demonstrated that that would, in fact, occur based on chemical modeling that's done in conjunction with our neighboring states with the Lake Michigan Air Directors Consortium.

Now, every year we develop an emissions inventory and we collect emissions from all permitted sources within the state. That is our way of tracking are we maintaining this course. Then once every three

years, we develop a comprehensive emissions inventory based on data associated with our permitted entities as well as for mobile sources, automobiles, trucks; off-road sources like agricultural equipment; railroads; biogenic emissions that are emitted naturally from trees, and plants and other vegetation. That comprehensive inventory, we're obligated to develop and commit to the U.S. EPA for review and approval once every three years. Once that's complete, we're comparing it to the previous three years to determine have we seen any sort of increase that would trigger our maintenance plan to take any sort of action to make sure that what we're committing to is maintained.

So yes, in short, the answer to your question is, yes, we -- we are obligated to ensure that increased pollution associated with fine particles does not occur.

LISA GEORGE: So it wouldn't get any worse.

SCOTT DELONEY: Correct.

LISA GEORGE: Okay.

SCOTT DELONEY: And the demonstration that we have made is that it will be even better, because the improvements that we have seen today are based on control measures that have been implemented today. Some of the biggest control measures to ever be implemented to address soot, fine particles, particulate matter

actually kick in beginning next year. That's the Clean Air Interstate Rule that affects all midwest states and a number of states to the east and northeast. That is going to substantially decrease emissions from coke and major coal combustion sources that contribute to fine particle concentrations. So one of the largest improvements in fine particles across the midwest that we're going to be seeing are going to come from this Clean Air Interstate Rule, which the effective date of that is January of 2009. So not only are we already measuring air quality that meets the standard; some of the biggest control measures to be implemented to further address fine particles kick in in the near future, so we are going to see even further improvements over time. That's reflected in modeling that the U.S. EPA did, association -- associated with their rules, and it is also reflected in the modeling that we have conducted in conjunction with our neighboring states.

LISA GEORGE: And if you do not -- if it is not redesignated as attainment status, the pollution won't get -- I mean there won't be less pollution? Why -- why the change? I mean if it's been getting better, why do you have to change the designation?

SCOTT DELONEY: The reason that the designation is -- is it an absolute necessity to

redesignate the area? No. But the state has to submit a state implementation plan to the U.S. EPA in conjunction with its designation as a nonattainment area. We have two choices. We either submit a demonstration as to how the area is going to attain the standard by its deadline, or we submit a SIP demonstrating that it's already complied with the standard based on measured air quality. Well, it doesn't make a lot of sense for us to submit a state implementation plan to EPA to comply with the Clean Air Act mandate that is theoretical in nature that says, well, this is how we're going to meet the standard when we already have measured air quality that demonstrates we've met the standard. So we have to decide which path are we going to take in order to submit a SIP within three years of the designation that demonstrates that the area will comply with the standard that it's been in compliance with since 2003. So this is the form of the state implementation plan that we decided to submit.

LISA GEORGE: Thank you.

SCOTT DELONEY: You're welcome.

LISA GEORGE: Who does the testing?

SCOTT DELONEY: The Department of Environmental Management conducts the air quality monitoring for the area; however, that is overseen by

the United States Environmental Protection Agency.

Ma'am, did you have something that was pressing?

KARIN KIRULAS: I just have a question on that, though. Let's say that you find that the particles are more than they should be. What specifically do you do? Do you tell U.S. Steel to, you know, shut down for a couple weeks, or I mean --

SCOTT DELONEY: Okay. I can -- I can answer that question. Is it -- is it okay if I go ahead and answer that question?

LISA GEORGE: Yes. Yeah, yeah.

SCOTT DELONEY: Okay. Part of the maintenance plan, if EPA approves the maintenance plan for this area and federal action would then be taken, EPA would propose to improve the plan; they would solicit public comment. Based on that comment, they would decide whether to approve it. If they approve the plan, it becomes effective. Now, that's like a contract with the state in terms of what it is that we're required to do associated with that maintenance classification.

