Appendix B:

Caroline County Ozone Advance Action Plan

Model Support Information

Appendix B1:

Caroline County Ozone Advance Action Plan

CMAQ 2007 Level 3 12 Kilometer Ozone Modeling Evaluation

OTC 2007 Level 3 Modeling

NY, NJ, VA

and

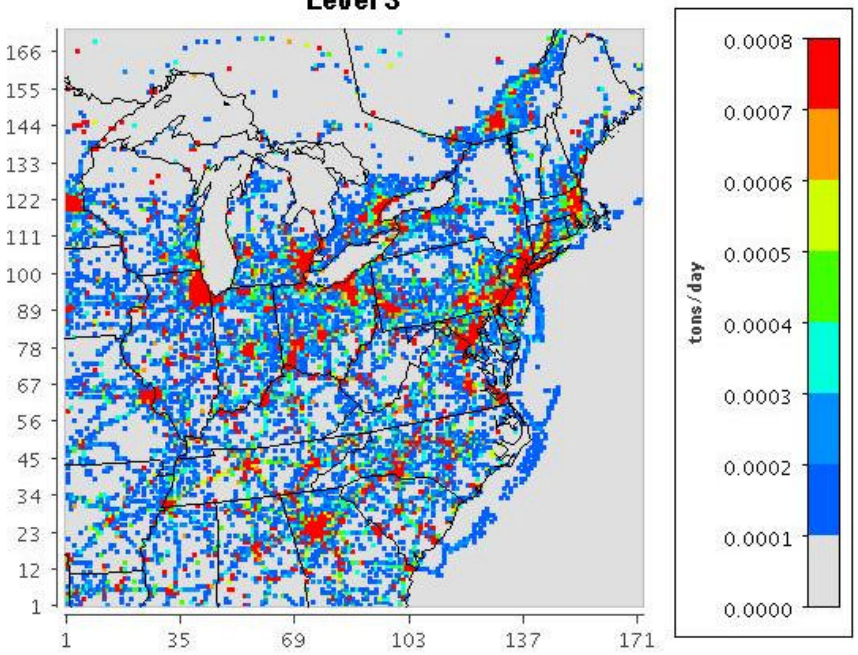
MARAMA

EMISSIONS

NOx and VOC for August 3, 2007 from each sector

Anthropogenic NOX Emissions

Level 3

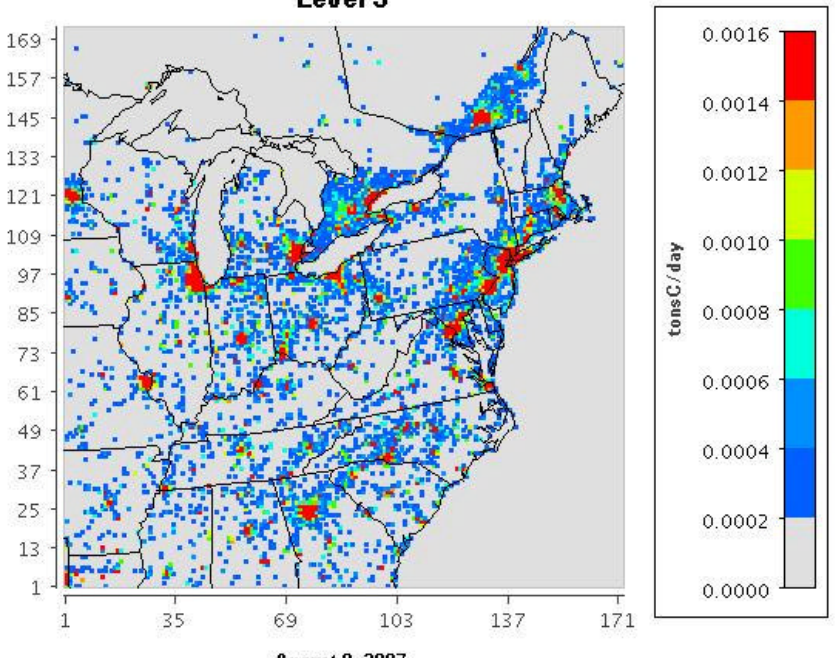


August 3, 2007

Min (105, 1) = 0.0000, Max (138, 102) = 0.0314

Anthropogenic VOC Emissions

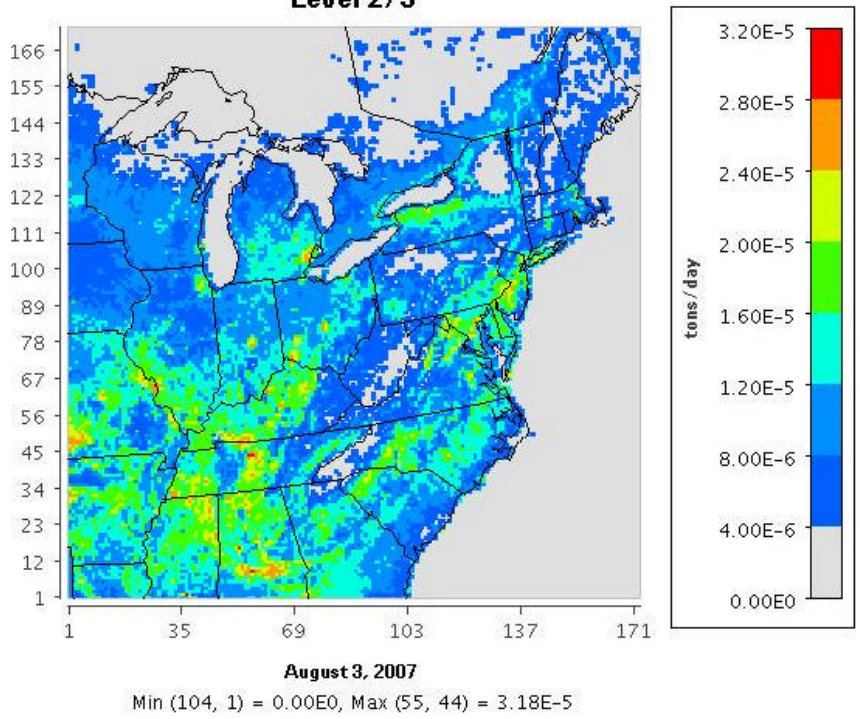
Level 3



August 3, 2007

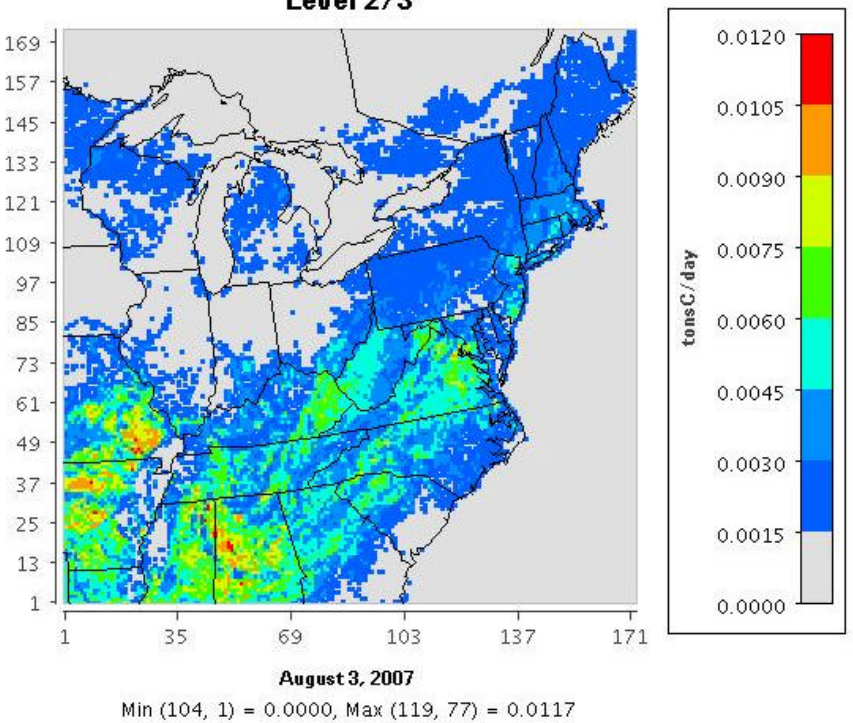
Min (105, 1) = 0.0000, Max (138, 102) = 0.0182

Biogenic NO Emissions

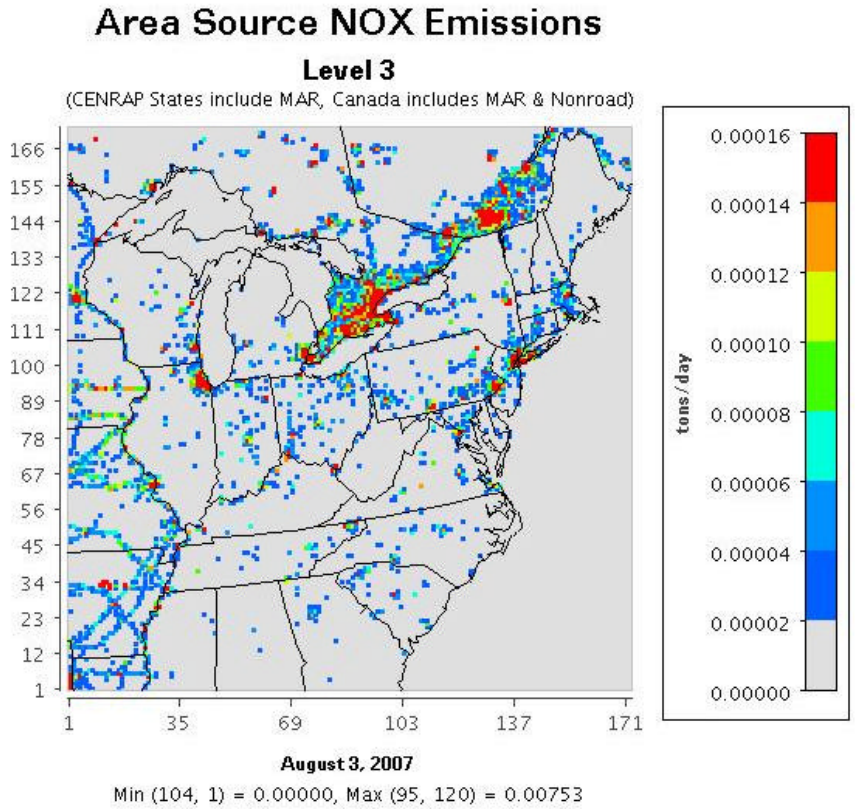


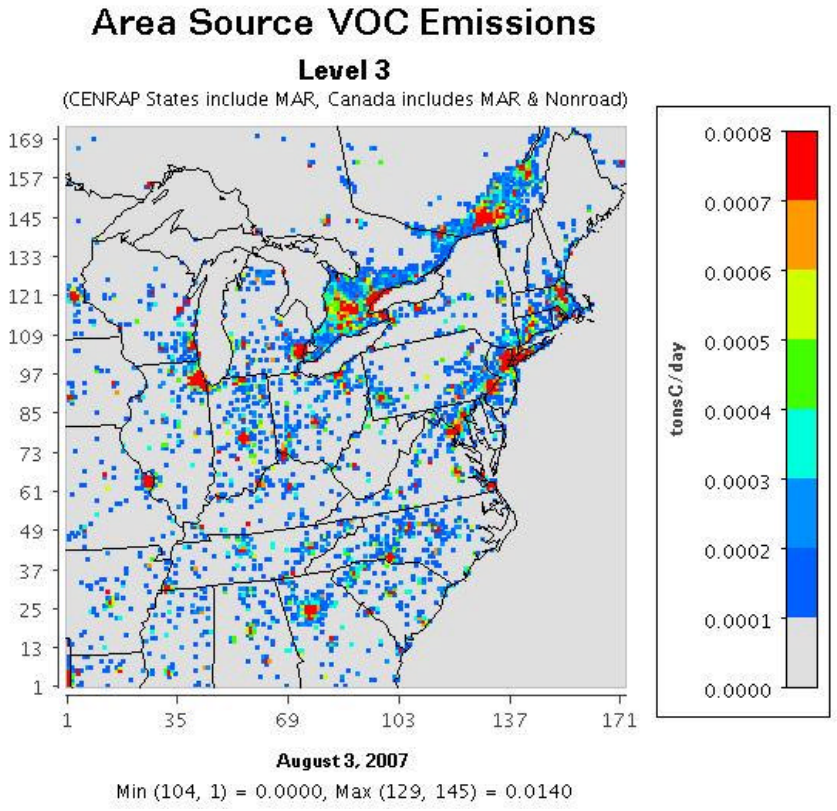
Min (104, 1) = 0.00E0, Max (55, 44) = 3.18E-5

Biogenic VOC Emissions



Min (104, 1) = 0.0000, Max (119, 77) = 0.0117

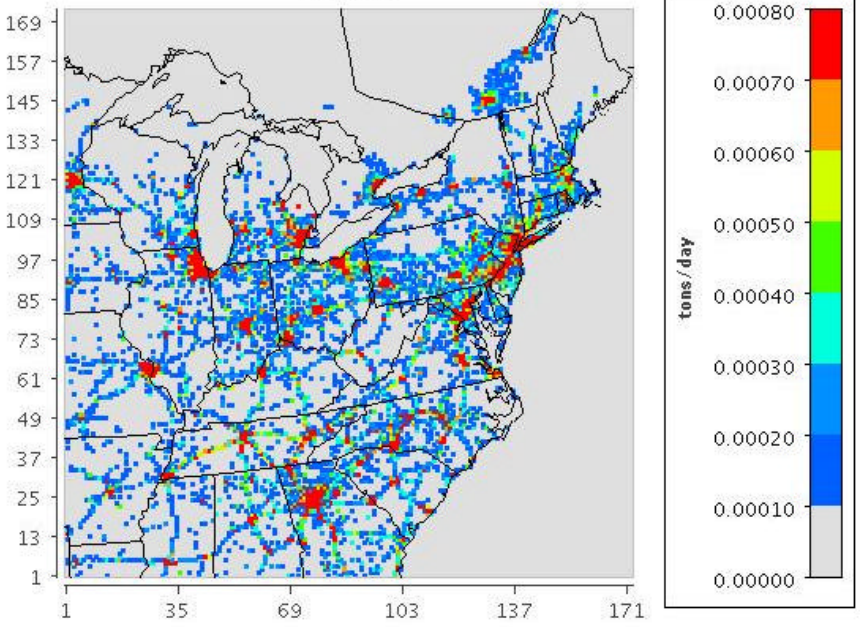




CENRAP States include MAR, Canada includes MAR and Non-road.

Mobile Source NOX Emissions

Level 3

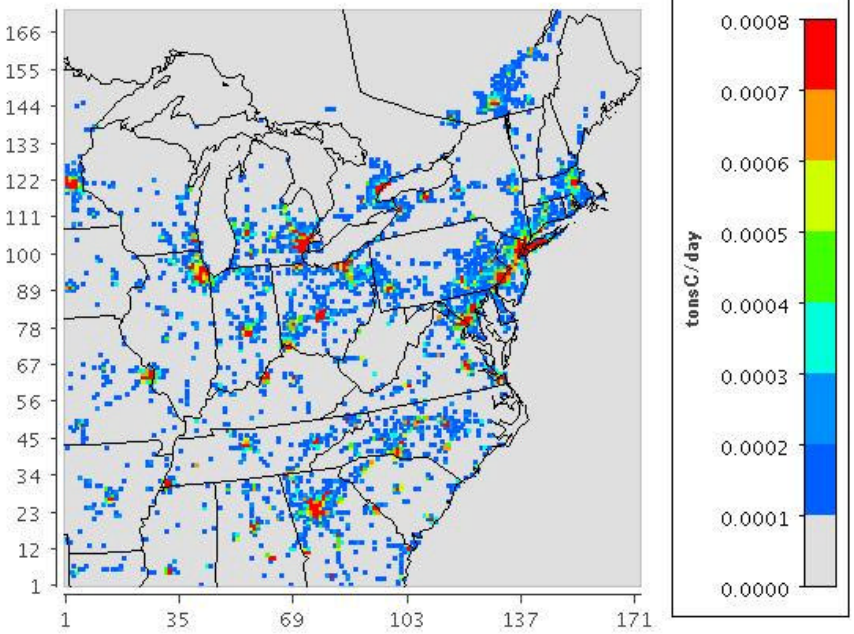


August 3, 2007

Min (104, 1) = 0.00000, Max (138, 102) = 0.00806

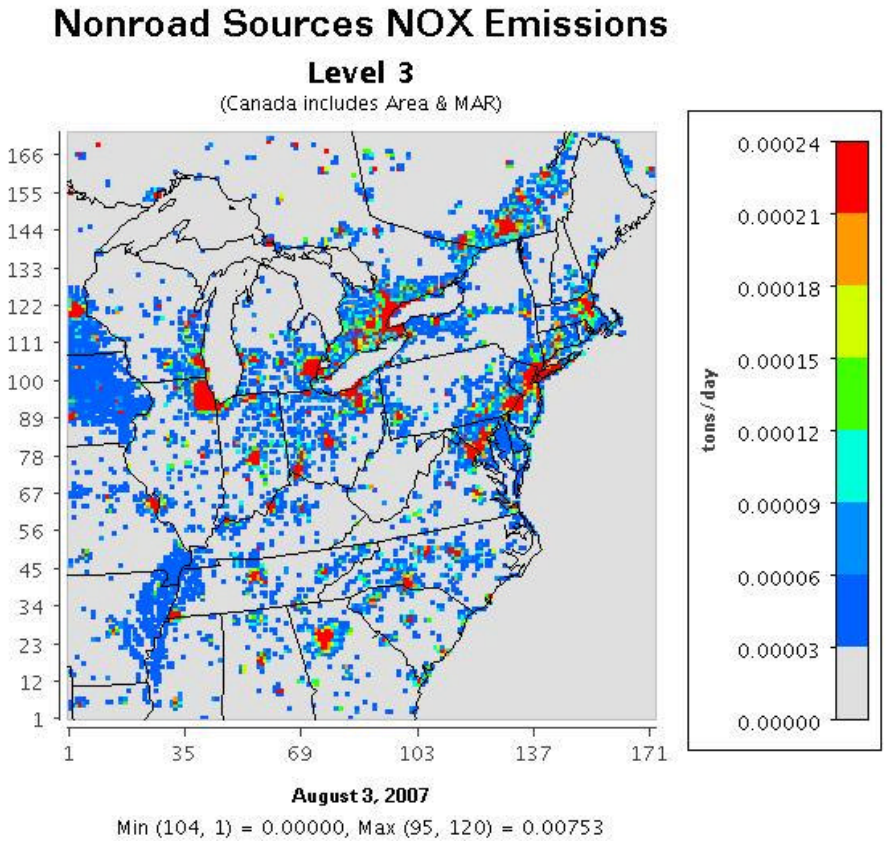
Mobile Source VOC Emissions

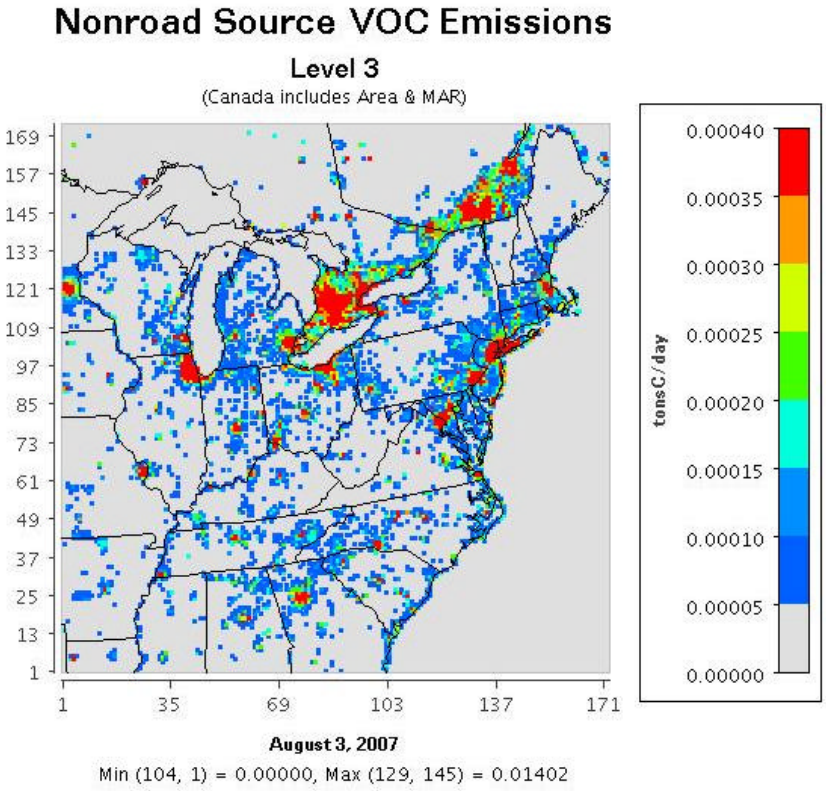
Level 3



August 3, 2007

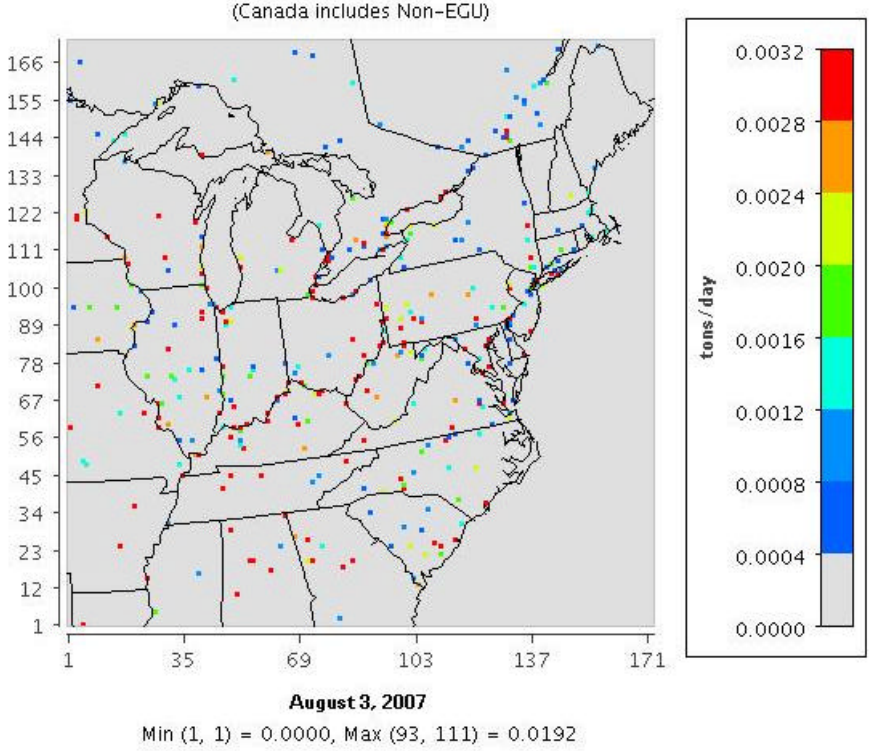
Min (104, 1) = 0.0000, Max (138, 102) = 0.0038