The maintenance plan contains two triggers which Pat had referred to. One of those triggers is what's referred to as -- as a warning -- or action level

trigger. Therefore, if we were to measure air quality that no longer meets the standard, we are required to first conduct a detailed study to determine was this, in fact, a violation of the standard, why did the violation occur, what contributed to this violation occurring, and we have to take swift regulatory action to ensure that the area complies with the standard within a time frame that the U.S. EPA determines to be based on as expeditious as practicable. That doesn't mean we have three years. It doesn't mean that we have five years from the date of a redesignation -- of a designation like we have with the original designation, nonattainment designation. That means that we have to demonstrate that we are taking swift action to ensure that the control measures necessary to reattain the standard are implemented as quickly as possible. So that is what we have to do.

Now, in making that determination, when I mentioned that we conduct a study to determine how it is that we re-violated, why we re-violated, part of that is to determine what is it -- what regulatory effort is necessary on our part in order to reattain compliance with the standard. What that regulatory effort will consist of is impossible to identify at this point in time. The reason is, is that number one, we don't

anticipate re-violating the standard. Number two, if it were unexpectedly to occur in the future, it could occur 17 years from now. Well, 17 years from now, we don't know what type of control mechanism would be most cost effective in order to address the standard. Automobiles continue to improve, controls for industries, fuels -- fuel oils, coal, everything is getting -- the technology in operation efficiencies and improvements are in increasing over time. So it's -- I can't say what action we would take, although our plan lies -- lays out a series of exemplified control mechanisms that we would consider at that point in time if unexpectedly, we were required to look at it.

However, we make it very clear we would work with the community, meaning all of those that are interested in participating in this meeting tonight help us to determine what would be most effective, what would be most timely, most cost effective and most desirable on behalf of the community for us to proceed with in order to reverse that trend.

I'm sorry, Ms. George. Did you have further comments or questions?

LISA GEORGE: Just another comment is that I don't -- I don't trust the numbers that you guys have. I live here, I breathe the air, I smell it. I don't

think it's healthy, no matter what your numbers say, no matter what EPA says. There are too many people I know dying of cancer that it's just not -- I mean it's a hot spot for cancer here, and there's a reason why.

SCOTT DELONEY: Thank you. And that does -- that wraps up your comments?

LISA GEORGE: Uh-huh.

SCOTT DELONEY: Okay. Thank you. The next -- and, ma'am, did you have any other comments? I'm sorry. We do need your name to make sure that --

KAREN KIRULAS: Karen, K-a-r-i-n
K-i-r-u-l-a-s.

SCOTT DELONEY: Thank you. And then the last comment card I have this evening is Mr. Mark Strimbu?

MARK STRIMBU: I just have a couple of general comments related to the documents that you have and -- or matters of maybe seeking some clarification in your --

SCOTT DELONEY: If you wouldn't mind maybe just sitting at the front table for a moment; that way she'll be able to make sure that your comments are entered properly.

MARK STRIMBU: As I stated, these are basically to assist IDEM with maybe making some clarifications in their documents as they move forward

in their edits and revisions to it. The first comment I have is on Page 7, where it refers to the design value. It's at the top of the page. It refers to the air quality and design value for the area is the highest, the design value among all sites in the area. I think that might stand some clarifications to it if you're talking about if that is Lake and Porter County only since we're addressing specifically Lake and Porter County as opposed to the entire area that's shown in Figure 3.1?

SCOTT DELONEY: That is correct. It is solely representative of Lake and Porter Counties.

MARK STRIMBU: Okay. And on page -- on Page 23, Section 3.4 where it talks about quality assurance, it says IDEM's quality assured all data shown in the tables above. One of the tables above shows information from out-of-state monitors. I was just wondering if that statement is correct that you have gone through and quality assured the other states' data, or whether it's more like I would suspect, that you're responsible for your own data in the State of Indiana, so a clarification.