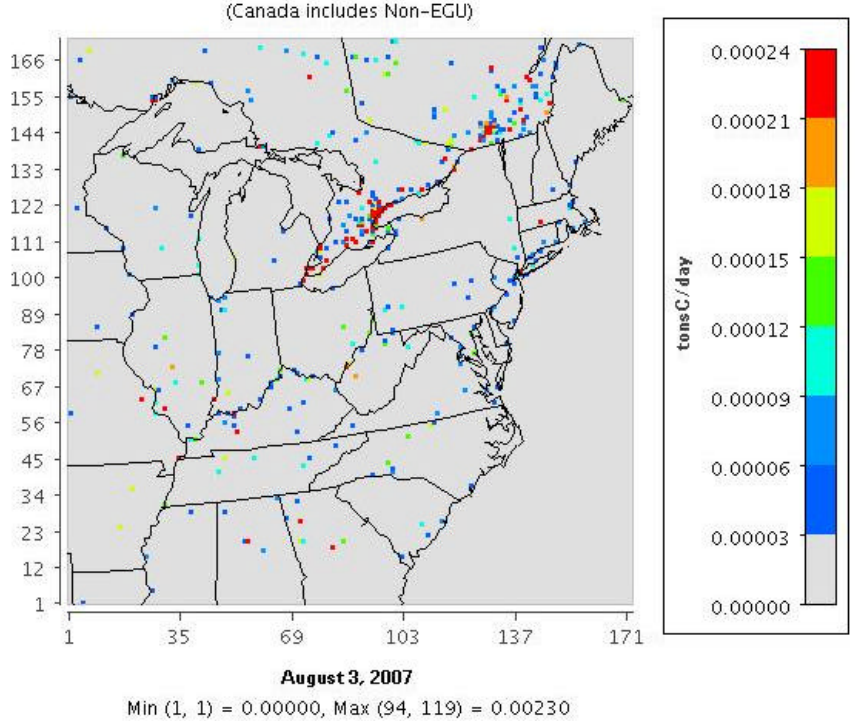
Canada includes Area and MAR.

EGU Point Source NOX Emissions



Min (1, 1) = 0.0000, Max (93, 111) = 0.0192

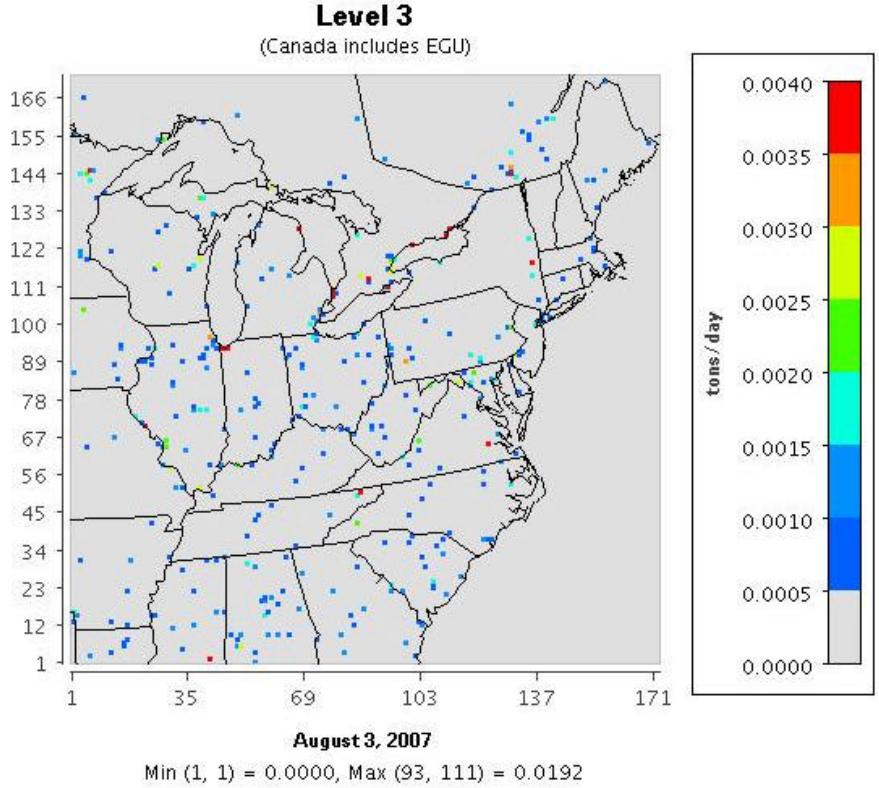
EGU Point Source VOC Emissions



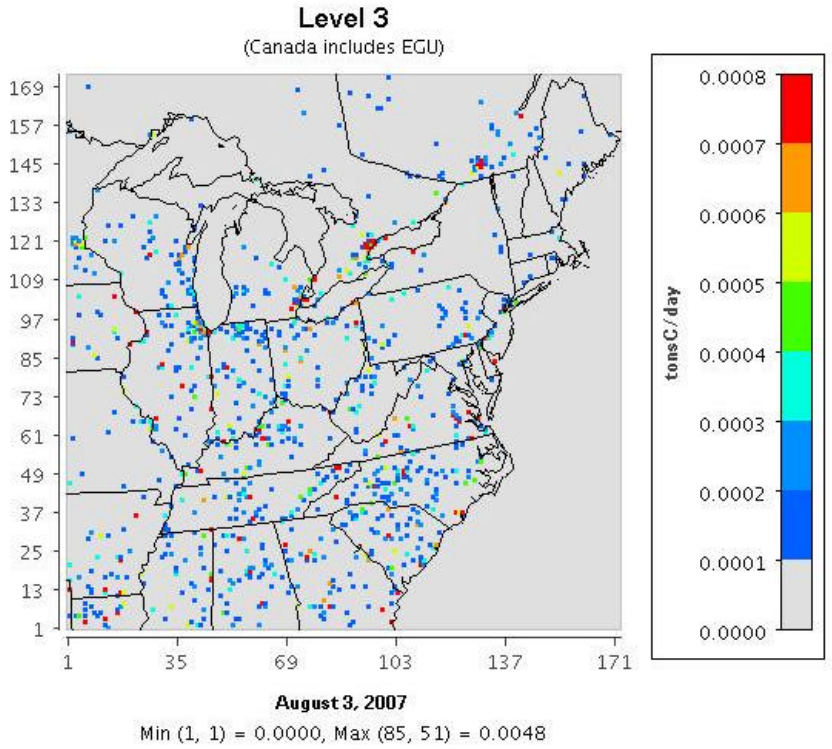
Min (1, 1) = 0.00000, Max (94, 119) = 0.00230

Canada includes Non-EGU

Non-EGU Point Source NOX Emissions

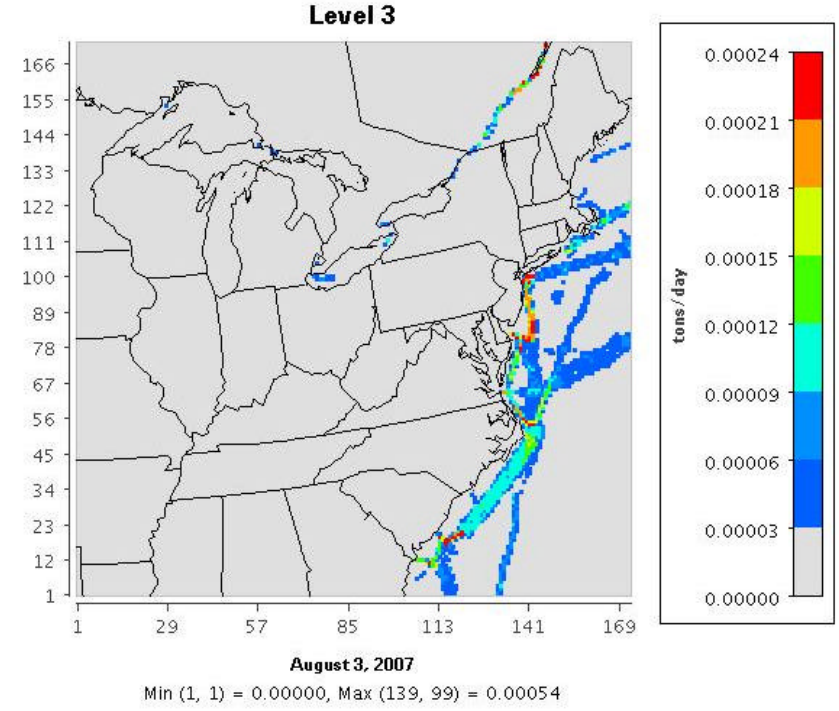


Non-EGU Point Source VOC Emissions



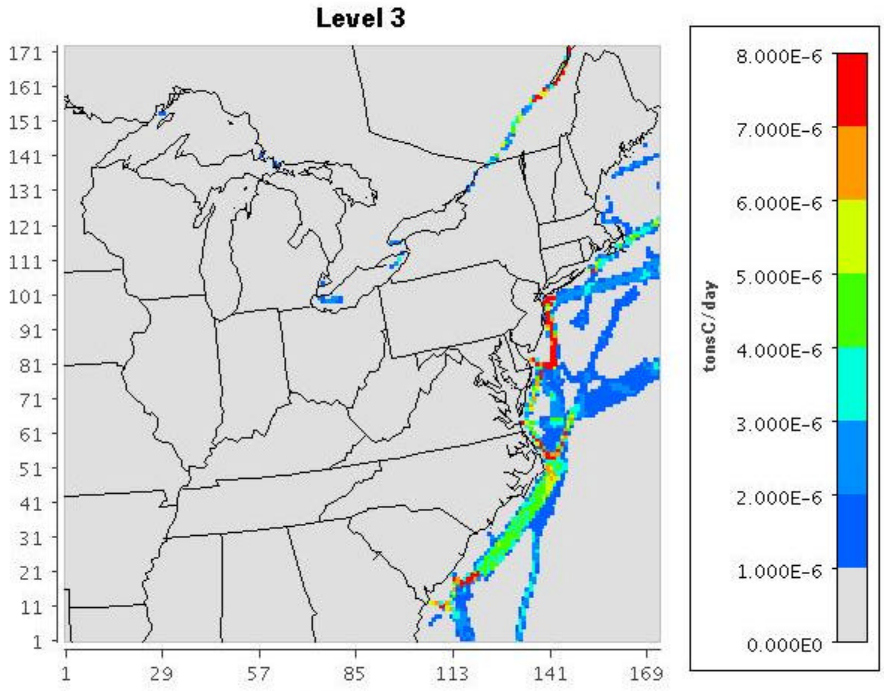
Canada includes EGU

Category 3 Marine Vessel NOX Emissions

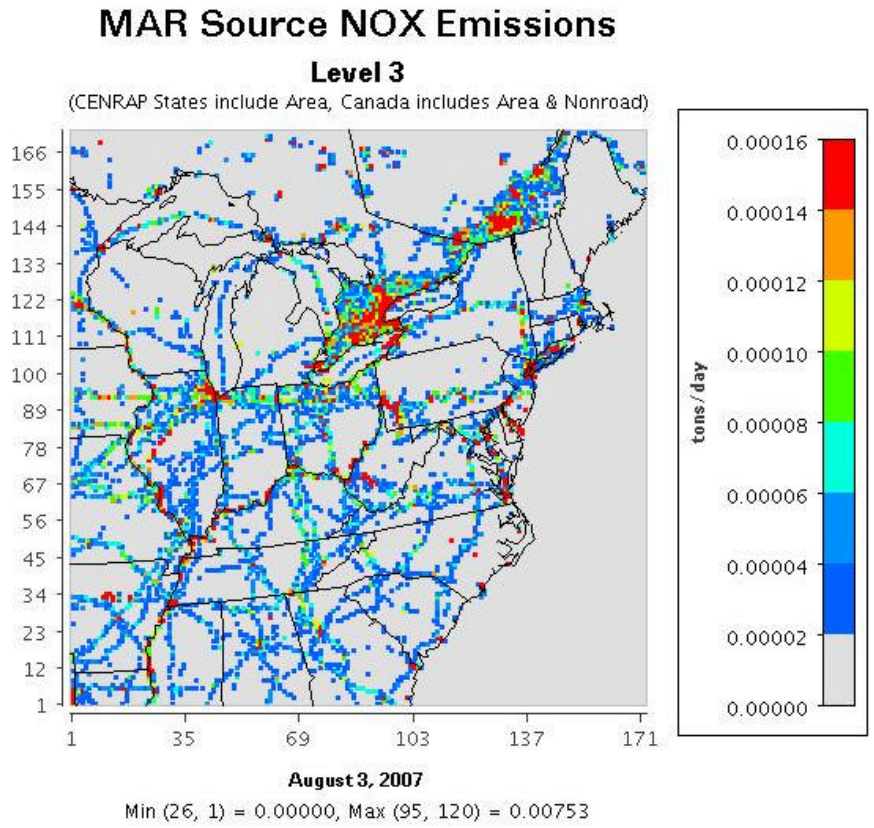


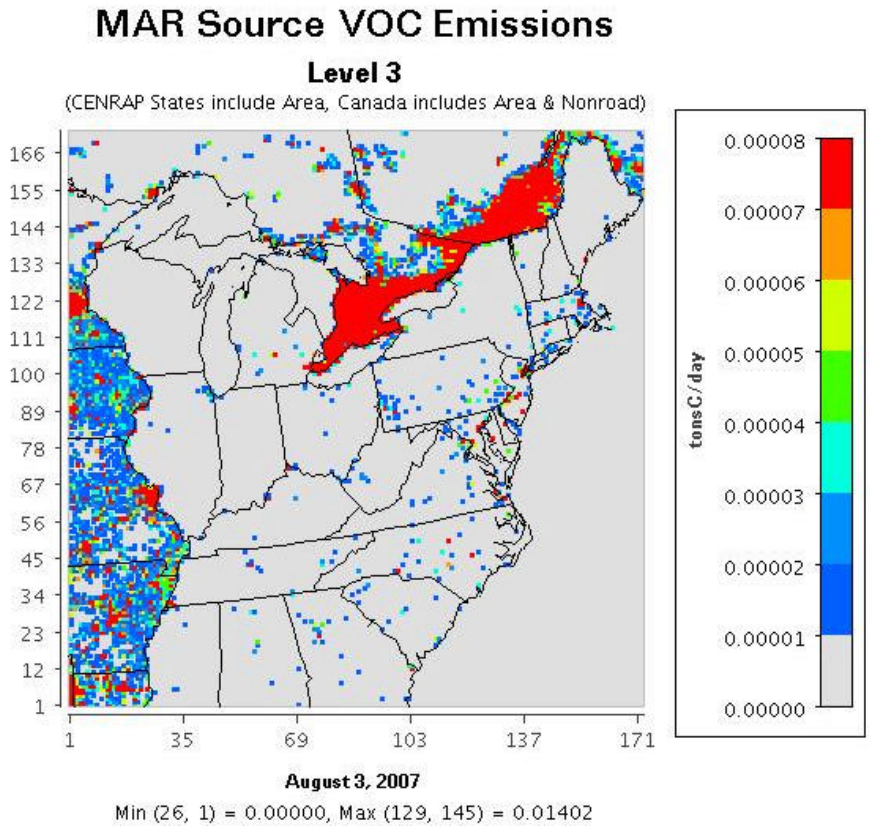
Min (1, 1) = 0.00000, Max (139, 99) = 0.00054

Category 3 Marine Vessel VOC Emissions



Min (1, 1) = 0.000E0, Max (139, 99) = 2.505E-5





CENRAP States include Area, Canada includes Area and Non-road

OTC Level 3 Modeling

- CMAQ4.71 with CB05 chemistry aero5 aerosol module.
- MARAMA/OTC Level 3 emission inventories.
- Annual simulations for 36 km U.S. Continental domain and 12 km Eastern U.S. domain
- Time-variant boundary conditions of 12 km domain using 36 km simulations.

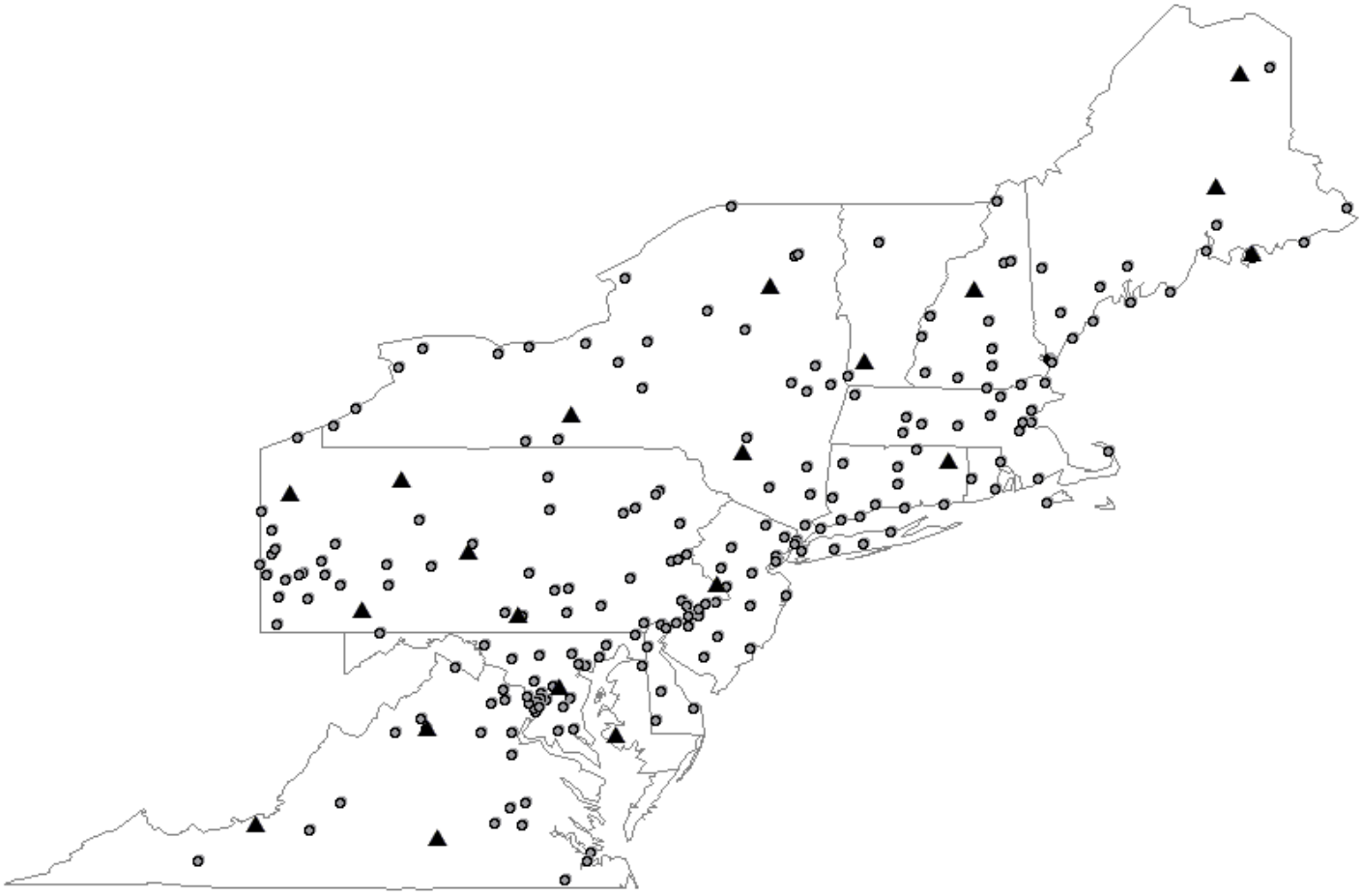
Performance evaluation of the 2007 CMAQ L3 12-km base case

Ozone

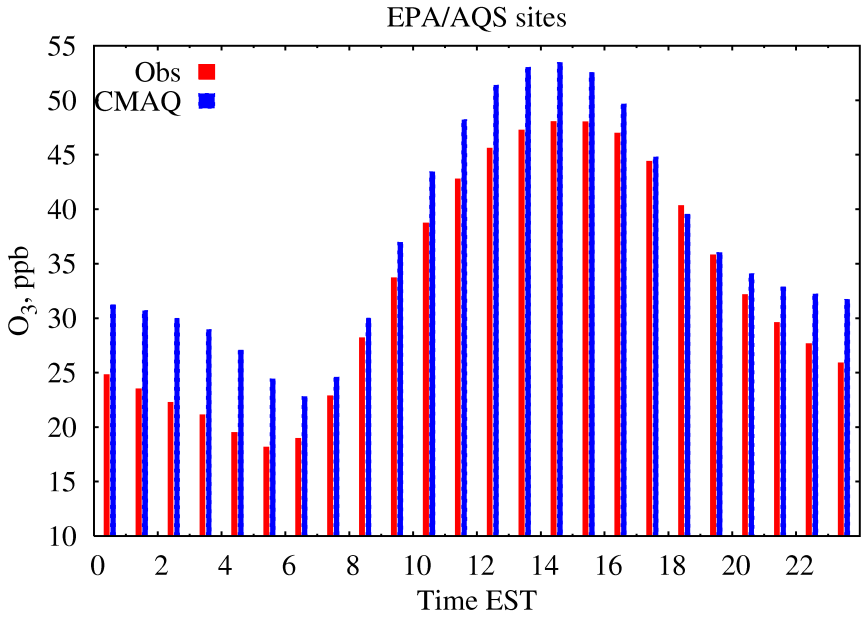
O_3 evaluation

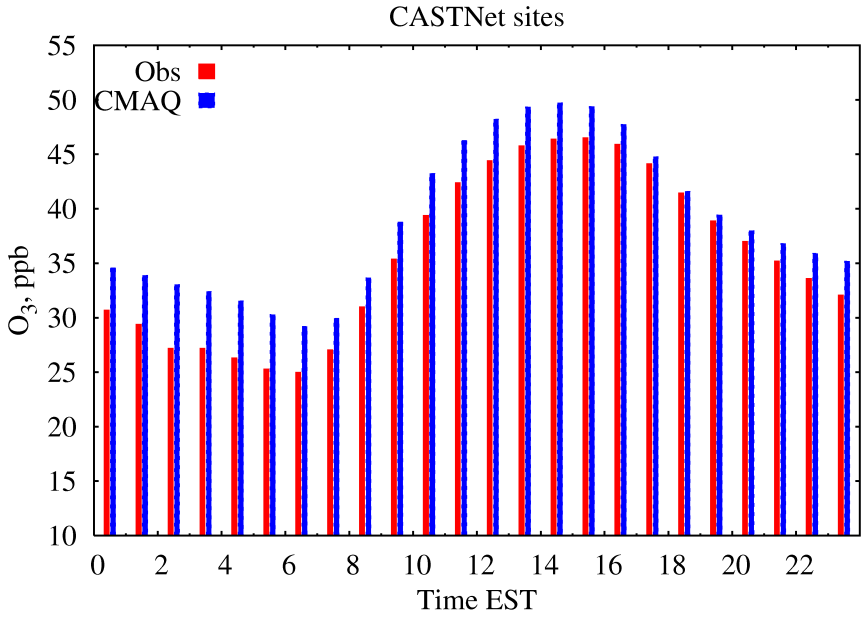
- OTR region plus all of VA
  - EPA/AQS (S/L/T), 210 sites
  - CASTNet, 20 sites
- Focus on O_3 season (April-October)
- 1-hour O_3 – diurnal variations
- Daily-maximum 8-hour O_3 – model bias and error, in space and time

Locations of potential EPA/AQS sites (circles) and CASTNet sites (triangles) across the OTR+VA region, 2007



Diurnal variations

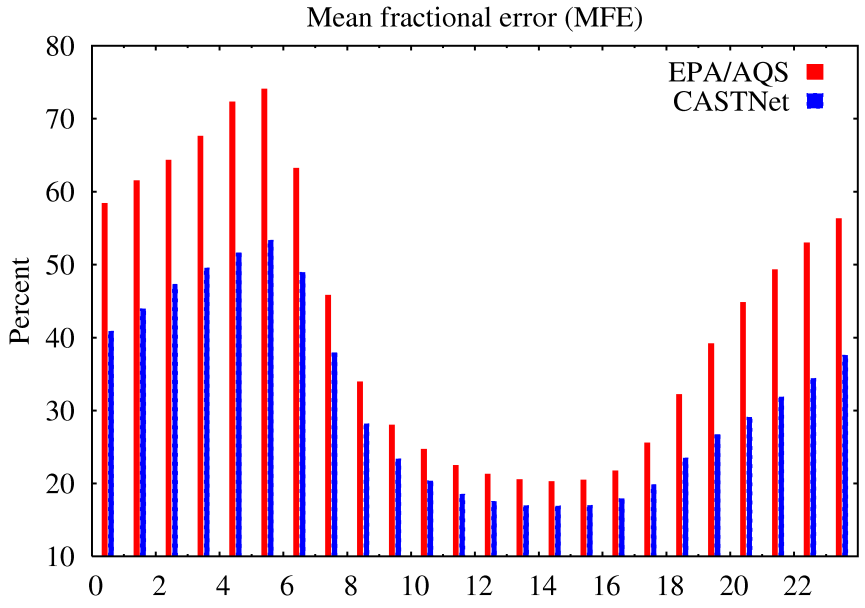


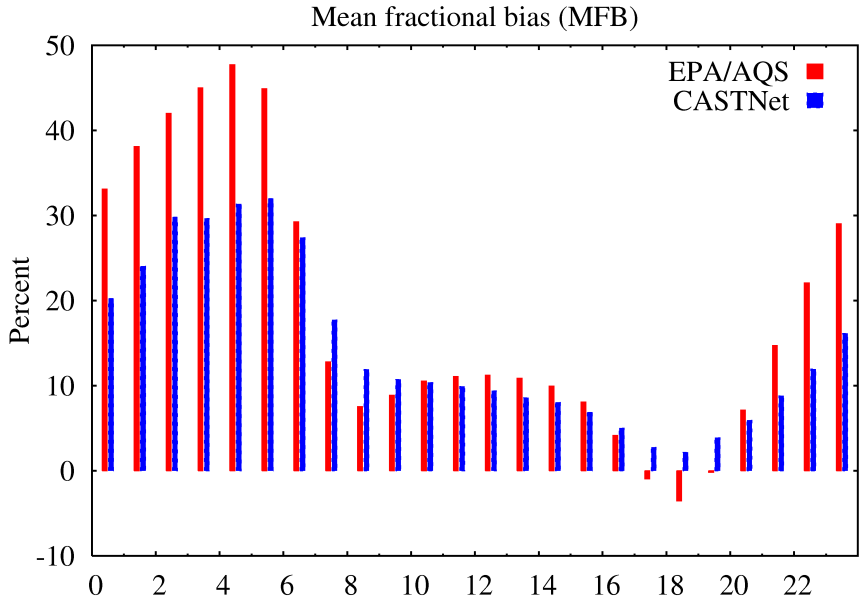


Average diurnal variation of O_3 aggregated across EPA/AQS (top panel) and CASTNet (bottom panel) sites across the OTR+VA

Good qualitative agreement between observed and predicted O_3; largest overprediction during nighttime/early morning hours, better agreement during late morning through afternoon hours

For most hours of the day, CMAQ overpredictions are ~1-2 ppb larger at EPA/AQS sites compared to CASTNet sites



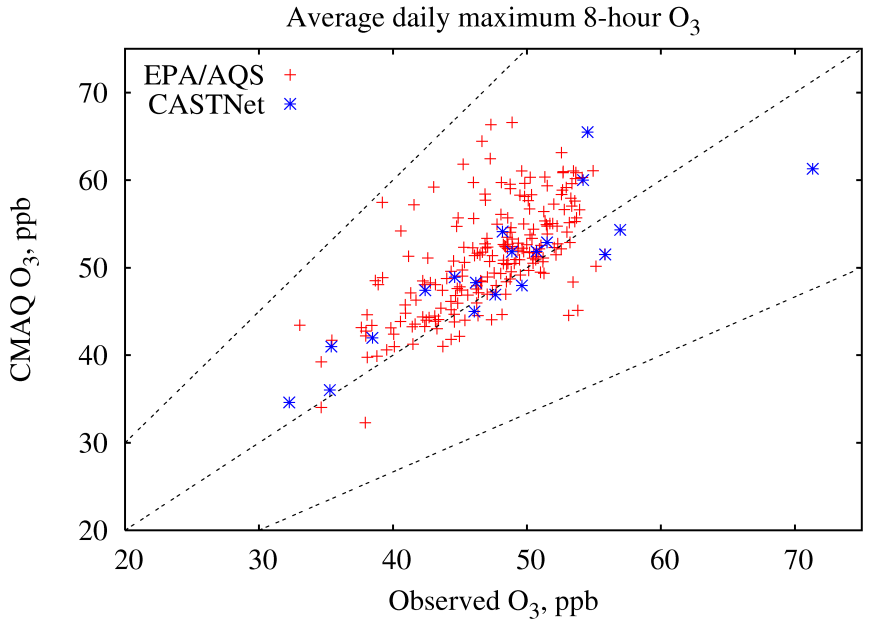


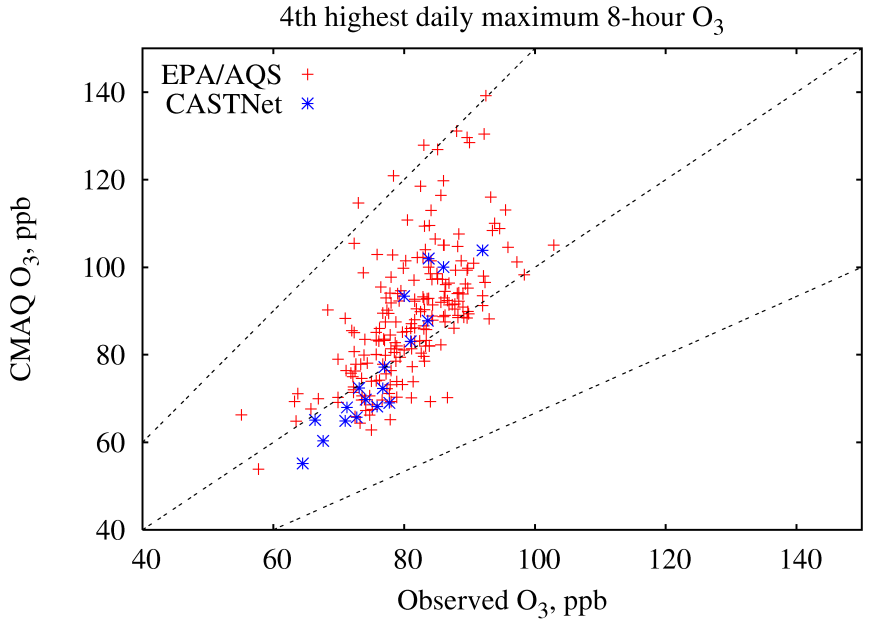
Mean fractional error (top panel) and mean fractional bias (bottom panel) aggregated across the OTR+VA

As noted in the previous slide, the largest MFE and MFB tend to occur during the nighttime and early morning hours, and MFE and MFB tend to be larger at the EPA/AQS sites compared to CASTNet

Overall, MFE<25% and MFB<10% during the late morning through afternoon hours

Daily maximum 8-hour O_3

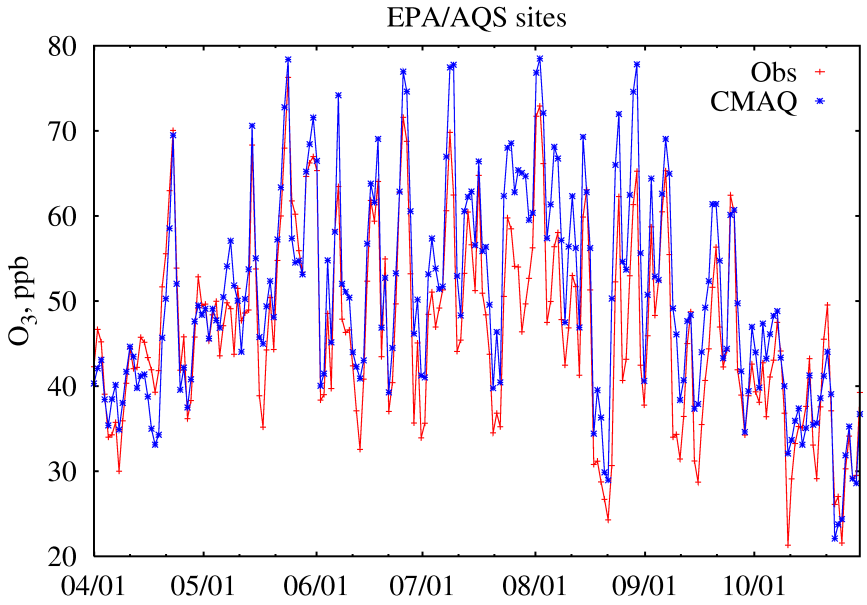


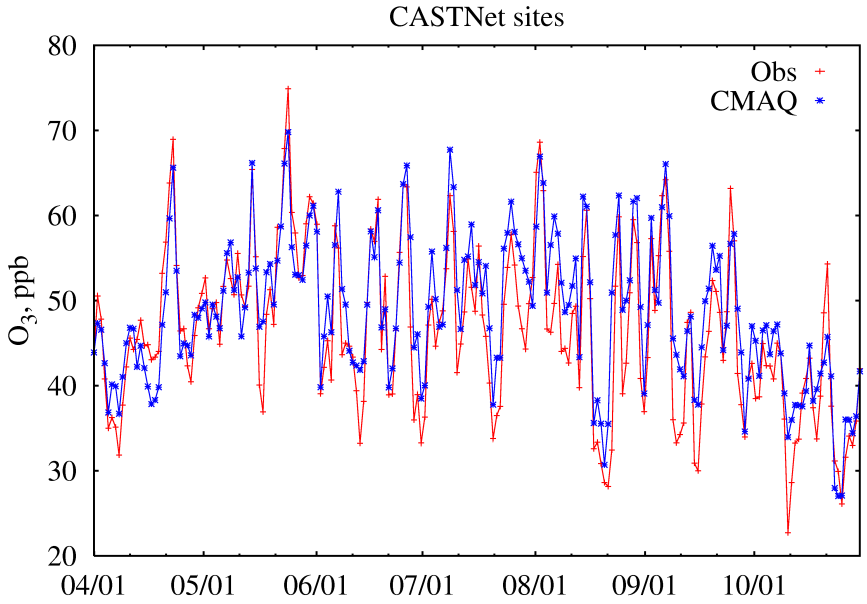


Comparison of observed and predicted average daily maximum 8-hour O_3 (top panel) and 4th highest daily maximum 8-hour O_3 at EPA/AQS and CASTNet sites across the OTR+VA, April-October 2007

Dashed lines denote 1:1, 1:1.5, and 1.5:1

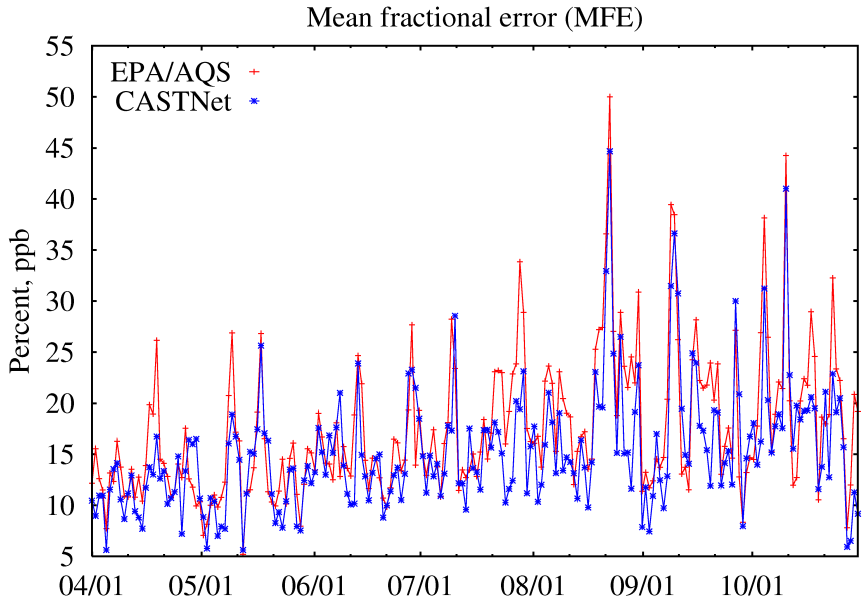
CMAQ tends to overestimate daily maximum O_3, but for <u>average</u> daily maximum O_3 all sites fall within the 1:1.5 and 1.5:1 lines

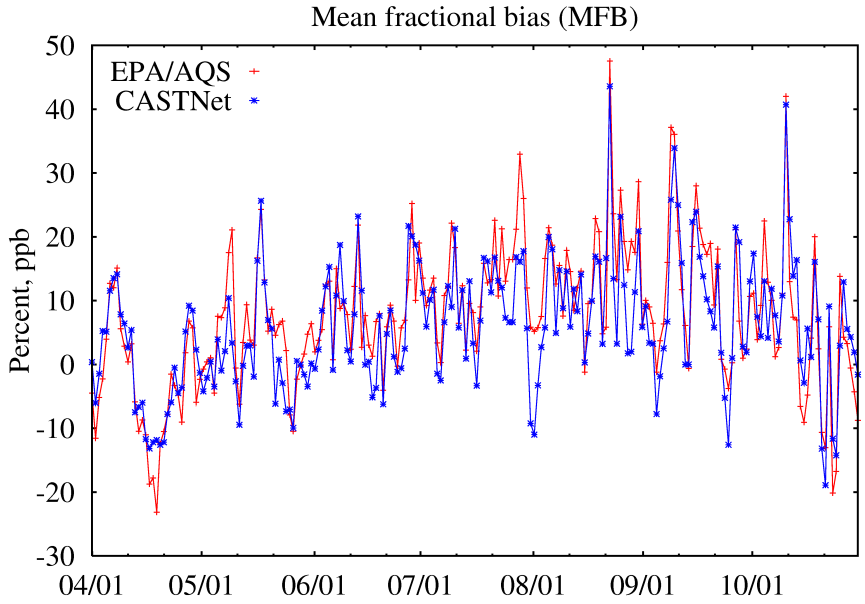




Daily maximum 8-hour O_3 at EPA/AQS (top panel) and CASTNet (bottom panel) sites aggregated across the OTR+VA

CMAQ generally captures the seasonality in daily maximum O_3 levels, although there is a tendency to overpredict O_3 especially at EPA/AQS sites from about mid-May to mid-September

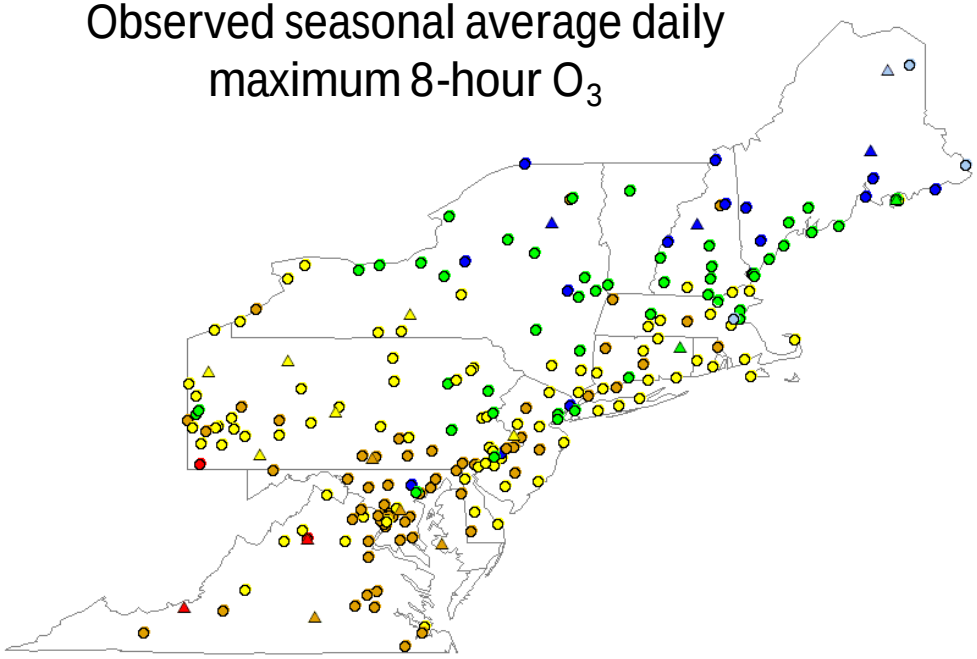




Mean fractional error (top panel) and mean fractional bias (bottom panel) in daily maximum 8-hour O_3 aggregated across the OTR+VA

MFE and MFB tend to be higher at EPA/AQS sites compare to CASTNet

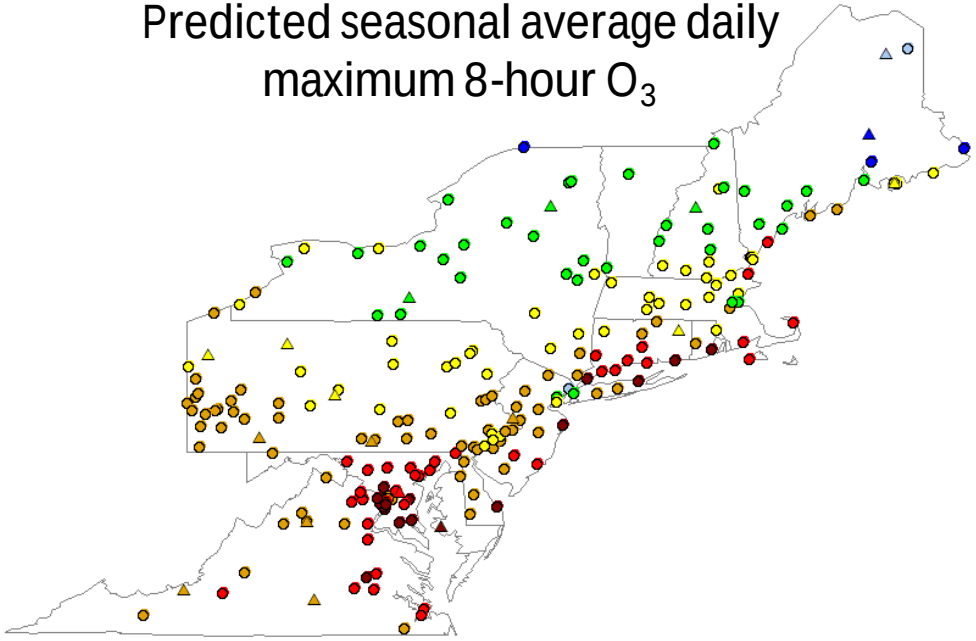
Observed seasonal average daily maximum 8-hour O_3