SCOTT DELONEY: We can provide that clarification, and of course, then U.S. EPA, it says then quality assuring that for us as well as what's

submitted by other states, but, yes, thank you; we'll provide that clarification.

MARK STRIMBU: And that's the extent of my comments.

SCOTT DELONEY: Okay. Thank you. Anybody else wish to speak? Sir?

JIM ALEXANDER: I didn't fill out a card.

SCOTT DELONEY: That's okay. If you can just make sure that the recorder gets your name.

JIM ALEXANDER: Yeah, My name is Jim Alexander, and I'm the air compliance manager, U.S. Steel, Gary Works, and I just want to make a couple comments, maybe -- maybe to you since you mentioned our company.

Maybe a good corollary might be the course particulate matter regulations, PM10. You know, the courser particles have been regulated for a while, which we are in attainment of. There's maintenance plans in place that if our company is found culpable in exceedence of that, we have to submit a 25 percent source wide reduction of our particulate matter within 180 days. So kind of in answer to your question, the answer to your question is -- is yes.

KARIN KIRULAS: But 180 days to be over polluting is --

JIM ALEXANDER: No. We're talking about a violation of the standard.

KARIN KIRULAS: But I mean -- but even still, what you're telling us is that -- is that, you know, we'll have a commission, and we'll look at it and, you know, within three years, we'll almost -- we'll have an answer. Well, this is --

JIM ALEXANDER: We're not talking three years; we're talking 180 days.

KARIN KIRULAS: It's still a long time.

JIM ALEXANDER: And the rule states that those will be written into our permit, so those are permanent reductions. Now, what you're talking about is overpolluting and causing an episode in this area. There's other rules that cover that --

SCOTT DELONEY: Correct.

JIM ALEXANDER: -- okay, that calls for more immediate action. But if we're talking about the standard for -- for PM10 is 150. If we cause an exceedence of that, okay, 151 and we're culpable, there's a rule that strikes directly at -- at that source, forces those reductions. So the position of U.S. Steel on this is that there's regulations in place that allow IDEM to seek attainment for counties that are in attainment of the Clean Air Act and of the standards.

And these standards had went through a lot of scientific review. And I -- I sympathize with -- with the people that breathe it; it's me and my family, also, and I know the damage that it causes. But these standards were set by scientists to designate healthy air. And then it's IDEM's job to regulate industry and point sources, and area sources and mobile sources to get us into attainment. Now, we believe that 35, or in this case, the standard 15 on an annual basis, it is too high, and what we need to do is to get that standard lower from 15 lower. Not to attack, I believe, redesignation of the area.

One other point I want to make is that if we do redesignate, not one limit at Gary Works is relaxed. It doesn't allow us to pollute more. It does change, in some cases, new source review for new and modified sources, but in some cases, like Scott pointed out, it makes it more -- more difficult for us to modify or add, because you have to stay in attainment of the standards. You have to do modeling. And in cases where your modification to your source would model in exceedence, you just can't do it. If you're nonattainment, there are ways around that, because you already have dirty air. You do have to get offsets, but sometimes offsets are bought and not really real reductions or at least

not perceived as real. So I guess that's my comments. I'm not really here to answer questions, but I will.

SCOTT DELONEY: Mr. Coleman?

MARK COLEMAN: I was just going to say it won't allow you to raise pollution with your existing facility, but if you expand, you will be able to expand --

JIM ALEXANDER: It may -- not the changes. Not the changes when you redesignate. It does change new source review, you know, new permitting, okay? But in some cases, and that would be a new or modified source out at Gary Works --

MARK COLEMAN: It would allow you to expand --

JIM ALEXANDER: No. No, it doesn't allow us to get out of new source review. In fact, in some cases, it makes it more stringent, because we cannot undertake a project that would endanger attainment, okay? If -- if we are in nonattainment, all we have to do is sign offsets for those, because we already have dirty air. So it doesn't change any limits, and it -- and it doesn't get us out of new source review. It doesn't mean we can all of a sudden start building and polluting more. It means really just the opposite, because if we endanger that, our project can't move

forward, and the rest of our source could be affected. Okay? I'm not really the expert on it, so, you know, I'm going to kind of stop there.

SCOTT DELONEY: I did want to -- I did want to make one clarification, too, that is worthwhile. Fine particles are -- are scientifically rather complex. In fact, some of the top scientists across the country have been trying to get their arms around one of the elements that Ms. Kroczeck touched on, which is organic carbon. There may -- fine particles are made up of solids as well as liquids. There are many contributing pollutants that -- that result in the formation, and one of the things that's most important to understand about fine particles as it relates to some of the concerns we've heard tonight are that it is a regional pollutant very similar in nature to ozone, although fine particles are a -- based on the size of the particulate matter, they're not at all like coarse particles. Coarse particles do not travel far. Concentrations are usually higher closer to where they are emitted.

Fine particles, we monitor a network that's located throughout the state; we have a number of what are referred to as background monitors. So in other words, they identify what the background concentrations coming into counties like Lake are, representative of

what would be measured in Jasper or Newton Counties. On an average, comparing our background monitors to what we're measuring in urban areas, 97 percent of the fine particle mass is attributed to background levels, not based on what's being contributed by sources within the area. What that level is referred to is urban excess, meaning within this urban area that we measure air quality for, less than three percent of the total measured fine particles are actually attributable to emission sources within the area. That's all emission sources: diesel engines, coal combustion, automobiles. So with that --

MARK COLEMAN: Are these fine particles, or what are these (indicating)?

SCOTT DELONEY: What you're looking at there are not necessarily fine particles.

MARK COLEMAN: Well, they go miles and miles all the way from the southern tip of Lake Michigan; you can see it when you're in Chicago in a high-rise; you can see it going all the way as far as the eye can see. So if they're not fine particles --

SCOTT DELONEY: Well, they're -- they're -- what fine particles represent is microns of 2.5 in size or less --

MARK COLEMAN: That means nothing to me.

SCOTT DELONEY: I understand. But what I did want to try to get at is, is that for particulate matter, you have total suspended particulates, you have coarse particulates, which are ten microns in size, and then you have these fine particles. The fine particles standard is just one of several criteria pollutants defined and controlled by the Clean Air Act, okay? So we have different standards that have to be met for particulate matter. We have standards that have to be met for ozone, lead, carbon monoxide, and other pollutants. We also have air toxins and -- and pollutants like mercury that are regulated through other means and mechanisms as well. So when you look at what comes out of a stack at a given industrial source, you're looking at a complex mixture of a variety of regulated pollutants. It's not just fine particles.

MARK COLEMAN: You mentioned the Clean Air Act a few times, and I know the Clean Water Act had a stipulation for eliminating all pollution going into the water at some certain point, and I was wondering, is there anything in the Clean Air Act to eliminate all emissions to your knowledge?

SCOTT DELONEY: No. That -- that is not at all a component of the Clean Air Act. I think that as environmental regulators, we'd all like to strive for a

goal where zero, you know, emission levels are, you know, to be achieved, but, you know, I think at the time that the Clean Air Act was last amended by Congress in 1990, it was recognized that that's not an achievable goal just based on the energy needs of this country alone.

MARK COLEMAN: But it's -- it is possible.

SCOTT DELONEY: That is something that would -- I think would be more appropriate for the U.S. Environmental Protection Agency to respond to, because obviously, a national control program tied to an international control program would be necessary especially based on, you know, the impact of transport.

With that, I did want to make sure everybody knows Pat and I are going to remain here as long as you'd like us to be to answer any additional questions you have. Are there any additional questions specifically relevant to the redesignation request and maintenance plan? If not, I was going to turn it over to Pat so she could close this, and we could let the recorder head her way for the evening for other plans.