EPA/AQS – circles
CASTNet – triangles

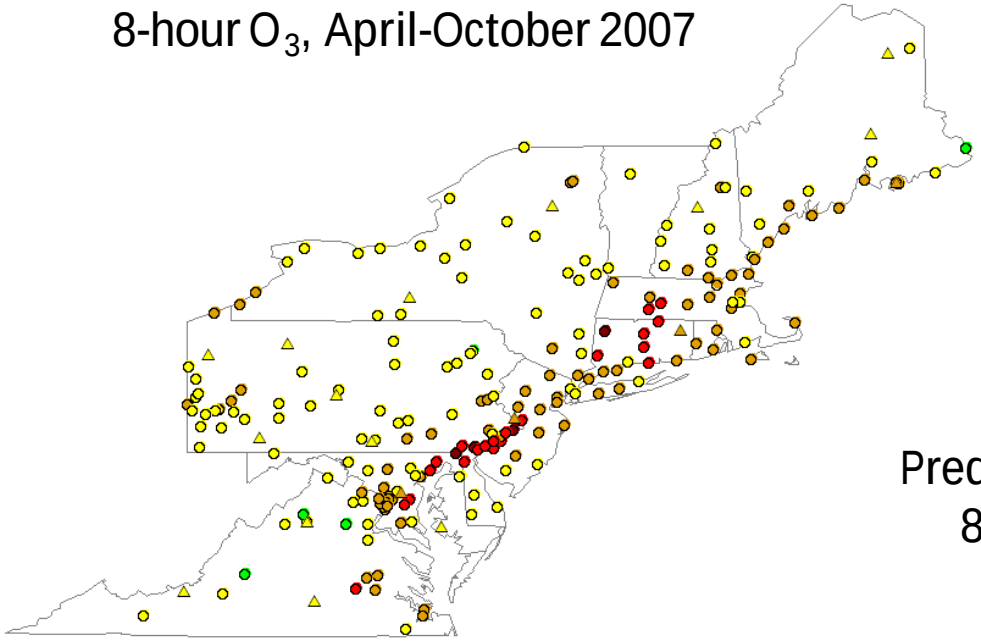
Largest overpredictions tend to occur along the coast/urban corridor

Predicted seasonal average daily maximum 8-hour O_3

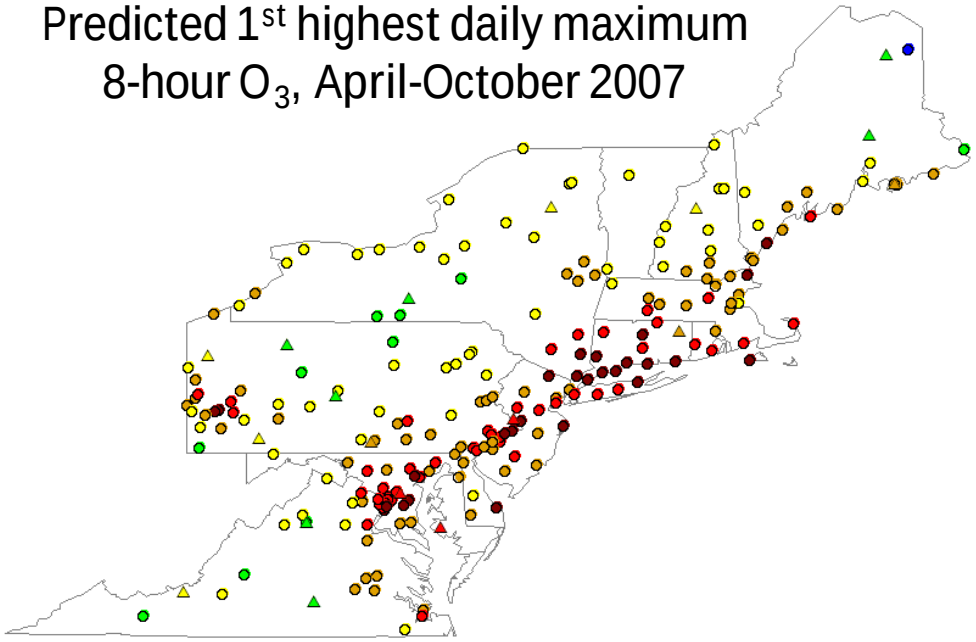


? < 35 ppb
? 35-40 ppb
? 40-45 ppb
? 45-50 ppb
? 50-55 ppb
? 55-60 ppb
? > 60 ppb

Observed 1st highest daily maximum 8-hour O_3, April-October 2007

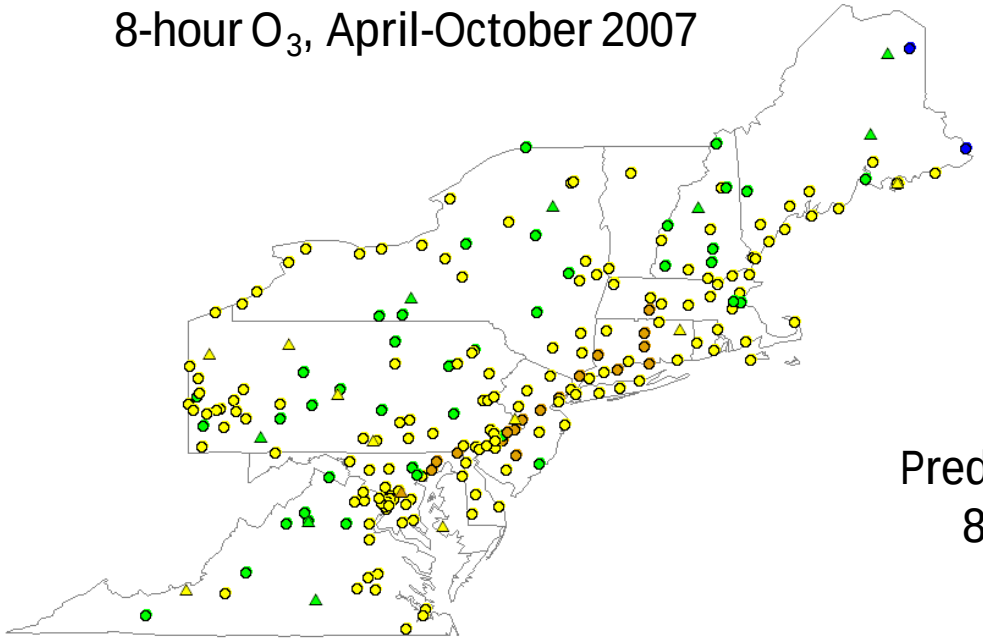


Predicted 1st highest daily maximum 8-hour O_3, April-October 2007



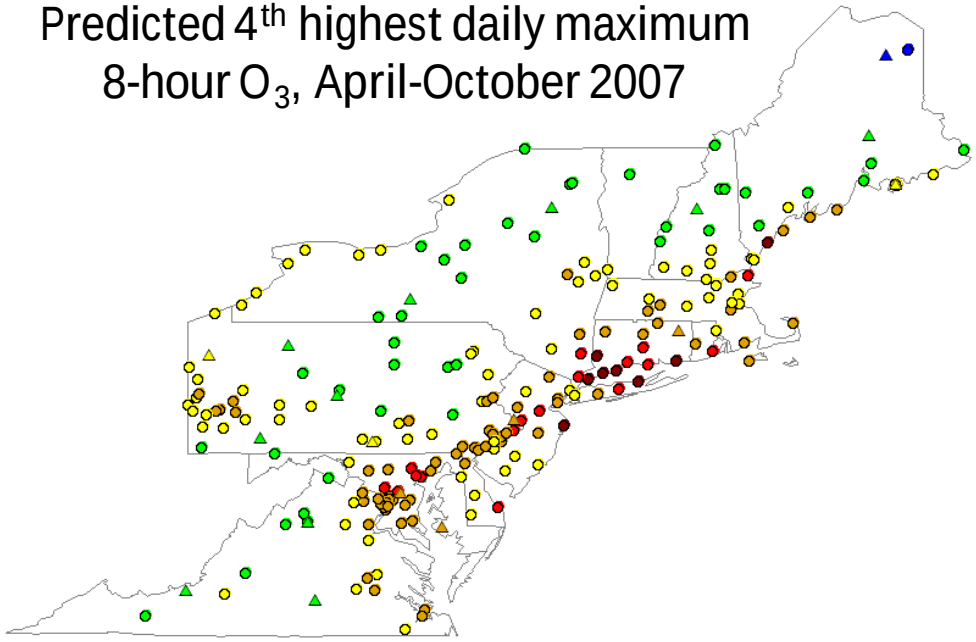
? < 60 ppb
? 60-75 ppb
? 75-90 ppb
? 90-105 ppb
? 105-120 ppb
? > 120 ppb

Observed 4th highest daily maximum 8-hour O_3, April-October 2007

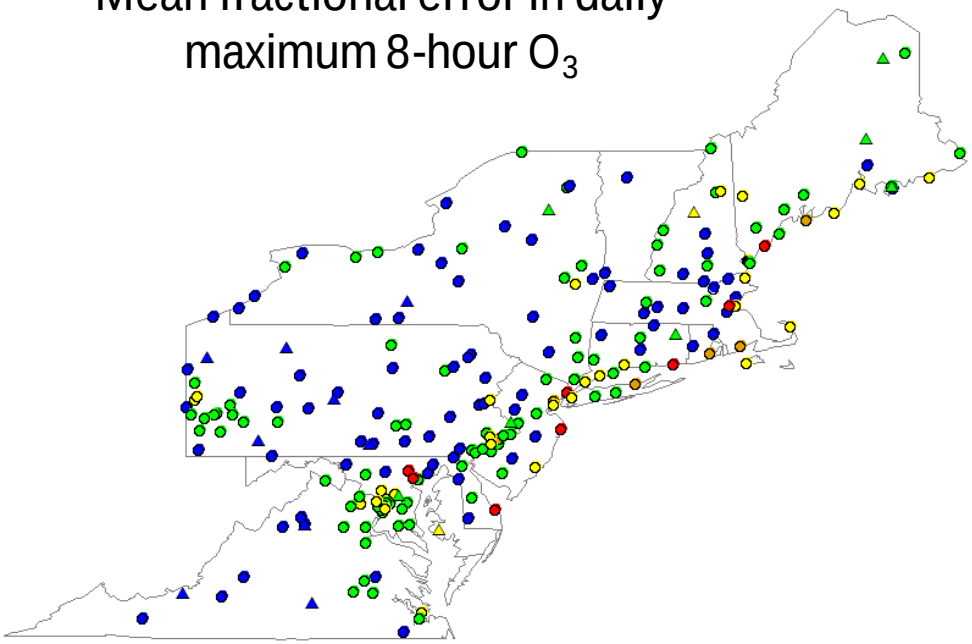


? < 60 ppb
? 60-75 ppb
? 75-90 ppb
? 90-105 ppb
? 105-120 ppb
? > 120 ppb

Predicted 4th highest daily maximum 8-hour O_3, April-October 2007



Mean fractional error in daily maximum 8-hour O_3

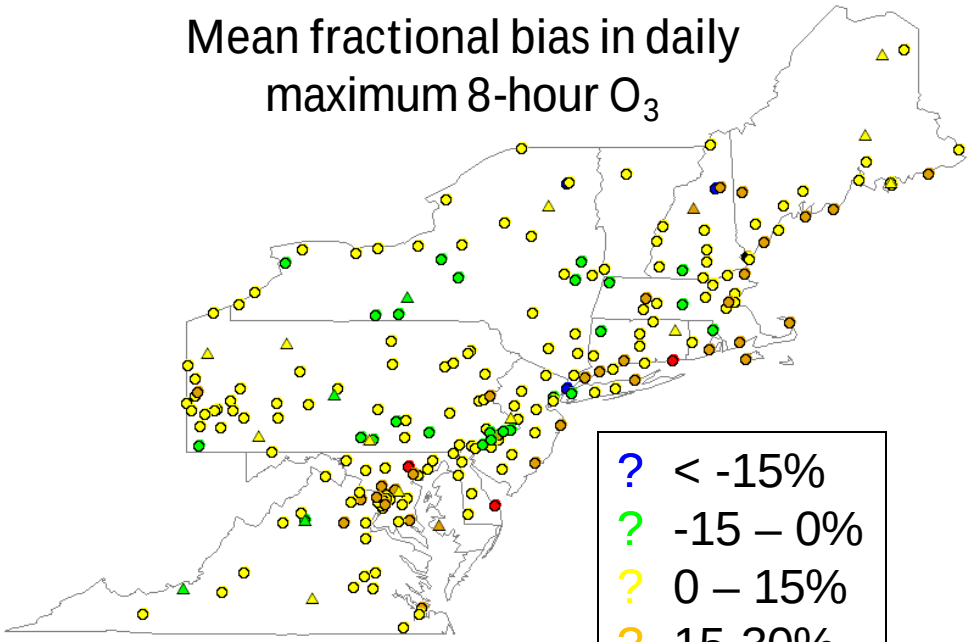


? < 15%
? 15-20%
? 20-25%
? 25-30%
? >30%

Largest errors tend to occur along the coast and downwind of some urban areas (e.g. DC/Baltimore)

Most sites have MFE<20% and MFB between ?15%

Mean fractional bias in daily maximum 8-hour O_3



? < -15%
? -15 – 0%
? 0 – 15%
? 15-30%
? > 30%

Summary

- CMAQ performed well in capturing the observed diurnal and temporal pattern
- Less error in daytime than nighttime that may due to excessive vertical mixing in the night time
- CMAQ performed better with rural monitors (CASTNet) than urban monitors (AQS)

Appendix B2:

Caroline County Ozone Advance Action Plan

Level 3 Screening Modeling Inventory Summary

Level 3 Modeling											
	2007					2020 Base Adjustments for NOX and VOC					
	OTR incl VA	LADCO	SEMAP excl VA	CENRAP	CANADA	OTR incl VA		Non-OTR excl VA		CANADA	
	All Pollutants	All Pollutants	All Pollutants	All Pollutants	All Pollutants	NOX	VOC	NOX	VOC	NOX	VOC
Mobile	MOVES 2007 Ver. 2	NY&VA Converted LADCO 07 /08 default inputs MOVES inventory run. Gasoline PM	SEMAP 2007	EPA 2007 national MOVES inventory run, Gasoline PM emissions temperature-adjusted	OME 2005 (Canadian MOBILE6 Activity and Input Data)	MARAMA 2020 Ver. 2 (Draft)		Proxy from 2007**		Proxy from OME 2005 **	
								64%	60%	64%	60%
EGU	MARAMA 2007 Ver. 3	LADCO 2007 (converted)	SEMAP 2007	NEI 2008 v2	OME 2005	Proxy from 2007		Proxy from 2007		Proxy from OME 2005	
						State by state *	Incr. 24%	35%	Incr. 24%	35%	Incr. 24%
Other Point	MARAMA 2007 Ver. 3	LADCO 2007 (converted)	SEMAP 2007	NEI 2008 v2	OME 2005	MARAMA 2020 Ver. 3		Proxy from 2007		Proxy from OME 2005	
								1%	Incr. 2%	1%	Incr. 2%
Cat 3 Marine - Offshore	EPA CHIEF 2008 platform	EPA CHIEF 2008 platform	EPA CHIEF 2008 platform	NA	EPA CHIEF 2008 platform	EPA CHIEF 2020		EPA CHIEF 2020		EPA CHIEF 2020	
MAR	MARAMA 2007 Ver. 3	LADCO 2007	SEMAP 2007	NEI 2008 v2	OME 2005	MARAMA 2020 Ver. 3		Proxy from 2007		Proxy from OME 2005	
								33%	12%	33%	12%
Nonroad	MARAMA 2007 Ver. 3	LADCO 2007	SEMAP 2007	NEI 2008 v2	OME 2005	MARAMA 2020 Ver. 3		Proxy from 2007		Proxy from OME 2005	
								49%	46%	49%	46%
Area	MARAMA 2007 Ver. 3	LADCO 2007	SEMAP 2007	NEI 2008 v2	OME 2005	MARAMA 2020 Ver. 3		Proxy from 2007		Proxy from OME 2005	
								7%	10%	7%	10%
Oil & gas	Not necessary	Not Necessary	Not Necessary	Not Necessary	Not necessary	Not included		Not included		Not included	
Anthropogenic Chlorine	EPA CHIEF 2008 platform	EPA CHIEF 2008 platform	EPA CHIEF 2008 platform	EPA CHIEF 2008	N/A	EPA CHIEF 2008		EPA CHIEF 2008		Not included	
Oceanic Chlorine	EPA CHIEF 2005	EPA CHIEF 2005	EPA CHIEF 2005	EPA CHIEF 2005	EPA CHIEF 2005	EPA CHIEF 2005		EPA CHIEF 2005		EPA CHIEF 2005	
Biogenic	MEGAN	MEGAN	MEGAN	MEGAN	MEGAN	MEGAN		MEGAN		MEGAN	

* EGU emission reductions for NOX and SO2 calculated by Andy Bodnarik. Based on CSAPR.

EGU emissions for VOC and PM2.5 based on percent change in OTR as follows:

VOC: Increases 24 %

PM2.5: Increases 5 %

** Based on Mike Ku calculations (email of 8/9/12 @ 1:49 PM), the mobile reductions achieved within the OTR between 2007 and 2020 will be applied to the 2007 emissions for other USA regions and Canadian mobile emissions as follows:

NOX: 64% (as indicated in the table above)

VOC: 60% (as indicated in the table above)

PM2.5: 51%

SO2: 30%

Appendix B3:

Caroline County Ozone Advance Action Plan

Level 3 Screening Modeling Inventory Data

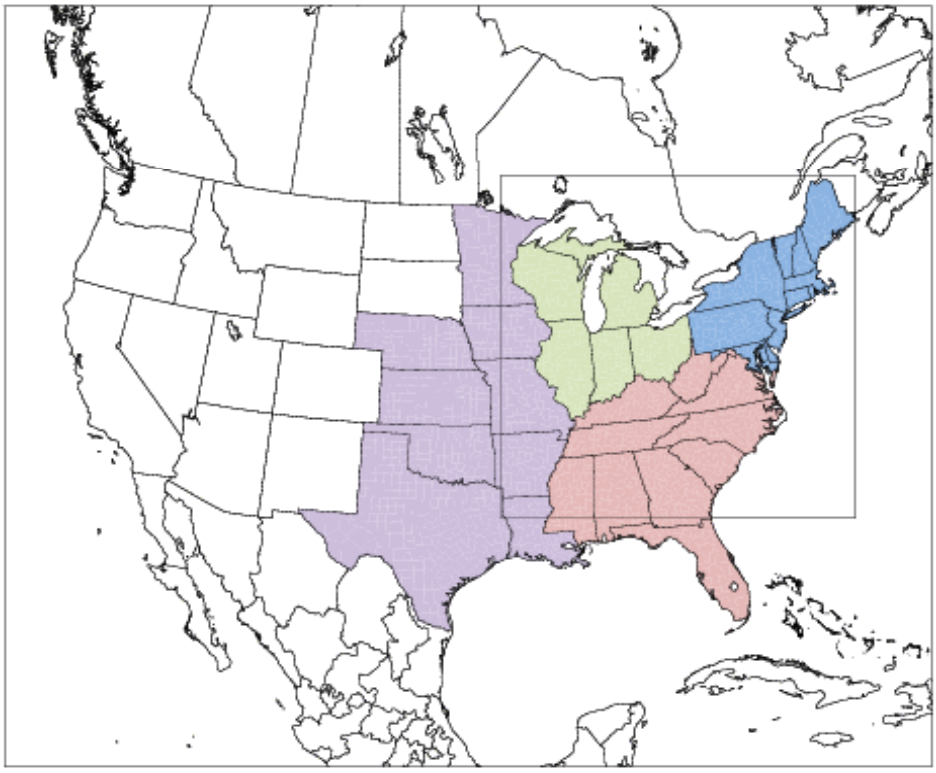
2007 LEVEL 3 EMISSION Summary

The following worksheets summarize the emissions estimates used in the Level 3 Modeling. These tables are based on the reports generated by SMOKE during emissions processing. Certain RPO's contain some states which fall outside the modeling domain. For these states emissions are shown for both the entire state and the fraction of the state in the domain. Tables indicated by "**(OTC Domain ONLY)**"

More information on the MARAMA inventories can be found at:

http://www.marama.org/technical-center/emissions-inventory/2007-emissions-and-projections/version-3-2007-emissions-inventory