Ms. George?

LISA GEORGE: Just for the record, I want to make sure that I'm understanding this clearly and that I have your word that the total overall emissions allowed

in Lake and Porter County will not be greater than they are today.

SCOTT DELONEY: Correct.

LISA GEORGE: That's correct.

SCOTT DELONEY: That is the commitment that's made as part of the submittal.

MARK COLEMAN: So you're saying BP's expansion will not increase any air pollution in Lake and Porter County.

SCOTT DELONEY: That's not what we're saying. What we're saying is that total emissions contributing to fine particle concentrations will not increase. What that means is, is that if we allow --

LISA GEORGE: Well, I don't know what fine particles --

SCOTT DELONEY: -- if we allow increases for fine particle emissions to occur here, we are required to find decreases that would offset those.

KARIN KIRULAS: Decreases where?

SCOTT DELONEY: Decreases either at that source, next to that source --

KARIN KIRULAS: But here in Lake County still.

SCOTT DELONEY: Correct. Within the boundaries of the defined area, which is within Lake and

Porter Counties. Correct. So that the overall net impact is zero increase. But again, I just want to make sure it's clear we're only talking in reference to fine particle precursors, and that is specifically oxides of nitrogen, sulfur dioxide and direct fine particle emissions.

KARIN KIRULAS: Well, how about the larger particles; can they increase?

SCOTT DELONEY: Those are governed under another plan that was approved when the area met that standard, so there already is a maintenance plan in place that would prohibit any growth in the course particles for this area. We went through that process back in the early nineties when the area was formally redesignated under that standard after measuring air quality that met the standard. So we've been operating under a maintenance plan that includes that commitment for quite some time.

PAT DANIEL: Are there any additional public comments for the record?

KARIN KIRULAS: I just have another question. I mean you're saying that -- that everything is -- nothing's going to change, but then you want to increase it as -- as a regular standard. I --

SCOTT DELONEY: No. We can't -- we can't

increase the standard. The federal government --

KARIN KIRULAS: Not the standard, but you want to -- you want to -- wait a minute.

SCOTT DELONEY: The federal government establishes the standard that it deems to be protective of public health. That's 15.1. We are required to comply with that standard. We've complied with that standard since 2003. What we're requesting is, is that we be recognized for complying with that standard. In approving our request, we're committing to ensure that that standard is not exceeded again in the future, and that emissions that would contribute to concentrations tied to that standard do not increase over time either.

KARIN KIRULAS: Okay. Then -- then it says -- it says here in the Post-Tribune: If EPA accepts Indiana's petition, that could loosen emissions restrictions on businesses that want to open or expand in the area. Is that right; it loosens the restrictions?

SCOTT DELONEY: No. The same restrictions apply for a maintenance area when it comes to the state having to comply with the air quality standards itself.

KARIN KIRULAS: So the Post Tribune got it all wrong?

SCOTT DELONEY: I'm not saying that. I'm not

responsible for what you're reading. What I'm saying is -- is that by approving a maintenance plan, the U.S. EPA is -- is setting a -- a rule that the state has to comply to. What that rule includes is, is that, one, we have to ensure that air quality is maintained; two, that emissions do not increase over time, and three, if there's an unexpected backsliding with regard to air quality in the area, we are required to take swift regulatory action. Now, that does not mean that the agency cannot continue to issue permitting actions to sources within this county. It's just that the agency also must ensure that none of those actions result in any net increase in emissions or would adversely affect air quality to where we would backslide in any shape or form.

And we -- if there are other topics that you wish to discuss or you want clarification on, like I said, we will remain here, but if it's okay with you, we were planning to close the hearing, and if there's anything else that you would like to discuss, we'll be here as long as you would like for us to be.

PAT DANIEL: In the absence of any further comments, these proceedings are hereby concluded. This hearing is adjourned.

* * * * *

PLEASE PRINT

Hearing Location: IVY TECH Date: 2/27/08
 Name: MARK COLEMAN
 Title: _____ Phone: 510-7092
 Address: 9 LOCUST PLACE Ogden Dunes IN 46366
 Zipcode: 46368
 Representing what interest? HUMAN BEINGS

Do you wish to present oral testimony? Yes X No _____
 Has written testimony been submitted? Yes X No _____
 Will written testimony be submitted? Yes _____ No _____
 Do you wish to be informed of future or final actions in this matter? Yes X No _____

PLEASE PRINT

Hearing Location: Ivy Tech Gary Date: Feb-27
 Name: LISA GEORGE
 Title: Graphic Designer Phone: 938-5385
 Address: Gary 46403
719 N. HANCOCK STREET Zipcode: _____

Representing what interest? Jobs, air, water
manufacturing

Do you wish to present oral testimony? Yes X No _____
 Has written testimony been submitted? Yes _____ No Not yet
 Will written testimony be submitted? Yes X No _____
 Do you wish to be informed of future or final actions in this matter? Yes X No _____

PLEASE PRINT

Hearing Location: IVY TECH Date: 2/27/08
 Name: KAREN KROEGER
 Title: _____ Phone: 219-834-1881
 Address: 8212 Madison
MUNSTER IN Zipcode: 46321
 Representing what interest? _____

Do you wish to present oral testimony? Yes ✓ No _____
 Has written testimony been submitted? Yes ✓ No _____
 Will written testimony be submitted? Yes ✓ No _____
 Do you wish to be informed of future or final actions in this matter? Yes ✓ No _____

PLEASE PRINT

Hearing Location: Gary (Ivy Tech) Date: 2/27/2008
 Name: Mark Strimbu
 Title: Program Leader, Air Programs Phone: 219-647-5269
 Address: 801 E. 86th. Ave.
Merrillville IN Zipcode: _____

Representing what interest? Ni Source

Do you wish to present oral testimony? Yes X No _____
 Has written testimony been submitted? Yes _____ No X
 Will written testimony be submitted? Yes _____ No X
 Do you wish to be informed of future or final actions in this matter? Yes X No _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Page _____

PUBLIC HEARING COMMENT FORM

Title of Public Hearing: Redesignation Petition & Maint. Plan Location: GARY IVY Tech Date: 2/27/08

Name: KAREN KROCZEK Organization/Company: _____

Address: 8212 MADISON AVE Phone Number: 219 836 1851
MUNSTER IN 46321

If you would like to submit comments, please do so on this form, or you may attach them to this document.

2/27/08

Gentlemen,

I come before you this evening without the depth of research this topic of redesignation deserves however I've been busy with personal matters. I appreciate your willingness to hold a public hearing to hear our opinions regarding the air we breathe.

The mission of IDEM is to encourage and aid businesses and citizens in protecting and improving Indiana's environment (cite public announcement of this meeting).

I would therefore ask how permitting the emission of larger quantities of toxic soot would accomplish this mission. If EPA grants your request, is this not just what will happen?

In searching for information on soot, I found a recent article from Argonne National Laboratory APS research group that describes a new technology that allows examination of this material while it is in a nano state (way too small to see). This DOE facility warns of the health, environmental and aesthetics risks of soot.

Soot particles are created when hydrocarbons are not completely burned. (incomplete combustion) Otherwise known in commercial applications as carbon black, soot creates health problems and may contribute to thousands of premature deaths each year according to the US Environmental Protection Agency (your boss????)

Soot begins with the chemical growth of large benzene-based hydrocarbons which aggregate and merge from .5 nanometers to 20 to 50 nanometeers in diameter which then coagulate to form larger soot particles.

At ANY size, soot is problematic though it poses the greatest health risks in the range of 2.5 micrometers to 10 micrometers.