OTC Modeling Domain and RPO's



MANEVU **SEMAP** **MRPO** **CENRAP**

2007 Level 3 Emissions
Regional Totals
All Sources

	LEVEL 3 EMISSIONS - ALL SOURCES[1]							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[Tons/yr]	[Tons/yr]	[Tons/yr]	[Tons/yr]	[Tons/yr]	[Tons/yr]	[Tons/yr]	[Tons/yr]
MANEVU	12,296,684	2,681,689	2,174,940	287,371	2,290,727	786,483	390,015	396,468
SEMAP[2]	10,725,484	3,076,549	1,806,397	513,661	2,981,510	1,095,041	409,326	685,709
LADCO	11,270,371	2,718,812	2,098,620	367,165	2,990,081	1,128,666	417,006	711,660
CENRAP[2]	4,294,413	1,046,580	760,762	416,268	617,475	1,036,898	255,960	780,960
CANADA[3]	4,802,419	682,866	1,159,360	221,261	913,890	915,222	257,232	657,989

1 - Does NOT include Category 3 Marine Vessel Emissions
2 - Includes CENRAP/SEMAP States in OTC Modeling Domain Only
3 - Includes Canadian Provinces in OTC Modeling Domain Only

2007 Level 3 Emissions
State Totals By Region
All Sources
Emissions in OTC Domain ONLY

		MANEVU LEVEL 3 EMISSIONS - Total ALL SOURCES							
		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	523,678	98,307	105,443	5,744	28,662	21,132	13,032	8,100
10000	Delaware	163,265	51,563	26,312	12,900	48,901	12,573	7,213	5,360
11000	District of Columbia	50,368	13,935	9,927	343	2,117	3,224	1,743	1,482
23000	Maine	502,426	69,222	116,836	7,026	28,019	29,275	16,206	13,070
24000	Maryland	912,844	243,166	143,401	28,503	335,943	66,281	37,307	28,974
25000	Massachusetts	891,957	147,344	168,256	16,698	86,069	70,662	28,480	42,181
33000	New Hampshire	331,675	52,327	66,222	2,151	51,594	15,465	9,901	5,564
34000	New Jersey	1,092,745	239,189	208,791	19,692	59,102	42,320	29,556	12,764
36000	New York	3,001,330	572,681	496,218	55,161	267,125	177,774	74,934	102,840
42000	Pennsylvania	2,779,715	737,737	442,324	80,300	1,112,299	209,634	101,360	108,275
44000	Rhode Island	193,667	29,964	38,204	1,167	6,385	7,135	4,178	2,957
50000	Vermont	237,998	25,922	45,577	8,377	4,399	20,893	10,922	9,971
51000	Virginia	1,615,016	400,332	307,429	49,310	260,112	110,114	55,184	54,931
	MANEVU TOTAL	**12,296,684**	**2,681,689**	**2,174,940**	**287,371**	**2,290,727**	**786,483**	**390,015**	**396,468**

		SEMAP LEVEL 3 EMISSIONS - Total ALL SOURCES							
		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	1,156,921	368,834	191,647	58,472	435,219	133,613	41,961	91,652
12000	Florida								
13000	Georgia	2,362,385	634,690	370,024	89,968	694,548	240,882	72,806	168,080
21000	Kentucky	989,098	409,790	198,919	54,641	429,460	154,772	55,504	99,264
28000	Mississippi	635,932	190,455	128,989	46,492	16,455	134,903	29,842	105,059
37000	North Carolina	2,552,772	456,032	380,759	176,215	436,114	84,538	59,796	24,746
45000	South Carolina	1,006,376	267,733	182,023	33,697	226,183	140,741	53,406	87,335
47000	Tennessee	1,511,211	462,338	274,904	40,060	306,645	147,976	54,586	93,385
54000	West Virginia	510,789	286,678	79,132	14,116	436,887	57,615	41,426	16,189
	SEMAP TOTAL	**10,725,484**	**3,076,549**	**1,806,397**	**513,661**	**2,981,510**	**1,095,041**	**409,326**	**685,709**

		LADCO LEVEL 3 EMISSIONS - Total ALL SOURCES							
		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	2,279,291	633,141	453,249	127,459	413,491	434,976	122,782	312,194
18000	Indiana	1,793,920	532,350	303,657	48,055	825,331	278,356	88,135	190,222
26000	Michigan	2,539,545	547,098	555,084	8,801	433,156	60,011	46,643	13,368
39000	Ohio	3,059,924	719,832	408,493	94,987	1,110,367	248,097	118,693	129,404
55000	Wisconsin	1,597,691	286,391	378,137	87,864	207,737	107,226	40,754	66,473
	LADCO TOTAL	**11,270,371**	**2,718,812**	**2,098,620**	**367,165**	**2,990,081**	**1,128,666**	**417,006**	**711,660**

		CENRAP LEVEL 3 EMISSIONS - Total ALL SOURCES							
		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	783,274	198,114	160,544	102,434	77,310	202,733	52,580	150,159
19000	Iowa	701,111	175,463	121,300	149,441	122,968	247,969	58,208	189,756
20000	Kansas								
22000	Louisiana	230,028	71,641	56,253	20,242	19,486	35,807	15,314	20,492
27000	Minnesota	1,222,204	249,584	184,314	44,241	57,305	168,593	50,986	117,608
29000	Missouri	1,339,154	341,618	214,283	98,695	340,215	376,373	77,583	298,810
31000	Nebraska								
40000	Oklahoma								
48000	Texas	18,642	10,161	24,069	1,214	191	5,423	1,289	4,135
	CENRAP TOTAL	**4,294,413**	**1,046,580**	**760,762**	**416,268**	**617,475**	**1,036,898**	**255,960**	**780,960**

		CANDAIAN LEVEL 3 EMISSIONS - Total ALL Sources							
		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
113000	New Brunswick	211,599	24,184	54,570	4,708	100,849	51,373	19,045	32,328
124000	Quebec	2,108,941	257,151	452,964	94,161	246,113	348,512	103,872	244,641
135000	Ontario	2,481,880	401,531	651,826	122,392	566,928	515,337	134,315	381,021
	CANADA TOTAL	**4,802,419**	**682,866**	**1,159,360**	**221,261**	**913,890**	**915,222**	**257,232**	**657,989**

2007 Level 3 Emissions
Regional Totals By Sector
Emissions in OTC Domain ONLY

	LEVEL 3 AREA SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	997,292	228,456	928,334	250,050	229,568	560,038	214,577	345,461
SEMAP	274,151	69,596	703,588	477,369	55,978	775,452	157,632	617,813
LADCO	484,508	161,188	791,180	342,291	50,769	806,833	164,741	642,092
CENRAP	321,577	52,852	308,049	402,783	39,082	933,086	178,072	755,035
TOTAL	**2,077,527**	**512,092**	**2,731,151**	**1,472,493**	**375,397**	**3,075,409**	**715,022**	**2,360,401**

	LEVEL 3 MAR SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	187,627	219,237	23,328	66	34,981	10,645	9,479	1,166
SEMAP	135,392	195,595	18,294	86	11,680	8,611	7,720	891
LADCO	44,569	175,098	9,445	85	10,670	5,729	5,285	444
CENRAP	33,896	108,445	5,018	50	3,758	4,000	3,522	479
TOTAL	**401,483**	**698,374**	**56,084**	**287**	**61,089**	**28,985**	**26,005**	**2,980**

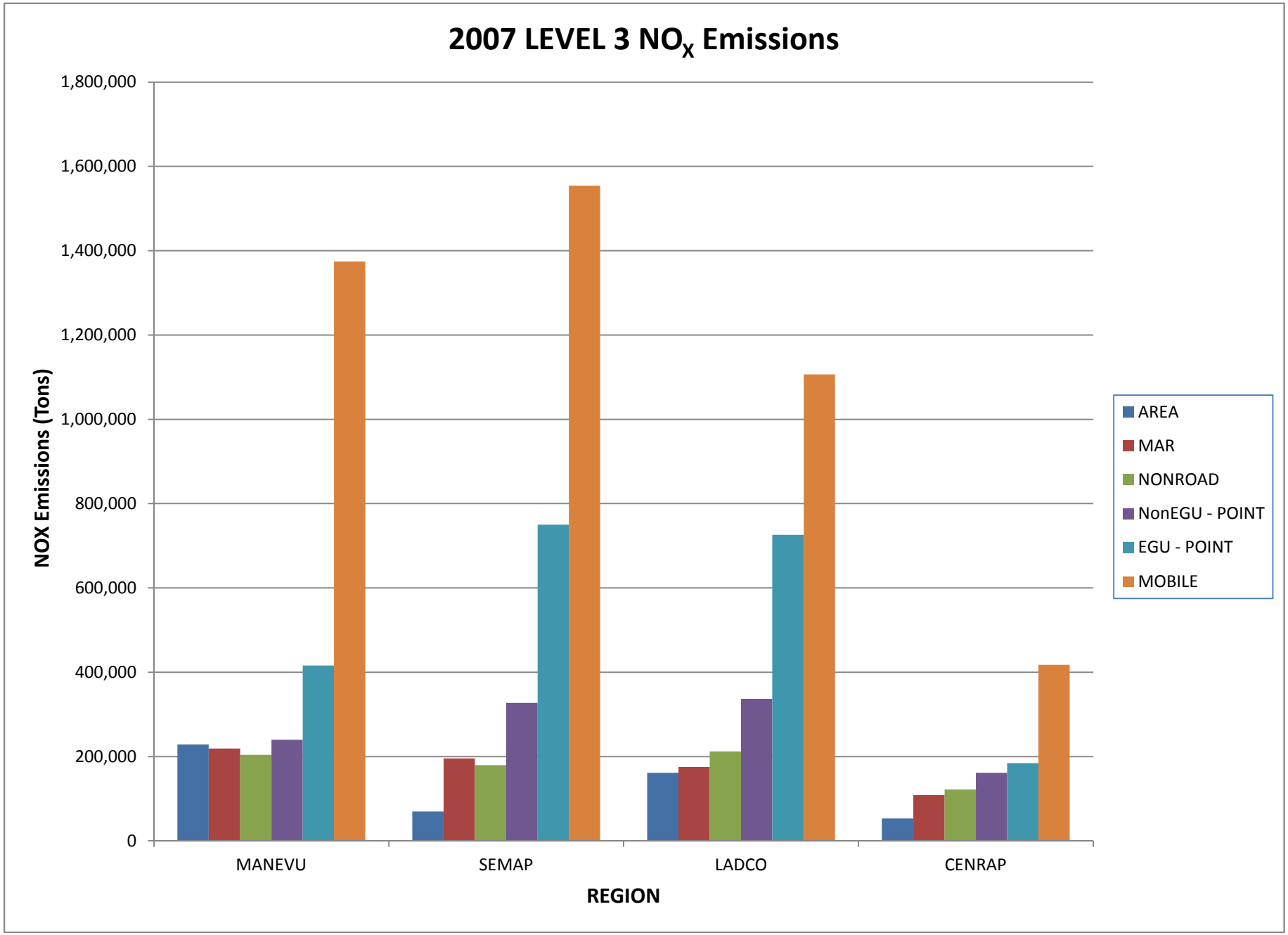
	LEVEL 3 NONROAD SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	2,463,435	204,027	410,950	253	10,549	22,494	21,356	1,138
SEMAP	1,334,820	179,475	174,342	159	10,158	16,265	15,556	708
LADCO	2,340,292	212,225	543,552	280	11,880	26,660	25,190	1,471
CENRAP	896,267	121,675	147,450	129	2,205	11,982	11,452	530
TOTAL	**7,034,814**	**717,403**	**1,276,294**	**821**	**34,792**	**77,400**	**73,554**	**3,847**

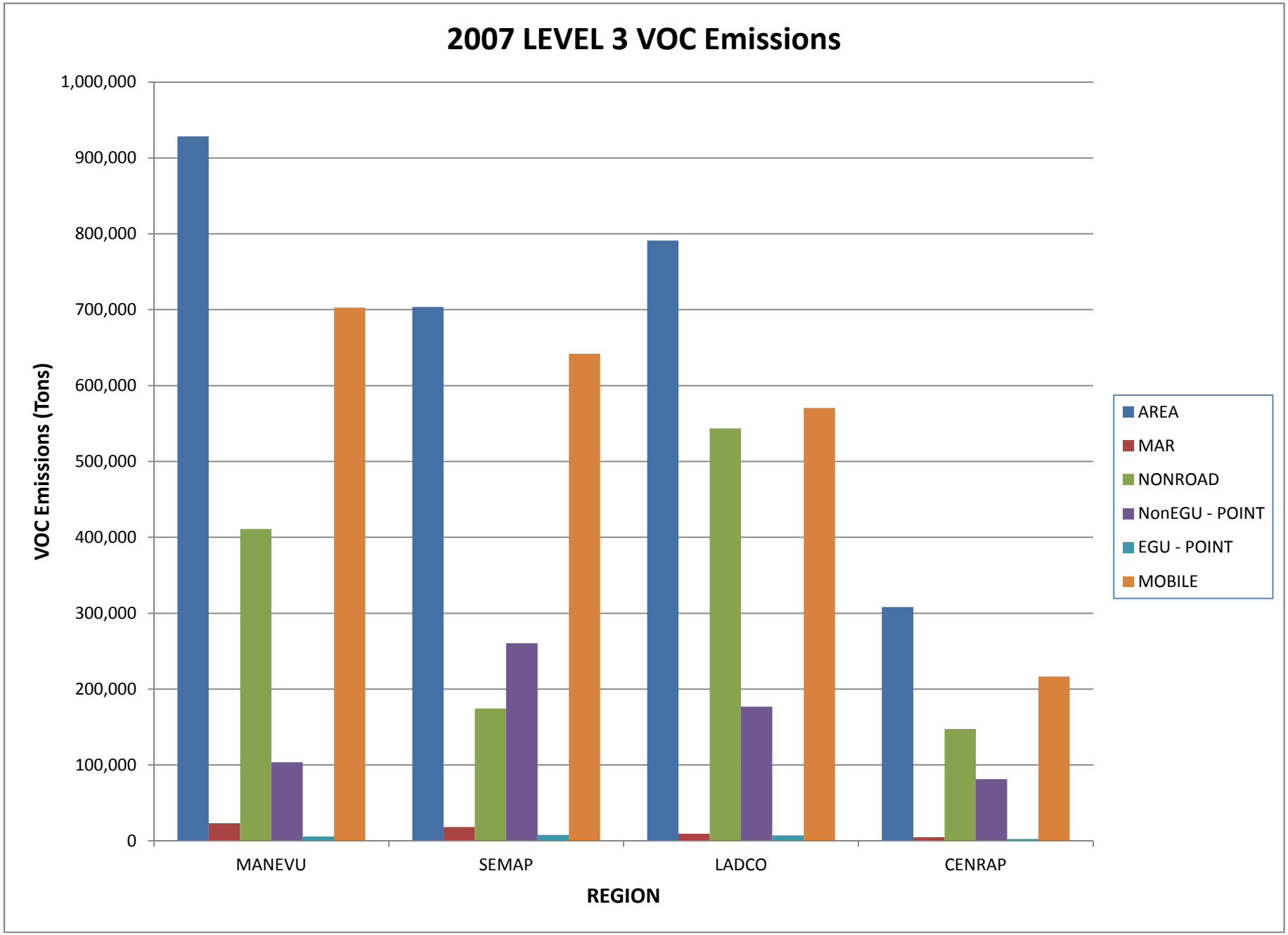
	LEVEL 3 NON-EGU POINT SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	313,124	239,691	103,745	6,177	231,636	59,718	41,648	18,071
SEMAP	440,766	327,510	260,321	11,840	325,688	108,647	82,144	26,505
LADCO	806,161	337,222	176,858	6,421	434,431	113,494	77,433	36,061
CENRAP	158,014	161,609	81,243	6,473	169,059	45,396	30,693	14,703
TOTAL	**1,718,065**	**1,066,032**	**622,167**	**30,911**	**1,160,814**	**327,256**	**231,918**	**95,339**

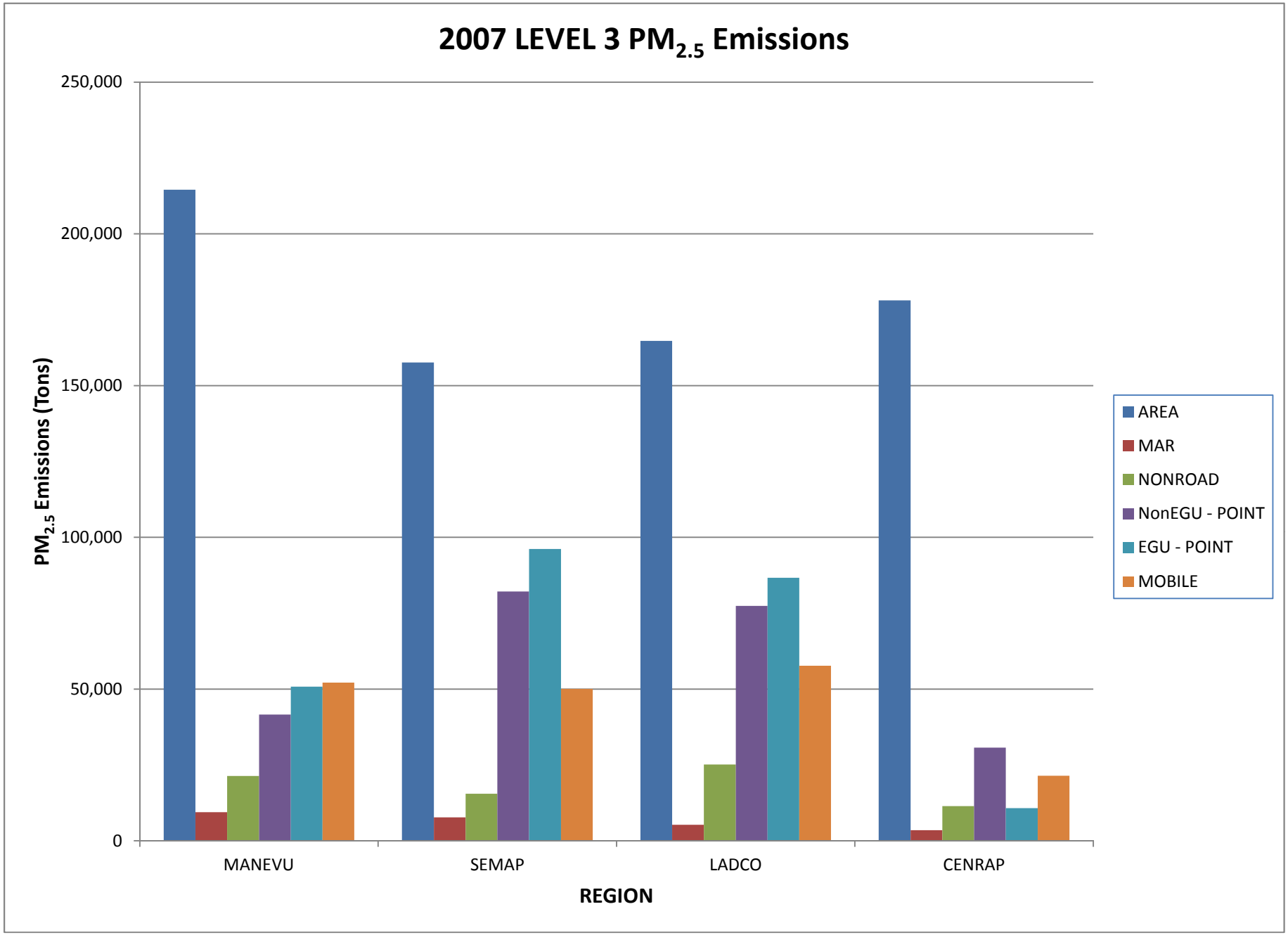
	LEVEL 3 EGU POINT SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	62,999	415,893	5,833	3,117	1,773,591	65,269	50,785	14,484
SEMAP	80,435	750,298	7,765	432	2,561,958	122,981	96,199	26,783
LADCO	71,424	726,293	7,138	1,207	2,465,360	105,228	86,678	18,550
CENRAP	41,439	184,552	2,427	631	397,724	16,857	10,789	6,068
TOTAL	**256,297**	**2,077,036**	**23,163**	**5,388**	**7,198,633**	**310,335**	**244,451**	**65,885**

	LEVEL 3 MOBILE SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	8,272,208	1,374,385	702,752	27,709	10,402	68,318	52,171	16,147
SEMAP	8,459,921	1,554,076	642,087	23,774	16,049	63,084	50,074	13,009
LADCO	7,523,417	1,106,786	570,447	16,881	16,971	70,723	57,680	13,042
CENRAP	2,843,221	417,447	216,575	6,201	5,647	25,578	21,432	4,146
TOTAL	**27,098,766**	**4,452,693**	**2,131,860**	**74,565**	**49,069**	**227,703**	**181,357**	**46,345**

	LEVEL 3 Category 3 MARINE VESSEL SOURCES							
	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
OTC Domain Waters	**17,099**	**206,004**	**7,265**	**0**	**129,393**	**17,132**	**15,779**	**1,353**


2007 LEVEL 3 NOx Emissions
NOX Emissions (Tons)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
MANEVU
SEMAP
LADCO
CENRAP
REGION
AREA
MAR
NONROAD
NonEGU - POINT
EGU - POINT
MOBILE


2007 LEVEL 3 VOC Emissions
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
VOC Emissions (Tons)
MANEVU
SEMAP
LADCO
CENRAP
REGION
AREA
MAR
NONROAD
NonEGU - POINT
EGU - POINT
MOBILE


2007 LEVEL 3 PM2.5 Emissions
250,000
200,000
150,000
100,000
50,000
0
PM2.5 Emissions (Tons)
MANEVU
SEMAP
LADCO
CENRAP
REGION
AREA
MAR
NONROAD
NonEGU - POINT
EGU - POINT
MOBILE