Health effects noted by Argonne from soot (particularly fine particles which can get deep into the lungs and cause serious health problems) include:

Increased respiratory symptoms such as irritation of the airways, coughing or difficulty breathing

Decreased lung function

Aggravated asthma

Development of chronic bronchitis

Irregular heartbeat

Nonfatal heart attacks and

Premature death in people with heart of lung disease

People with heart or lung diseases, children and older adults are most likely to be affected by particle pollution exposure. However, even if you are healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution.

In terms of environmental damage, Argonne notes the haze caused by soot which not affects even our pristine national parks. Additionally, it contributes to acidity in lakes and streams, negative nutrient balance in coastal waters and large river basins, depletes soil nutrients, damages sensitive forests and farm crops and affects the diversity of ecosystems. It also eats up statutes and monuments with acidity.

Does this sound like something that would encourage and aid businesses and citizens in protecting and improving Indiana's environment???

The issue before us is not the measurement of particle size however. The real question to be addressed is why we would violate the spirit of the Clean Air Act and allow any increase in the air pollution for this region in the name of economic improvement. Successful businesses (especially in the face of penalties for squandering the public resources of water, earth and air) push hard to manage waste both for the sake of their bottom line and for the preservation of that which makes commerce possible. To increase the level of pollution of soot allowed is to promote inefficiency in the face of existing technologies that allow complete combustion and postpone the day of reckoning for legacy waste clean up. Haven't we learned anything from the cost of cleaning up the US Steel channel mess? Pay me now or pay me (lots more) later. Meanwhile your children and mine will be breathing air purposefully dirty and our public health costs will rise.

Please gentlemen, listen to your public. Do the right thing. Establish and enforce laws and regulations that promote parsimony, good stewardship, health, wealth and competitiveness. Indiana can be green both in her environment and her economy.

KAREN KROCZEK

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219. 836-1851 (H)

219. 805-4881 (Cell)

"Thanks to the APS, we're able to observe pre-soot particles 10 times smaller than anything previously observed."

Randall Winans

Studying soot may minimize health hazards

Tiny soot particles, created when materials burn, create health problems and may contribute to thousands of premature deaths each year, according to the [U.S. Environmental Protection Agency](#).

Researchers from Argonne and [Brigham Young University](#) have used the [Advanced Photon Source \(APS\)](#) to see for the first time the birth and growth of the tiniest soot particles in a living flame.

This work promises to contribute to a comprehensive model of how soot forms and grows. Such a model may help to reduce the health hazards associated with soot production, to improve the efficiency and performance of industrial devices that rely on burning hydrocarbons and to devise efficient production processes that use soot, such as the industrial manufacture of carbon black.

Over the years, researchers have used a variety of techniques to study soot particles. But until now, it has been difficult or impossible to study the structure of particles in the 1 nanometer to 100 nanometer size range as they are formed. (A nanometer is about 1/50,000 the diameter of a human hair.) Yet this size range covers most of the initial formation and growth of soot particles.

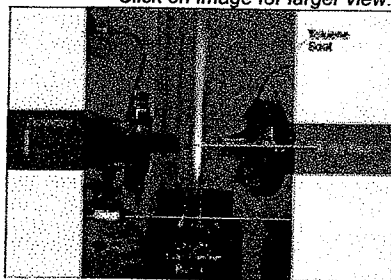
Soot originates in the incomplete combustion of hydrocarbons. Studies at other laboratories suggest that soot begins with the chemical growth of large aromatic (benzene-based) hydrocarbons to about 0.5 to 2 nanometers in diameter. This substrate or nucleus grows into an elementary soot particle about 4 nanometers in diameter and then clusters into small chains. The chains merge to produce primary particles, 20 to 50 nanometers in diameter, that coagulate to form larger soot aggregates.

This formation and growth occurs as a series of chemical and physical interactions within a flame. Thanks to the high intensity of APS X-rays, scientists have been able to study for the first time the initial distribution of soot particles as they form within the flames of such fuels as toluene and hexane.