Plot Data

LEVEL 3 AREA SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	997,292	228,456	928,334	250,050	229,568	560,038	214,577	345,461
SEMAP	274,151	69,596	703,588	477,369	55,978	775,452	157,632	617,813
LADCO	484,508	161,188	791,180	342,291	50,769	806,833	164,741	642,092
CENRAP	321,577	52,852	308,049	402,783	39,082	933,086	178,072	755,035
TOTAL	**2,077,527**	**512,092**	**2,731,151**	**1,472,493**	**375,397**	**3,075,409**	**715,022**	**2,360,401**

LEVEL 3 MAR SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	187,627	219,237	23,328	66	34,981	10,645	9,479	1,166
SEMAP	135,392	195,595	18,294	86	11,680	8,611	7,720	891
LADCO	44,569	175,098	9,445	85	10,670	5,729	5,285	444
CENRAP	33,896	108,445	5,018	50	3,758	4,000	3,522	479
TOTAL	**401,483**	**698,374**	**56,084**	**287**	**61,089**	**28,985**	**26,005**	**2,980**

LEVEL 3 NONROAD SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	2,463,435	204,027	410,950	253	10,549	22,494	21,356	1,138
SEMAP	1,334,820	179,475	174,342	159	10,158	16,265	15,556	708
LADCO	2,340,292	212,225	543,552	280	11,880	26,660	25,190	1,471
CENRAP	896,267	121,675	147,450	129	2,205	11,982	11,452	530
TOTAL	**7,034,814**	**717,403**	**1,276,294**	**821**	**34,792**	**77,400**	**73,554**	**3,847**

LEVEL 3 NON-EGU POINT SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	313,124	239,691	103,745	6,177	231,636	59,718	41,648	18,071
SEMAP	440,766	327,510	260,321	11,840	325,688	108,647	82,144	26,505
LADCO	806,161	337,222	176,858	6,421	434,431	113,494	77,433	36,061
CENRAP	158,014	161,609	81,243	6,473	169,059	45,396	30,693	14,703
TOTAL	**1,718,065**	**1,066,032**	**622,167**	**30,911**	**1,160,814**	**327,256**	**231,918**	**95,339**

LEVEL 3 EGU POINT SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	62,999	415,893	5,833	3,117	1,773,591	65,269	50,785	14,484
SEMAP	80,435	750,298	7,765	432	2,561,958	122,981	96,199	26,783
LADCO	71,424	726,293	7,138	1,207	2,465,360	105,228	86,678	18,550
CENRAP	41,439	184,552	2,427	631	397,724	16,857	10,789	6,068
TOTAL	**256,297**	**2,077,036**	**23,163**	**5,388**	**7,198,633**	**310,335**	**244,451**	**65,885**

LEVEL 3 MOBILE SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
MANEVU	8,272,208	1,374,385	702,752	27,709	10,402	68,318	52,171	16,147
SEMAP	8,459,921	1,554,076	642,087	23,774	16,049	63,084	50,074	13,009
LADCO	7,523,417	1,106,786	570,447	16,881	16,971	70,723	57,680	13,042
CENRAP	2,843,221	417,447	216,575	6,201	5,647	25,578	21,432	4,146
TOTAL	**27,098,766**	**4,452,693**	**2,131,860**	**74,565**	**49,069**	**227,703**	**181,357**	**46,345**

LEVEL 3 Category 3 MARINE VESSEL SOURCES

	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
OTC Domain Waters	**17,099**	**206,004**	**7,265**	**0**	**129,393**	**17,132**	**15,779**	**1,353**

NOX

	AREA	MAR	NONROAD	NonEGU - POIN	EGU - POINT	MOBILE
MANEVU	228,456	219,237	204,027	239,691	415,893	1,374,385
SEMAP	69,596	195,595	179,475	327,510	750,298	1,554,076
LADCO	161,188	175,098	212,225	337,222	726,293	1,106,786
CENRAP	52,852	108,445	121,675	161,609	184,552	417,447

VOC

	AREA	MAR	NONROAD	NonEGU - POIN	EGU - POINT	MOBILE
MANEVU	928,334	23,328	410,950	103,745	5,833	702,752
SEMAP	703,588	18,294	174,342	260,321	7,765	642,087
LADCO	791,180	9,445	543,552	176,858	7,138	570,447
CENRAP	308,049	5,018	147,450	81,243	2,427	216,575

PM25

	AREA	MAR	NONROAD	NonEGU - POIN	EGU - POINT	MOBILE
MANEVU	214,577	9,479	21,356	41,648	50,785	52,171
SEMAP	157,632	7,720	15,556	82,144	96,199	50,074
LADCO	164,741	5,285	25,190	77,433	86,678	57,680
CENRAP	178,072	3,522	11,452	30,693	10,789	21,432

Stationary area
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 MANEVU AREA Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	41,496	12,421	57,253	4,421	16,083	15,600	8,396	7,204
10000	Delaware	8,266	2,237	9,482	12,382	1,144	7,208	2,407	4,802
11000	District of Columbia	5,488	1,547	5,568	183	1,241	2,445	1,121	1,325
23000	Maine	50,496	6,656	31,966	5,736	9,812	20,227	8,744	11,483
24000	Maryland	74,188	10,312	64,429	26,006	5,960	38,521	14,710	23,811
25000	Massachusetts	79,226	20,252	85,870	13,791	19,859	58,380	18,621	39,759
33000	New Hampshire	39,677	4,737	22,343	1,500	5,283	10,653	5,832	4,821
34000	New Jersey	77,687	24,175	98,121	15,736	8,811	24,801	14,944	9,857
36000	New York	205,060	72,053	195,980	45,693	70,044	140,761	47,023	93,738
42000	Pennsylvania	217,080	47,545	176,780	72,569	66,584	138,587	50,855	87,732
44000	Rhode Island	15,419	3,469	24,214	625	3,897	5,553	2,957	2,595
50000	Vermont	51,109	3,996	14,108	8,013	3,752	19,097	9,434	9,663
51000	Virginia	132,100	19,056	142,220	43,394	17,098	78,204	29,533	48,671
	TOTAL	**997,292**	**228,456**	**928,334**	**250,050**	**229,568**	**560,038**	**214,577**	**345,461**

Inventory: **MARAMA 2007 V3**
File(s): ARINV_2007_AREA_Jan2012.txt

Stationary area
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 MANEVU MAR Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	5,921	8,964	744	3	1,538	423	387	36
10000	Delaware	2,253	6,283	806	0	2,140	369	339	30
11000	District of Columbia	88	512	35	0	38	12	12	0
23000	Maine	33,589	3,162	445	0	295	505	450	55
24000	Maryland	13,760	22,704	2,006	7	2,481	897	783	114
25000	Massachusetts	17,615	12,570	1,924	2	983	769	651	118
33000	New Hampshire	2,266	1,441	192	0	544	72	60	12
34000	New Jersey	24,162	22,259	3,354	10	7,273	951	865	86
36000	New York	23,939	55,852	4,588	2	10,637	2,419	2,253	166
42000	Pennsylvania	30,820	35,790	4,505	22	3,694	1,623	1,429	194
44000	Rhode Island	2,277	3,263	184	1	667	138	128	10
50000	Vermont	2,493	839	232	0	17	64	49	15
51000	Virginia	28,444	45,599	4,312	17	4,673	2,402	2,074	328
	TOTAL	**187,627**	**219,237**	**23,328**	**66**	**34,981**	**10,645**	**9,479**	**1,166**

Inventory: **MARAMA 2007 V3**
File(s): ARINV_2007_MAR_Jan2012.txt

Nonroad Mobile
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 MANEVU NONROAD Sources							
		CO	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	105,711	11,880	10,982	11	546	921	881	40
10000	Delaware	19,601	2,971	2,213	3	149	244	227	17
11000	District of Columbia	8,375	2,241	790	2	136	182	177	6
23000	Maine	187,201	4,737	64,163	20	287	1,835	1,706	129
24000	Maryland	146,672	16,864	16,337	17	964	1,622	1,545	76
25000	Massachusetts	200,013	17,001	25,453	19	793	1,557	1,479	78
33000	New Hampshire	90,235	4,789	29,172	11	234	994	921	73
34000	New Jersey	262,968	26,812	24,593	26	1,289	2,167	2,083	85
36000	New York	680,397	45,096	122,012	65	2,246	5,550	5,255	295
42000	Pennsylvania	471,799	39,026	68,324	44	1,994	3,999	3,808	191
44000	Rhode Island	29,055	3,013	2,574	3	143	227	219	8
50000	Vermont	66,576	2,204	21,201	7	131	636	601	35
51000	Virginia	194,833	27,394	23,136	27	1,637	2,559	2,453	106
	TOTAL	**2,463,435**	**204,027**	**410,950**	**253**	**10,549**	**22,494**	**21,356**	**1,138**

Inventory: **MARAMA 2007 V3**
File(s): 2007${mon}ORLTotMARAMAv3.txt

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 MANEVU NonEGU Point Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	2,583	6,302	1,447	0	3,185	645	573	72
10000	Delaware	7,027	5,122	3,406	62	8,206	1,198	1,084	115
11000	District of Columbia	301	734	58	0	471	46	43	4
23000	Maine	14,023	17,050	4,988	605	15,571	4,748	3,727	1,021
24000	Maryland	77,574	23,472	4,598	137	31,176	5,712	3,877	1,835
25000	Massachusetts	4,592	12,872	4,094	365	9,057	3,034	2,572	462
33000	New Hampshire	2,255	2,687	807	30	2,734	1,141	1,061	80
34000	New Jersey	6,908	13,517	10,106	210	3,401	3,147	2,411	736
36000	New York	52,877	35,583	9,772	1,064	44,307	4,463	2,415	2,048
42000	Pennsylvania	80,540	71,382	28,194	2,070	57,330	22,275	13,389	8,886
44000	Rhode Island	1,052	950	922	16	1,501	173	124	49
50000	Vermont	702	441	373	0	316	146	114	32
51000	Virginia	62,691	49,579	34,981	1,618	54,381	12,990	10,259	2,731
	TOTAL	**313,124**	**239,691**	**103,745**	**6,177**	**231,636**	**59,718**	**41,648**	**18,071**

Inventory: **MARAMA 2007 V3**
File(s): PTINV_2007_Nonhourly_Jan2012.orl

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 MANEVU EGU Sources - 12 Month							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	1,966	4,812	250	0	6,904	867	821	46
10000	Delaware	1,384	12,911	116	43	37,058	2,730	2,486	244
11000	District of Columbia	83	177	6	0	142	19	17	3
23000	Maine	460	696	35	59	1,677	148	125	23
24000	Maryland	4,308	54,686	404	0	294,430	14,356	12,437	1,919
25000	Massachusetts	5,611	11,164	468	292	54,595	2,736	2,355	381
33000	New Hampshire	909	4,734	110	98	42,519	784	602	182
34000	New Jersey	2,411	16,196	315	259	37,368	4,415	4,328	87
36000	New York	14,585	57,812	2,478	1,380	137,650	5,379	3,759	1,620
42000	Pennsylvania	20,179	187,580	803	318	977,010	27,478	19,171	8,307
44000	Rhode Island	602	494	49	58	16	16	16	0
50000	Vermont	1,444	370	22	0	6	0	0	0
51000	Virginia	6,083	56,494	639	211	175,560	5,572	4,064	1,508
	TOTAL	**60,024**	**408,127**	**5,693**	**2,718**	**1,764,934**	**64,500**	**50,180**	**14,320**

Inventory: **MARAMA 2007 V3**
File(s): PTINV_2007_12MonthUnits_Jan2012.orl
PTHOUR_2007_${MON}_12MonthUnits_24Feb2012.txt
pthour_2007_${mon}_MD6montunits_march2010.ems
pthours_2007_${mon}_VADGunits_march2010.ems

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 MANEVU EGU Sources - 5 Month							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	6	68	3	0	5	6	6	0
10000	Delaware	1	12	0	0	13	1	1	0
11000	District of Columbia								
23000	Maine								
24000	Maryland								
25000	Massachusetts	11	44	3	36	15	5	4	0
33000	New Hampshire	1	17	0	0	4	0	0	0
34000	New Jersey	817	891	79	236	43	99	96	3
36000	New York	117	696	2	126	64	7	5	2
42000	Pennsylvania	1,127	2,297	25	1	3,178	361	246	115
44000	Rhode Island								
50000	Vermont								
51000	Virginia	896	3,741	28	2	5,336	290	247	43
	TOTAL	**2,975**	**7,766**	**140**	**399**	**8,657**	**769**	**605**	**164**

Inventory: **MARAMA 2007 V3**
File(s): PTINV_2007_NonOzone_5MonthUnits_Jan2012.orl
PTINV_2007_Ozone_5MonthUnits_Jan2012.orl
pthour_2007_${mon}_5MonthUnits_Jan2012.ems

		2007 MANEVU EGU Sources - TOTAL							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	1,971	4,880	253	0	6,909	874	827	47
10000	Delaware	1,385	12,923	116	43	37,071	2,731	2,487	244
11000	District of Columbia	83	177	6	0	142	19	17	3
23000	Maine	460	696	35	59	1,677	148	125	23
24000	Maryland	4,308	54,686	404	0	294,430	14,356	12,437	1,919
25000	Massachusetts	5,622	11,208	472	328	54,610	2,741	2,359	381
33000	New Hampshire	910	4,751	110	98	42,523	784	602	182
34000	New Jersey	3,229	17,087	393	494	37,411	4,514	4,423	90
36000	New York	14,702	58,508	2,480	1,506	137,714	5,386	3,764	1,622
42000	Pennsylvania	21,306	189,877	827	318	980,188	27,838	19,417	8,421
44000	Rhode Island	602	494	49	58	16	16	16	0
50000	Vermont	1,444	370	22	0	6	0	0	0
51000	Virginia	6,979	60,235	667	213	180,896	5,862	4,311	1,551
	TOTAL	**62,999**	**415,893**	**5,833**	**3,117**	**1,773,591**	**65,269**	**50,785**	**14,484**

Onroad Mobile
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 MANEVU ONROAD Mobile Sources							
		CO	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
9000	Connecticut	365,996	53,860	34,764	1,309	401	2,670	1,969	701
10000	Delaware	124,733	22,026	10,289	410	192	822	670	152
11000	District of Columbia	36,033	8,724	3,470	158	88	519	374	144
23000	Maine	216,657	36,922	15,239	605	377	1,812	1,454	358
24000	Maryland	596,343	115,128	55,628	2,335	932	5,174	3,955	1,219
25000	Massachusetts	584,890	73,441	50,443	2,194	767	4,181	2,798	1,382
33000	New Hampshire	196,333	33,923	13,599	511	275	1,821	1,424	396
34000	New Jersey	717,791	135,339	72,224	3,216	917	6,741	4,831	1,910
36000	New York	2,024,356	305,589	161,385	6,831	2,177	19,196	14,225	4,971
42000	Pennsylvania	1,958,170	354,117	163,694	5,278	2,509	15,311	12,462	2,850
44000	Rhode Island	145,263	18,775	10,263	464	161	1,028	733	295
50000	Vermont	115,674	18,072	9,642	356	178	949	723	226
51000	Virginia	1,189,969	198,469	102,114	4,041	1,427	8,097	6,554	1,543
	TOTAL	**8,272,208**	**1,374,385**	**702,752**	**27,709**	**10,402**	**68,318**	**52,171**	**16,147**

Inventory: **MANEVU - MOVES 2007 V2**
File(s): RPD,RPP,RPV lookup tables, scc-level VPOP & VMT developed by NESCAUM, PA, VADEQ & NYSDEC

Stationary area
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 SEMAP AREA Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	13,048	3,276	63,428	53,630	342	94,955	13,465	81,490
12000	Florida								
13000	Georgia	42,816	11,950	136,770	80,151	4,518	188,710	32,404	156,310
21000	Kentucky	55,448	12,693	75,095	52,322	15,590	117,120	27,629	89,486
28000	Mississippi	15,095	3,613	55,463	43,479	196	120,050	18,318	101,730
37000	North Carolina	47,378	12,715	152,800	169,410	8,365	27,303	14,407	12,897
45000	South Carolina	32,207	9,352	76,834	30,246	6,048	101,220	22,578	78,641
47000	Tennessee	44,670	12,422	111,110	35,274	14,415	107,350	21,319	86,027
54000	West Virginia	23,489	3,574	32,088	12,857	6,504	18,744	7,512	11,232
	TOTAL	**274,151**	**69,596**	**703,588**	**477,369**	**55,978**	**775,452**	**157,632**	**617,813**

Inventory: **SEMAP 2007**
File(s): arinv.semap_March2012.orl.txt

		2007 SEMAP AREA Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	15,152	3,940	79,030	62,426	431	115,317	16,160	99,157
12000	Florida	28,548	5,982	295,630	33,666	10,334	164,884	24,244	140,640
13000	Georgia	45,237	12,351	143,470	85,966	4,858	209,103	35,693	173,410
21000	Kentucky	55,450	12,693	75,100	52,332	15,590	117,120	27,629	89,491
28000	Mississippi	22,377	6,091	74,755	58,774	344	146,021	22,691	123,330
37000	North Carolina	47,379	12,715	152,830	169,440	8,365	27,304	14,407	12,897
45000	South Carolina	32,208	9,353	76,838	30,248	6,048	101,222	22,578	78,644
47000	Tennessee	44,671	12,422	111,120	35,279	14,415	107,352	21,320	86,032
54000	West Virginia	23,490	3,574	32,089	12,858	6,504	18,744	7,512	11,232
	TOTAL	**314,512**	**79,121**	**1,040,862**	**540,989**	**66,890**	**1,007,067**	**192,234**	**814,833**

Nonroad MAR
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

2007 SEMAP MAR Sources (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	2,533	17,001	873	8	285	580	538	42
12000	Florida								
13000	Georgia	5,017	32,944	1,472	14	2,279	1,223	1,145	78
21000	Kentucky	5,364	32,532	1,226	18	1,189	1,126	1,066	60
28000	Mississippi	2,350	14,792	526	8	556	492	466	26
37000	North Carolina	2,280	15,825	731	7	1,975	600	559	41
45000	South Carolina	1,483	10,914	587	5	1,388	434	396	37
47000	Tennessee	4,881	27,025	1,848	12	1,098	1,153	1,060	92
54000	West Virginia	4,836	28,925	1,018	13	1,238	1,005	954	51
	TOTAL	**28,743**	**179,958**	**8,282**	**86**	**10,008**	**6,612**	**6,185**	**427**

Inventory: **SEMAP 2007**
File(s): nrinv.alm.semap.base07.v093010.orl.txt

2007 SEMAP MAR Sources

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	6,265	36,452	1,383	16	1,935	1,323	1,251	72
12000	Florida	8,519	59,895	1,853	33	18,321	3,327	3,110	217
13000	Georgia	5,247	34,648	1,560	15	2,296	1,277	1,195	82
21000	Kentucky	5,364	32,532	1,226	18	1,189	1,126	1,066	60
28000	Mississippi	4,663	28,053	890	14	1,915	1,014	964	51
37000	North Carolina	2,280	15,825	731	7	1,975	600	559	41
45000	South Carolina	1,483	10,913	587	5	1,388	434	396	37
47000	Tennessee	4,881	27,025	1,848	12	1,098	1,153	1,060	92
54000	West Virginia	4,836	28,925	1,018	13	1,238	1,005	954	51
	TOTAL	**43,539**	**274,268**	**11,097**	**134**	**31,356**	**11,259**	**10,555**	**704**

Inventory: **SEMAP 2007**
File(s): nrinv.alm.semap.base07.v093010.orl.txt

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

2007 SEMAP AIRCRAFT Sources (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	8,291	350	642		40	160	113	47
12000	Florida								
13000	Georgia	26,845	4,678	2,664		596	413	331	82
21000	Kentucky	11,555	2,257	918		219	204	154	50
28000	Mississippi	6,437	153	492		18	127	88	38
37000	North Carolina	22,481	3,499	2,487		370	521	423	98
45000	South Carolina	11,116	586	930		68	210	149	61
47000	Tennessee	16,317	4,055	1,623		354	292	227	65
54000	West Virginia	3,607	59	257		7	72	50	22
	TOTAL	**106,648**	**15,637**	**10,012**	**0**	**1,672**	**1,999**	**1,535**	**464**

Inventory: **SEMAP 2007**
File(s): ptinv3d.alm.semap.base07.3k_ft.v093010.orl.txt

2007 SEMAP AIRCRAFT Sources

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	14,778	440	891	0	51	294	205	88
12000	Florida	57,330	10,746	5,060	0	992	1,028	772	256
13000	Georgia	28,081	4,759	2,772	0	608	433	346	87
21000	Kentucky	11,555	2,257	918	0	219	204	154	50
28000	Mississippi	8,520	219	665	0	26	168	117	51
37000	North Carolina	22,481	3,499	2,487	0	370	521	423	98
45000	South Carolina	11,116	586	930	0	68	210	149	61
47000	Tennessee	16,318	4,055	1,623	0	354	292	227	65
54000	West Virginia	3,607	59	257	0	7	72	50	22
	TOTAL	**173,785**	**26,620**	**15,602**	**0**	**2,695**	**3,222**	**2,443**	**779**

Inventory: **SEMAP 2007**
File(s): ptinv3d.alm.semap.base07.3k_ft.v093010.orl.txt

2007 SEMAP MAR Sources - TOTAL (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	10,823	17,351	1,515	8	325	740	651	89
12000	Florida								
13000	Georgia	31,862	37,622	4,135	14	2,875	1,636	1,476	159
21000	Kentucky	16,919	34,789	2,145	18	1,408	1,330	1,220	110
28000	Mississippi	8,787	14,945	1,018	8	574	619	554	65
37000	North Carolina	24,761	19,324	3,218	7	2,345	1,121	982	139
45000	South Carolina	12,599	11,500	1,517	5	1,456	644	545	98
47000	Tennessee	21,198	31,080	3,471	12	1,452	1,445	1,287	158
54000	West Virginia	8,442	28,984	1,275	13	1,246	1,076	1,003	73
	TOTAL	**135,392**	**195,595**	**18,294**	**86**	**11,680**	**8,611**	**7,720**	**891**

2007 SEMAP MAR Sources - TOTAL

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	21,043	36,892	2,275	16	1,986	1,617	1,456	161
12000	Florida	65,849	70,641	6,913	33	19,313	4,355	3,882	474
13000	Georgia	33,328	39,407	4,331	15	2,904	1,710	1,541	169
21000	Kentucky	16,919	34,789	2,145	18	1,408	1,330	1,220	110
28000	Mississippi	13,183	28,272	1,555	14	1,941	1,182	1,081	102
37000	North Carolina	24,761	19,324	3,218	7	2,345	1,121	982	139
45000	South Carolina	12,599	11,499	1,517	5	1,456	644	545	98
47000	Tennessee	21,199	31,080	3,471	12	1,452	1,445	1,287	158
54000	West Virginia	8,442	28,984	1,275	13	1,246	1,077	1,003	73
	TOTAL	**217,324**	**300,888**	**26,699**	**134**	**34,051**	**14,481**	**12,998**	**1,483**

Nonroad Mobile
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 SEMAP NONROAD Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	124,604	16,648	18,353	15	948	1,542	1,472	70
12000	Florida								
13000	Georgia	304,111	39,676	34,736	37	2,422	3,705	3,546	158
21000	Kentucky	130,166	18,668	18,118	16	1,022	1,692	1,620	73
28000	Mississippi	64,645	9,296	9,960	8	518	835	799	37
37000	North Carolina	302,976	43,052	39,332	38	2,453	3,798	3,635	163
45000	South Carolina	155,720	21,180	20,368	19	1,240	1,883	1,803	81
47000	Tennessee	196,553	25,431	25,415	22	1,253	2,212	2,114	98
54000	West Virginia	56,046	5,524	8,061	5	302	597	568	29
	TOTAL	**1,334,820**	**179,475**	**174,342**	**159**	**10,158**	**16,265**	**15,556**	**708**

Inventory: **SEMAP 2007**
File(s): arinv.nonroad.sesarm2007_${mon}_20110225.orl

		2007 SEMAP NONROAD Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	157,304	20,328	24,364	19	1,155	1,911	1,823	88
12000	Florida	656,343	85,680	99,423	86	5,595	8,331	7,979	351
13000	Georgia	316,758	41,139	37,196	38	2,508	3,858	3,692	166
21000	Kentucky	130,210	18,674	18,124	16	1,022	1,693	1,620	73
28000	Mississippi	96,477	12,787	16,511	12	722	1,224	1,167	57
37000	North Carolina	303,111	43,070	39,349	38	2,454	3,800	3,637	163
45000	South Carolina	155,753	21,185	20,373	19	1,240	1,884	1,803	81
47000	Tennessee	196,622	25,442	25,423	22	1,254	2,213	2,115	98
54000	West Virginia	56,057	5,525	8,063	5	303	597	568	29
	TOTAL	**2,068,634**	**273,829**	**288,826**	**254**	**16,252**	**25,510**	**24,404**	**1,106**

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

2007 SEMAP Non EGU Point Sources (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	88,275	59,961	30,427	1,892	41,257	20,848	15,452	5,396
12000	Florida								
13000	Georgia	61,795	41,206	31,892	4,255	42,716	13,847	12,120	1,727
21000	Kentucky	67,538	35,294	46,266	112	31,916	16,450	11,548	4,902
28000	Mississippi	17,120	33,949	17,115	1,110	10,020	7,564	5,401	2,164
37000	North Carolina	49,659	40,050	47,342	1,646	47,787	14,927	11,565	3,363
45000	South Carolina	52,424	29,706	28,656	1,122	34,899	9,174	6,684	2,490
47000	Tennessee	42,364	31,270	47,134	1,372	22,313	18,613	14,612	4,001
54000	West Virginia	54,878	33,339	11,286	323	34,731	5,236	3,153	2,083
	TOTAL	**434,053**	**304,775**	**260,118**	**11,830**	**265,639**	**106,659**	**80,534**	**26,126**

2007 SEMAP Non EGU Point Sources

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	106,610	72,368	37,818	2,028	68,248	24,408	18,296	6,112
12000	Florida	71,896	55,082	31,152	646	62,133	17,674	14,077	3,597
13000	Georgia	70,138	46,637	35,141	5,950	47,752	17,491	15,477	2,014
21000	Kentucky	67,538	35,294	46,266	112	31,916	16,450	11,548	4,902
28000	Mississippi	33,462	51,342	33,947	1,503	19,430	10,323	7,424	2,899
37000	North Carolina	49,659	40,050	47,342	1,646	47,787	14,927	11,564	3,363
45000	South Carolina	52,424	29,706	28,656	1,122	34,899	9,174	6,684	2,490
47000	Tennessee	42,364	31,270	47,134	1,372	22,313	18,613	14,612	4,001
54000	West Virginia	54,878	33,339	11,286	323	34,731	5,236	3,153	2,083
	TOTAL	**548,969**	**395,088**	**318,742**	**14,701**	**369,209**	**134,295**	**102,835**	**31,461**

Inventory: **SEMAP 2007**
File(s): ptinv.semap_v1.10a.1114111_nonCEM_noPM_FILL_CON.orl.txt

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Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

2007 SEMAP Non EGU - CAMD Point Sources (OTC Domain Only)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	1,130	3,398	6	0	11,028	230	149	81
12000	Florida								
13000	Georgia								
21000	Kentucky	159	170	10	0	2	54	54	0
28000	Mississippi								
37000	North Carolina								
45000	South Carolina	2,981	5,036	96	0	8,447	999	889	110
47000	Tennessee	1,800	10,341	56	0	28,125	504	374	130
54000	West Virginia	643	3,790	35	10	12,447	203	145	58
	TOTAL	**6,713**	**22,735**	**203**	**10**	**60,049**	**1,989**	**1,610**	**379**

2007 SEMAP Non EGU - CAMD Point Sources

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	1,130	3,398	6	0	11,028	0	149	81
12000	Florida								
13000	Georgia								
21000	Kentucky	159	170	10	0	2	0	54	0
28000	Mississippi								
37000	North Carolina								
45000	South Carolina	2,981	5,036	96	0	8,447	0	889	110
47000	Tennessee	1,800	10,341	56	0	28,125	0	374	130
54000	West Virginia	643	3,790	35	10	12,447	0	145	58
	TOTAL	**6,713**	**22,735**	**203**	**10**	**60,049**	**0**	**1,610**	**379**

Inventory: **SEMAP 2007**
File(s): ptinv.semap_v1.10a.1114111_CEM_nonEGU-CAMD_noPM_FILL_CON.orl.txt

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2007 SEMAP Non EGU Point Sources - TOTAL (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	89,405	63,359	30,433	1,892	52,285	21,078	15,601	5,477
12000	Florida								
13000	Georgia	61,795	41,206	31,892	4,255	42,716	13,847	12,120	1,727
21000	Kentucky	67,697	35,464	46,276	112	31,918	16,504	11,602	4,902
28000	Mississippi	17,120	33,949	17,115	1,110	10,020	7,564	5,401	2,164
37000	North Carolina	49,659	40,050	47,342	1,646	47,787	14,927	11,565	3,363
45000	South Carolina	55,405	34,742	28,752	1,122	43,346	10,172	7,572	2,600
47000	Tennessee	44,164	41,611	47,190	1,372	50,438	19,117	14,986	4,131
54000	West Virginia	55,521	37,129	11,321	333	47,178	5,439	3,298	2,141
	TOTAL	**440,766**	**327,510**	**260,321**	**11,840**	**325,688**	**108,647**	**82,144**	**26,505**

2007 SEMAP Non EGU Point Sources - TOTAL (OTC Domain ONLY)

#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	107,740	75,766	37,824	2,028	79,276	24,408	18,445	6,193
12000	Florida	71,896	55,082	31,152	646	62,133	17,674	14,077	3,597
13000	Georgia	70,138	46,637	35,141	5,950	47,752	17,491	15,477	2,014
21000	Kentucky	67,697	35,464	46,276	112	31,918	16,450	11,602	4,902
28000	Mississippi	33,462	51,342	33,947	1,503	19,430	10,323	7,424	2,899
37000	North Carolina	49,659	40,050	47,342	1,646	47,787	14,927	11,564	3,363
45000	South Carolina	55,405	34,742	28,752	1,122	43,346	9,174	7,572	2,600
47000	Tennessee	44,164	41,611	47,190	1,372	50,438	18,613	14,986	4,131
54000	West Virginia	55,521	37,129	11,321	333	47,178	5,236	3,298	2,141
	TOTAL	**555,682**	**417,823**	**318,945**	**14,710**	**429,258**	**134,295**	**104,445**	**31,839**

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 SEMAP EGU - CAMD Point Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	9,592	95,532	840	104	379,810	7,437	4,885	2,552
12000	Florida								
13000	Georgia	12,410	107,400	1,576	96	635,610	15,713	9,578	6,134
21000	Kentucky	14,856	174,750	1,402	1	378,500	12,602	9,070	3,532
28000	Mississippi	4,910	11,427	327	78	4,228	804	708	96
37000	North Carolina	17,026	60,221	1,003	61	372,630	27,979	21,826	6,154
45000	South Carolina	4,970	46,478	529	3	172,780	20,409	15,913	4,496
47000	Tennessee	6,963	102,990	905	57	237,230	8,676	7,099	1,577
54000	West Virginia	9,709	151,500	1,181	32	381,170	29,362	27,119	2,243
	TOTAL	**80,435**	**750,298**	**7,765**	**432**	**2,561,958**	**122,981**	**96,199**	**26,783**

Inventory: **SEMAP 2007**
File(s): ptinv.semap_v1.10a.1114111_CEM_EGU-CAMD_noPM_FILL_CON.NoVA.orl.txt

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 SEMAP EGU - CAMD Point Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	11,603	122,200	1,053	163	447,340	9,592	6,239	3,353
12000	Florida	39,384	182,390	2,531	1,016	317,460	18,087	14,331	3,756
13000	Georgia	12,410	107,400	1,576	96	635,610	15,713	9,578	6,134
21000	Kentucky	14,856	174,750	1,402	1	378,500	12,602	9,070	3,532
28000	Mississippi	6,832	46,841	640	137	75,547	2,027	1,289	738
37000	North Carolina	17,026	60,221	1,003	61	372,630	27,980	21,826	6,154
45000	South Carolina	4,970	46,478	529	3	172,780	20,409	15,913	4,496
47000	Tennessee	6,963	102,990	905	57	237,230	8,676	7,099	1,577
54000	West Virginia	9,709	151,500	1,181	32	381,170	29,362	27,119	2,243
	TOTAL	**123,752**	**994,770**	**10,821**	**1,567**	**3,018,267**	**144,448**	**112,465**	**31,983**

Onroad Mobile
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 SEMAP ONROAD Sources (OTC Domain Only)*							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	909,450	172,668	77,078	2,823	1,509	7,861	5,887	1,974
12000	Florida								
13000	Georgia	1,909,391	396,837	160,914	5,416	6,407	17,271	13,681	3,591
21000	Kentucky	704,011	133,425	55,883	2,172	1,022	5,524	4,363	1,161
28000	Mississippi	525,375	117,225	45,106	1,809	920	5,030	4,061	968
37000	North Carolina	2,110,972	280,670	137,065	5,053	2,534	9,411	7,381	2,030
45000	South Carolina	745,475	144,480	54,023	2,303	1,313	6,413	4,994	1,419
47000	Tennessee	1,197,665	248,804	86,813	3,322	1,857	9,177	7,781	1,395
54000	West Virginia	357,581	59,968	25,205	875	487	2,397	1,926	470
	TOTAL	**8,459,921**	**1,554,076**	**642,087**	**23,774**	**16,049**	**63,084**	**50,074**	**13,009**

Inventory: **SEMAP 2007**
File(s): RPD,RPP,RPV lookup tables, scc-level VPOP & VMT developed by ALPINE GEOPHYSICS & UNC

*** Because of differences in reporting between SMOKE-MOVES and conventional SMOKE reports, the fraction of emissions falling outside the OTC domain could not be provided, hence only Florida (where the entire state is outside the domain) was removed from the above table. States such as Georgia, Alabama etc. which fall on the domain border still have the entire states' motor vehicle emissions in the above totals.**

		2007 SEMAP ONROAD Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
1000	Alabama	909,450	172,668	77,078	2,823	1,509	7,861	5,887	1,974
12000	Florida	2,565,451	498,935	222,897	9,676	5,151	20,881	14,480	6,401
13000	Georgia	1,909,391	396,837	160,914	5,416	6,407	17,271	13,681	3,591
21000	Kentucky	704,011	133,425	55,883	2,172	1,022	5,524	4,363	1,161
28000	Mississippi	525,375	117,225	45,106	1,809	920	5,030	4,061	968
37000	North Carolina	2,110,972	280,670	137,065	5,053	2,534	9,411	7,381	2,030
45000	South Carolina	745,475	144,480	54,023	2,303	1,313	6,413	4,994	1,419
47000	Tennessee	1,197,665	248,804	86,813	3,322	1,857	9,177	7,781	1,395
54000	West Virginia	357,581	59,968	25,205	875	487	2,397	1,926	470
	TOTAL	**11,025,372**	**2,053,011**	**864,984**	**33,449**	**21,201**	**83,965**	**64,555**	**19,410**

VIRGINIA ONROAD
2007

		2007 VIRGINIA ONROAD Sources								
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**	
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	
51000	Virginia	1,188,911	196,744	96,297	4,041	1,429	8,051	6,512	1,539	**SEAMP Based**
51000	Virginia	1,189,969	198,469	102,114	4,041	1,427	8,097	6,554	1,543	**MANEVU Based**

Inventory: **SEMAP 2007**
File(s): RPD,RPP,RPV lookup tables, scc-level VPOP & VMT developed by ALPINE GEOPHYSICS & UNC
MOVES Lookup tables as well as SMOKE-MOVES processing done using **TEMP2** from SEMAP WRF Meteorological data files

Inventory: **MOVES 2007 V2**
File(s): RPD,RPP,RPV lookup tables, scc-level VPOP & VMT developed by NESCAUM, PA, VADEQ & NYSDEC
MOVES Lookup tables as well as SMOKE-MOVES processing done using **TEMPG** from OTC WRF Meteorological data files

Stationary area
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 LADCO AREA Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	94,141	45,341	202,270	122,030	4,581	380,561	82,051	298,510
18000	Indiana	51,987	21,559	147,060	44,098	15,927	187,618	16,378	171,240
26000	Michigan	76,790	32,200	158,150	4,111	12,347	8,316	8,316	0
39000	Ohio	138,070	36,221	165,160	87,126	12,290	149,957	33,197	116,760
55000	Wisconsin	123,520	25,867	118,540	84,926	5,625	80,381	24,799	55,582
	TOTAL	**484,508**	**161,188**	**791,180**	**342,291**	**50,769**	**806,833**	**164,741**	**642,092**

Inventory: **LADCO 2007**
File(s): nonpt.mrpo.baseCv7.annual.orl.txt

Nonroad MAR
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 LADCO MAR Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	9,960	66,157	2,932	33	2,507	2,050	1,889	161
18000	Indiana	4,006	26,756	1,253	13	768	867	799	68
26000	Michigan	22,137	23,397	2,417	11	4,753	839	776	64
39000	Ohio	6,196	42,472	2,082	20	1,562	1,425	1,316	109
55000	Wisconsin	2,270	16,316	761	8	1,080	547	505	42
	TOTAL	**44,569**	**175,098**	**9,445**	**85**	**10,670**	**5,729**	**5,285**	**444**

Inventory: **LADCO 2007**
File(s): nonpt.mrpo_alm.baseCv7.annual.orl.txt

Nonroad Mobile
Processed as Area sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 LADCO NONROAD Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	463,185	58,437	73,785	60	3,391	5,773	5,508	265
18000	Indiana	219,533	32,850	32,008	30	1,838	2,901	2,774	127
26000	Michigan	737,081	42,541	229,695	86	2,332	8,050	7,528	522
39000	Ohio	422,962	47,592	51,972	45	2,629	4,271	4,073	198
55000	Wisconsin	497,532	30,805	156,092	59	1,689	5,665	5,307	358
	TOTAL	**2,340,292**	**212,225**	**543,552**	**280**	**11,880**	**26,660**	**25,190**	**1,471**

Inventory: **LADCO 2007**
File(s): nonpt.mrpo_alm.baseCv7.annual.orl.txt

Processed as Point sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 LADCO Non EGU Point Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	78,210	81,818	49,651	1,293	99,516	20,020	12,004	8,016
18000	Indiana	336,720	69,378	37,585	841	81,532	37,356	27,401	9,955
26000	Michigan	79,582	79,007	27,960	779	59,604	20,980	13,389	7,591
39000	Ohio	248,130	66,205	31,227	3,011	133,960	25,754	21,611	4,143
55000	Wisconsin	63,519	40,814	30,435	497	59,819	9,384	3,028	6,356
	TOTAL	**806,161**	**337,222**	**176,858**	**6,421**	**434,431**	**113,494**	**77,433**	**36,061**

Inventory: **LADCO 2007**
File(s): ptinv.nonCEM_CAPs.2008.LADCO.27Jun2012.orl.txt

Processed as Point sources
Base inventory year 2007
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 LADCO EGU Point Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
17000	Illinois	16,954	124,600	1,668	230	299,190	9,148	7,351	1,797
18000	Indiana	15,573	200,460	1,959	369	722,520	39,056	32,153	6,903
26000	Michigan	11,056	110,460	1,135	152	349,860	4,297	2,298	1,999
39000	Ohio	15,657	237,970	1,320	94	956,020	49,393	44,253	5,140
55000	Wisconsin	12,184	52,803	1,057	362	137,770	3,335	623	2,712
	TOTAL	**71,424**	**726,293**	**7,138**	**1,207**	**2,465,360**	**105,228**	**86,678**	**18,550**

Inventory: **LADCO 2007**
File(s): ptinv.CEM_CAPs.2007.LADCO.27Jun2012.orl.txt

Processed as Mobile sources
Base inventory year 2008
No gridding matrix applied
No speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 LADCO EGU Point Sources							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/day]	[tons/day]	[tons/day]	[tons/day]	[tons/day]	[tons/day]	[tons/day]	[tons/day]
17000	Illinois	1,616,841	256,788	122,943	3,813	4,306	17,423	13,979	3,444
18000	Indiana	1,166,102	181,347	83,793	2,704	2,746	10,559	8,629	1,929
26000	Michigan	1,612,899	259,493	135,727	3,662	4,259	17,529	14,337	3,192
39000	Ohio	2,228,909	289,372	156,731	4,690	3,906	17,298	14,243	3,055
55000	Wisconsin	898,667	119,786	71,252	2,012	1,755	7,914	6,492	1,422
	Total	**7,523,417**	**1,106,786**	**570,447**	**16,881**	**16,971**	**70,723**	**57,680**	**13,042**

Inventory: **NEI 2008 V2**
File(s): 2008NEI_v2_onroad_EPAonly_${mon}_CAP_ladco_ORL.csv

Stationary area
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 CENRAP AREA Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	89,266	11,862	65,619	100,099	1,033	185,832	39,605	146,233
19000	Iowa	35,186	3,913	44,561	146,252	1,919	228,276	42,781	185,489
20000	Kansas								
22000	Louisiana	27,661	6,455	24,889	18,975	536	25,763	6,878	18,885
27000	Minnesota	82,139	13,037	61,261	41,359	5,215	139,616	30,158	109,459
29000	Missouri	84,423	13,547	91,392	95,016	30,356	349,072	57,947	291,145
31000	Nebraska								
40000	Oklahoma								
48000	Texas	2,903	4,039	20,327	1,083	23	4,528	703	3,825
	TOTAL	**321,577**	**52,852**	**308,049**	**402,783**	**39,082**	**933,086**	**178,072**	**755,035**

Inventory: **NEI 2008 V2**
File(s): CAP_BAFM_2008NEI_v2_NONPOINT_20120127_03feb2012_v0.csv

		2007 CENRAP AREA Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	102,278	13,063	79,275	120,618	1,179	202,226	42,887	159,338
19000	Iowa	51,713	5,638	69,350	296,438	2,210	404,149	76,167	327,983
20000	Kansas	81,939	19,289	74,639	156,234	7,485	601,239	101,779	499,460
22000	Louisiana	142,687	30,248	142,098	64,375	2,570	108,590	28,906	79,684
27000	Minnesota	162,886	19,152	112,977	186,055	8,362	455,476	90,265	365,212
29000	Missouri	105,388	18,763	120,481	125,988	44,416	453,830	74,684	379,146
31000	Nebraska	25,763	2,892	41,004	176,647	236	394,200	63,903	330,297
40000	Oklahoma	113,455	84,424	247,807	98,030	4,535	449,878	69,439	380,439
48000	Texas	262,176	323,445	1,721,813	290,755	1,556	1,409,200	208,179	1,201,021
	TOTAL	**1,048,284**	**516,914**	**2,609,443**	**1,515,140**	**72,549**	**4,478,789**	**756,208**	**3,722,581**

Nonroad Mobile
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 CENRAP MAR Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	8,750	22,123	1,078	12	577	860	718	142
19000	Iowa	4,421	16,617	860	8	305	602	530	72
20000	Kansas								
22000	Louisiana	2,259	5,694	264	3	156	212	176	36
27000	Minnesota	8,872	26,916	1,118	10	1,562	991	889	102
29000	Missouri	9,542	36,966	1,688	18	1,148	1,331	1,205	126
31000	Nebraska								
40000	Oklahoma								
48000	Texas	52	129	11	0	11	5	5	1
	TOTAL	**33,896**	**108,445**	**5,018**	**50**	**3,758**	**4,000**	**3,522**	**479**