"We've been able to observe particles between 0.8 and 15 nanometers in diameter," said Argonne chemist Randall Winans. "Thanks to the APS, we're able to observe pre-soot particles 10 times smaller than anything previously observed with a synchrotron X-ray source."

This research was funded by the [U.S. Department of Energy's Office of Basic Energy Sciences](#) and was carried out at the [Basic Energy Sciences Synchrotron Radiation Center](#) beamline at the APS.

[Click on image for larger view.](#)



Visualizing first images of soot forming in a flame may lead to advances in health and in industry.

Studying soot may minimize health hazards

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The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.

Exposure to such particles can affect both your lungs and your heart. Small particles of concern include "inhalable coarse particles" (such as those found near roadways and dusty industries), which are larger than 2.5 micrometers and smaller than 10 micrometers

in diameter, and "fine particles" (such as those found in smoke and haze), which are 2.5 micrometers in diameter and smaller.

The Clean Air Act requires EPA to set air quality standards to protect both public health and the public welfare (e.g. crops and vegetation). Particle pollution affects both.

Health Effects

Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, for example;
- decreased lung function;
- aggravated asthma;
- development of chronic bronchitis;
- irregular heartbeat;
- nonfatal heart attacks; and
- premature death in people with heart or lung disease.

People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure. However, even if you are healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution. For more information about asthma, visit www.epa.gov/asthma.

Environmental Effects

Visibility reduction

Fine particles (PM_{2.5}) are the major cause of reduced visibility (haze) in parts of the United States, including many of our treasured national parks and wilderness areas. For more information about visibility, visit www.epa.gov/visibility.

Environmental damage

Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems. More information about the effects of particle pollution and acid rain.

Aesthetic damage

Particle pollution can stain and damage stone and other materials, including culturally important objects such as statues and monuments. More information about the effects of particle pollution and acid rain.

You will need Adobe Acrobat Reader to view the Adobe PDF files on this page. See [EPA's PDF page](#) for more information about getting and using the free Acrobat Reader.

For more information on particle pollution, health and the environment, visit:

Particle Pollution and Your Health: Learn who is at risk from exposure to particle pollution, what health effects you may experience as a result of particle exposure, and simple measures you can take to reduce your risk. ([PDF](#), 2 pp, 320 KB)

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PUBLIC HEARING COMMENT FORM

Title of Public Hearing: Particulate + Soot Redesignation Location: IVY TECH Date: 2/27/08
Name: MARK Coleman Organization/Company: HUMAN BEINGS
Address: 9 LOCUST PLACE Phone Number: 219-510-7092

If you would like to submit comments, please do so on this form, or you may attach them to this document.

It is unreasonable and illogical to designate Lake and Porter Counties in "ATTAINMENT". Just a few short months ago our area was designated as the worst and most unhealthy place to live by at least 2 nationally distributed magazines. This is the world's perception of our area. ^{THE STATE} THE METHODS USED to determine "attainment" are flawed.

The Congress of the US has already spoken out unanimously against Indiana's flawed environmental policies. They voted 387-26 ~~ago~~ for a resolution to "Stop a permit issued by the state to BP ~~for~~ which would allow more pollution into Lake Michigan."

"Studies show that states with stronger environmental policies consistently outperformed the weaker environmental states on all Economic Measures. Prof. Stephen Meyer of MIT"

"States with the best environmental records also offer the best job opportunities and climate for long term economic development" Southern Studies in North Carolina -

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PUBLIC HEARING COMMENT FORM

Title of Public Hearing: _____ Location: _____ Date: _____

Name: _____ Organization/Company: _____

Address: _____ Phone Number : _____

If you would like to submit comments, please do so on this form, or you may attach them to this document.

*Therefore there ~~is~~ reason to change the designation. is to open the door
for more pollution to come.*