Inventory: **NEI 2008 V2**
File(s): (AREA): CAP_BAFM_2008NEI_v2_NONPOINT_20120127_03feb2012_v0.csv
(NONROAD): CAP_BAFM_2008NEI_v2_NONROAD_20111230_11jan2012_v0_cenrap.csv
(POINT): 2008NEI_v2_POINT_20120202_for2007platform_ptnonipm_FF10_22feb2012_v4_CAP_cenrap.csv

		2007 CENRAP MAR Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	9,984	24,214	1,208	12	616	941	778	163
19000	Iowa	6,756	26,632	1,394	13	413	959	844	114
20000	Kansas	9,626	36,141	1,963	16	405	1,287	1,110	177
22000	Louisiana	36,315	168,475	4,436	77	20,835	7,058	6,633	425
27000	Minnesota	12,901	37,619	1,708	15	1,680	1,394	1,216	178
29000	Missouri	13,129	49,145	2,423	22	1,380	1,753	1,576	177
31000	Nebraska	13,250	72,151	3,761	33	790	2,484	2,251	232
40000	Oklahoma	9,452	20,305	1,208	9	295	795	631	164
48000	Texas	97,633	138,401	13,392	45	21,537	6,826	6,113	713
	TOTAL	**209,045**	**573,082**	**31,493**	**242**	**47,950**	**23,497**	**21,153**	**2,344**

Nonroad Mobile
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 CENRAP NONROAD Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	173,570	21,202	30,010	22	397	2,288	2,183	105
19000	Iowa	156,284	32,613	24,137	30	585	2,932	2,819	113
20000	Kansas								
22000	Louisiana	50,168	5,588	6,794	6	109	575	549	26
27000	Minnesota	232,543	26,552	43,997	30	460	2,672	2,542	130
29000	Missouri	279,551	35,100	41,908	36	640	3,461	3,308	153
31000	Nebraska								
40000	Oklahoma								
48000	Texas	4,151	621	605	4	15	54	52	2
	TOTAL	**896,267**	**121,675**	**147,450**	**129**	**2,205**	**11,982**	**11,452**	**530**

Inventory: **NEI 2008 V2**
File(s): (NONROAD): CAP_BAFM_2008NEI_v2_NONROAD_20111230_11jan2012_v0_cenrap.csv

		2007 CENRAP NONROAD Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	202,460	24,737	32,546	25	462	2,577	2,461	116
19000	Iowa	230,626	57,023	37,294	52	1,049	5,209	5,015	194
20000	Kansas	178,771	41,891	19,643	37	813	3,916	3,778	138
22000	Louisiana	289,439	25,689	52,924	31	470	2,694	2,556	137
27000	Minnesota	389,589	60,816	86,009	65	1,102	6,290	6,006	284
29000	Missouri	363,881	47,182	51,340	48	871	4,594	4,396	198
31000	Nebraska	112,080	35,841	15,056	30	696	3,356	3,240	116
40000	Oklahoma	234,729	27,577	30,851	29	515	2,699	2,582	117
48000	Texas	1,056,072	162,298	152,081	1,120	3,463	14,995	14,418	577
	TOTAL	**3,057,647**	**483,052**	**477,745**	**1,438**	**9,442**	**46,330**	**44,452**	**1,878**

Processed as Point sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 CENRAP Non EGU POINT Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	31,845	31,221	25,659	927	10,786	8,238	6,007	2,231
19000	Iowa	23,900	30,754	16,926	2,214	50,766	7,637	4,780	2,857
20000	Kansas								
22000	Louisiana	15,844	20,766	13,249	673	6,727	6,816	6,031	785
27000	Minnesota	14,616	43,371	11,636	1,083	17,014	14,659	9,387	5,271
29000	Missouri	70,102	33,253	11,481	1,480	83,685	7,392	4,114	3,278
31000	Nebraska								
40000	Oklahoma								
48000	Texas	1,708	2,244	2,291	97	80	655	375	280
	TOTAL	**158,014**	**161,609**	**81,243**	**6,473**	**169,059**	**45,396**	**30,693**	**14,703**

Inventory: **NEI 2008 V2**
File(s): 2008NEI_v2_POINT_20120202_for2007platform_ptnonipm_FF10_22feb2012_v4_CAP_cenrap.csv

		2007 CENRAP Non EGU POINT Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	34,002	37,022	27,254	927	13,980	8,852	6,382	2,470
19000	Iowa	26,668	40,553	21,673	3,397	51,596	8,944	5,766	3,178
20000	Kansas	19,993	52,773	17,773	1,576	7,281	4,918	3,600	1,318
22000	Louisiana	95,590	142,930	67,227	6,233	137,871	51,710	45,718	5,992
27000	Minnesota	22,610	56,518	21,988	1,854	23,790	20,282	12,802	7,481
29000	Missouri	73,640	39,004	16,010	1,513	90,614	8,992	5,223	3,769
31000	Nebraska	7,967	13,706	3,632	1,021	2,524	3,113	2,053	1,059
40000	Oklahoma	35,239	63,227	24,521	2,340	29,320	8,297	5,262	3,036
48000	Texas	184,153	217,260	110,506	2,240	119,397	36,775	29,804	6,971
	TOTAL	**499,862**	**662,993**	**310,586**	**21,101**	**476,373**	**151,883**	**116,609**	**35,273**

Processed as Point sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2007 CENRAP EGU POINT Sources (OTC Domain ONLY)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	4,102	32,238	437	254	63,522	1,676	862	814
19000	Iowa	15,654	30,228	289	28	68,644	4,765	3,993	771
20000	Kansas								
22000	Louisiana	1,778	5,881	128	165	11,525	1,077	577	500
27000	Minnesota	3,326	31,080	215	140	31,673	1,914	668	1,246
29000	Missouri	16,580	85,125	1,358	44	222,360	7,425	4,689	2,737
31000	Nebraska								
40000	Oklahoma								
48000	Texas								
	TOTAL	**41,439**	**184,552**	**2,427**	**631**	**397,724**	**16,857**	**10,789**	**6,068**

Inventory: **NEI 2008 V2**
File(s): 2008NEI_v2_POINT_20120202_for2007platform_ptipm_FF10_11apr2012_v1_CAP_cenrap.csv

		2007 CENRAP EGU POINT Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	4,293	37,584	506	255	72,244	2,110	1,245	865
19000	Iowa	28,847	53,326	644	33	130,490	8,166	5,679	2,487
20000	Kansas	8,843	69,926	817	385	115,770	3,581	1,922	1,659
22000	Louisiana	34,794	52,945	1,129	1,477	84,118	6,814	4,112	2,701
27000	Minnesota	7,192	73,812	607	195	83,182	8,201	3,374	4,827
29000	Missouri	21,434	112,910	1,680	155	276,520	9,722	6,287	3,435
31000	Nebraska	3,289	40,637	423	180	68,925	2,128	1,735	393
40000	Oklahoma	12,141	78,180	1,012	706	106,640	5,826	3,558	2,268
48000	Texas	232,980	162,690	3,677	4,549	503,600	21,878	12,039	9,839
	TOTAL	**353,814**	**682,010**	**10,497**	**7,935**	**1,441,489**	**68,425**	**39,952**	**28,474**

Processed as Mobile sources
Base inventory year 2008
No gridding matrix applied
No speciation matrix applied
No temporal factors applied
Average day data basis in report

		2007 CENRAP ONROAD Mobile Sources (OTC Domain Only)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM25	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	475,741	79,468	37,741	1,120	995	3,840	3,206	634
19000	Iowa	465,667	61,338	34,527	909	750	3,758	3,305	453
20000	Kansas								
22000	Louisiana	132,320	27,257	10,930	421	433	1,365	1,104	261
27000	Minnesota	880,709	108,628	66,087	1,619	1,380	8,742	7,342	1,400
29000	Missouri	878,957	137,627	66,454	2,102	2,027	7,692	6,320	1,372
31000	Nebraska								
40000	Oklahoma								
48000	Texas	9,828	3,129	836	31	62	181	154	27
	Total	**2,843,221**	**417,447**	**216,575**	**6,201**	**5,647**	**25,578**	**21,432**	**4,146**

Inventory: **NEI 2008 V2**
File(s): 2008NEI_v2_onroad_EPAonly_${mon}_CAP_cenrap_ORL.csv

		2007 CENRAP ONROAD Mobile Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM25	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
5000	Arkansas	574,182	95,834	45,714	1,347	1,205	4,720	3,924	796
19000	Iowa	675,068	90,173	49,879	1,308	1,108	5,492	4,856	636
20000	Kansas	543,960	77,617	38,946	1,196	1,124	4,402	3,646	756
22000	Louisiana	520,855	108,511	42,832	1,794	1,787	5,574	4,399	1,175
27000	Minnesota	1,431,457	165,553	109,330	2,415	1,997	13,472	11,485	1,987
29000	Missouri	1,252,534	190,377	93,105	2,856	2,773	10,728	8,824	1,904
31000	Nebraska	342,188	56,728	25,392	725	921	3,433	2,892	541
40000	Oklahoma	711,166	121,019	50,627	1,846	1,976	6,431	5,208	1,223
48000	Texas	2,536,276	589,986	226,442	9,159	10,432	32,986	26,401	6,585
	Total	**8,587,684**	**1,495,799**	**682,267**	**22,647**	**23,323**	**87,237**	**71,635**	**15,603**

Stationary area
Processed as Area sources
Base inventory year 2005
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2005 CANADIAN AREA, MAR & NONROAD Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
110000	Newfoundland	94,444	13,115	23,625	582	4,606	22,011	10,862	11,149
111000	Prince Edward Island	38,865	3,921	14,180	2,404	2,195	11,795	4,040	7,756
112000	Nova Scotia	133,650	18,037	42,329	6,827	11,096	41,821	16,488	25,333
113000	New Brunswick	140,010	17,456	50,488	4,304	9,378	44,903	18,896	26,007
124000	Quebec	914,720	137,920	385,160	87,464	49,006	318,500	101,100	217,400
135000	Ontario	1,345,900	276,040	560,100	108,900	37,756	477,400	131,730	345,670
146000	Manitoba	153,200	45,869	173,820	66,941	2,985	204,040	36,640	167,400
147000	Saskatchewan	169,460	90,976	351,080	116,460	10,707	407,021	61,961	345,060
148000	Alberta	407,050	173,370	649,580	144,640	28,977	944,390	166,560	777,830
159000	British Columbia	449,560	180,770	186,890	25,917	35,041	169,718	56,908	112,810
160000	Yukon	6,074	594	1,500	8	42	2,102	574	1,528
161000	NW Territories	15,965	4,115	3,254	27	808	2,360	918	1,442
162000	Nunavut	46	282	182	4	61	710	150	560
	TOTAL	**3,868,944**	**962,465**	**2,442,187**	**564,478**	**192,656**	**2,646,771**	**606,827**	**2,039,944**

Inventory: **OME 2005**
File(s): AREA+OFFROAD_CA_2005_FINAL_SMOKE_READY_IDA.txt

		2005 CANADIAN AREA, MAR & NONROAD Sources (OTC Domain Only)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
113000	New Brunswick	140,010	17,456	50,488	4,304	9,378	44,903	18,896	26,007
124000	Quebec	914,720	137,920	385,160	87,464	49,006	318,500	101,100	217,400
135000	Ontario	1,345,900	276,040	560,100	108,900	37,756	477,400	131,730	345,670
	TOTAL	**2,400,630**	**431,416**	**995,748**	**200,668**	**96,140**	**840,803**	**251,726**	**589,077**

Processed as Point sources
Base inventory year 2005
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2005 CANADIAN EGU & NON-EGU POINT Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
110000	Newfoundland	13,541	4,433	40,522	8	41,481	6,378	872	5,506
111000	Prince Edward Island	139	42	9	13	1,275	130	2	127
112000	Nova Scotia	6,490	1,925	371	80	127,850	3,283	37	3,245
113000	New Brunswick	25,216	163	159	111	91,294	6,269	8	6,262
124000	Quebec	465,480	2,843	1,612	1,852	193,710	26,313	108	26,205
135000	Ontario	157,130	4,908	2,360	4,990	526,420	34,154	199	33,955
146000	Manitoba	9,106	874	4,967	1,723	427,460	5,658	91	5,567
147000	Saskatchewan	52,650	13,423	98,142	1,309	133,320	8,024	841	7,183
148000	Alberta	514,940	365,880	275,420	13,465	473,350	21,462	4,145	17,317
159000	British Columbia	353,300	54,216	17,850	2,611	59,740	16,359	719	15,640
160000	Yukon	249	106	18	1	358	4	4	0
161000	NW Territories	1,702	636	324	4	303	277	26	251
162000	Nunavut	796	0	0	0	144	266	0	266
	TOTAL	**1,600,738**	**449,448**	**441,752**	**26,166**	**2,076,705**	**128,577**	**7,053**	**121,524**

Inventory: **OME 2005**
File(s): SPECIATED_POINT_SAPRC99_2005_STACK_CORRECT_NONVOC_orl.txt
POINT_2005_CB05_VOConly_ORL_STACKS_CORRECT_orl.txt
ORL_POINT_UOG2005.csv
airport.Can2005.withheader.txt

		2005 CANADIAN EGU & NON-EGU POINT Sources (OTC Domain Only)							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
113000	New Brunswick	25,216	163	159	111	91,294	6,269	8	6,262
124000	Quebec	465,480	2,843	1,612	1,852	193,710	26,313	108	26,205
135000	Ontario	157,130	4,908	2,360	4,990	526,420	34,154	199	33,955
	TOTAL	**647,826**	**7,914**	**4,130**	**6,953**	**811,424**	**66,737**	**315**	**66,422**

Processed as Mobile sources
Base inventory year 2005
No gridding matrix applied
Mass speciation matrix applied
Temporal factors applied for episode from April 1 to October 31
Annual total data basis in report

Region	State	2005 Canadian Mobile Source Emissions (based on 2005 MOBILE6 Activity and Provided MOBILE6 Inputs) (OTC Domain ONLY)							
		CO [Tons/yr]	**NOX** [Tons/yr]	**VOC** [Tons/yr]	**NH3** [Tons/yr]	**SO2** [Tons/yr]	**PM10** [Tons/yr]	**PM25** [Tons/yr]	**PMC** [Tons/yr]
110000	Newfoundland								
111000	Prince Edward Island								
112000	Nova Scotia								
113000	New Brunswick	46,373	6,565	3,923	292	177	201	142	59
124000	Quebec	728,741	116,388	66,193	4,845	3,397	3,699	2,663	1,036
135000	Ontario	978,850	120,583	89,367	8,502	2,752	3,782	2,386	1,396
146000	Manitoba								
147000	Saskatchewan								
148000	Alberta								
159000	British Columbia								
160000	Yukon								
161000	NW Territories								
162000	Nunavut								
	TOTAL	**1,753,963**	**243,536**	**159,482**	**13,640**	**6,326**	**7,682**	**5,191**	**2,491**

Inventory: **OME 2005**
Inventory File: AREA+OFFROAD_CA_2005_FINAL_SMOKE_READY_IDA.txt

Stationary area
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2008 Anthropogenic Chlorine	
#		**HCL**	**CL_2**
#Region	State	[tons/yr]	[tons/yr]
9000	Connecticut	373	0
10000	Delaware	1,554	2
11000	District of Columbia	0	0
23000	Maine	474	16
24000	Maryland	1,906	0
25000	Massachusetts	382	1
33000	New Hampshire	1,250	2
34000	New Jersey	1,126	5
36000	New York	2,689	30
42000	Pennsylvania	10,238	44
44000	Rhode Island	6	0
50000	Vermont	55	2
51000	Virginia	6,503	29
	MANEVU TOTAL	**26,556**	**133**
1000	Alabama	8,849	80
12000	Florida	7,488	29
13000	Georgia	7,328	19
21000	Kentucky	7,039	32
28000	Mississippi	4,067	99
37000	North Carolina	6,742	107
45000	South Carolina	4,139	25
47000	Tennessee	12,900	119
54000	West Virginia	7,231	11
	SEMAP TOTAL	**65,783**	**522**
17000	Illinois	3,243	136
18000	Indiana	6,832	16
26000	Michigan	8,000	22
39000	Ohio	12,902	12
55000	Wisconsin	3,111	72
	LADCO TOTAL	**34,089**	**258**
5000	Arkansas	1,304	207
19000	Iowa	1,864	67
20000	Kansas	559	10
22000	Louisiana	2,362	88
27000	Minnesota	2,677	24
29000	Missouri	2,524	6
31000	Nebraska	2,116	24
40000	Oklahoma	987	11
48000	Texas	3,975	96
	CENRAP TOTAL	**18,367**	**531**

Inventory: **NEI 2008 V2**
File(s): (AREA): CAP_BAFM_2008NEI_v2_NONPOINT_20120127_03feb2012_v0_CL.csv
(POINT): CAP_BAFM_2008NEI_v2_POINT_20120202_09feb2012_v1_CL.csv

Processed as Point sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		2008 Category 3 MARINE VESSEL Sources - OTC Domain ONLY							
#		**CO**	**NOX**	**VOC**	**NH3**	**SO2**	**PM10**	**PM2_5**	**PMC**
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
85000	Offshore to EEZ	15,092	181,620	6,413	0	114,490	15,123	13,931	1,193
98000	Non-US SECA C3	1,538	18,561	653	0	11,422	1,540	1,416	123
112000	Nova Scotia	70	844	30	0	520	70	65	6
135000	Ontario	398	4,979	169	0	2,961	399	367	32
	TOTAL	**17,099**	**206,004**	**7,265**	**0**	**129,393**	**17,132**	**15,779**	**1,353**

Inventory: **EPA CHIEF 2005**
File(s): ptinv_eca_imo_CANADA_caps_2008_29SEP2011_orl.txt
ptinv_eca_imo_caps_2008_29SEP2011_no_counties_orl.txt

		2008 Category 3 MARINE VESSEL Sources							
#		CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
#Region	State	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
85000	Offshore to EEZ	56,186	680,110	23,885	0	421,890	56,468	51,906	4,562
98000	Non-US SECA C3	165,930	1,998,100	70,313	0	1,231,500	165,645	152,360	13,285
112000	Nova Scotia	10,019	120,630	4,255	0	74,406	10,028	9,237	791
135000	Ontario	398	4,979	169	0	2,961	399	367	32
159000	British Columbia	5,107	61,897	2,171	0	38,070	5,137	4,661	476
	TOTAL	**237,640**	**2,865,716**	**100,793**	**0**	**1,768,827**	**237,676**	**218,530**	**19,146**

Stationary area
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

		No-Griding										Gridding								
#		[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]		#		[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year]
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC		#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
5000	Arkansas	106,010	36,878	80,252	120,630	1,748	203,023	43,633	159,390		5000	Arkansas	92,735	33,693	66,512	100,110	1,577	186,570	40,296	146,280
19000	Iowa	55,635	31,916	70,606	296,450	2,583	405,038	76,988	328,050		19000	Iowa	37,656	20,239	45,320	146,260	2,189	228,830	43,295	185,530
20000	Kansas	87,066	55,127	76,397	156,250	7,859	602,420	102,860	499,560		20000	Kansas								
22000	Louisiana	172,640	197,930	146,250	64,452	23,315	115,487	35,501	79,986		22000	Louisiana	28,513	12,040	25,099	18,978	680	25,943	7,046	18,896
27000	Minnesota	168,710	54,534	114,230	186,070	9,809	456,693	91,413	365,280		27000	Minnesota	86,439	37,810	62,004	41,369	6,554	140,490	30,991	109,500
29000	Missouri	112,930	66,012	122,440	126,010	45,583	455,439	76,189	379,250	AREA + MAR	29000	Missouri	90,314	49,391	92,817	95,033	31,379	350,310	59,110	291,220
31000	Nebraska	36,277	74,519	44,585	176,680	979	396,608	66,118	330,490		31000	Nebraska								
40000	Oklahoma	116,300	104,150	248,750	98,039	4,763	450,524	70,034	380,490		40000	Oklahoma								
48000	Texas	281,860	440,790	1,726,300	290,800	20,846	1,414,230	212,930	1,201,300		48000	Texas	2,921	4,165	20,334	1,083	34	4,532	707	3,825
5000	Arkansas	3,732	23,815	977	12	569	798	746	52		5000	Arkansas	3,469	21,831	893	11	544	738	691	47
19000	Iowa	3,922	26,278	1,257	13	373	889	821	67		19000	Iowa	2,470	16,326	759	8	270	554	514	41
20000	Kansas	5,127	35,838	1,758	16	374	1,181	1,081	100		20000	Kansas								
22000	Louisiana	29,953	167,682	4,152	77	20,745	6,897	6,595	303		22000	Louisiana	853	5,585	210	3	144	180	169	11
27000	Minnesota	5,824	35,382	1,253	15	1,447	1,217	1,148	68		27000	Minnesota	4,300	24,773	743	10	1,339	874	833	41
29000	Missouri	7,542	47,249	1,959	22	1,167	1,609	1,505	104	MAR(AR)	29000	Missouri	5,891	35,844	1,425	17	1,023	1,238	1,163	75
31000	Nebraska	10,514	71,627	3,581	33	743	2,408	2,215	193		31000	Nebraska								
40000	Oklahoma	2,845	19,726	943	9	228	646	596	51		40000	Oklahoma								
48000	Texas	19,684	117,345	4,488	45	19,290	5,030	4,751	279		48000	Texas	18	126	7	0	11	4	4	1
5000	Arkansas	102,278	13,063	79,275	120,618	1,179	202,226	42,887	159,338		5000	Arkansas	89,266	11,862	65,619	100,099	1,033	185,832	39,605	146,233
19000	Iowa	51,713	5,638	69,350	296,438	2,210	404,149	76,167	327,983		19000	Iowa	35,186	3,913	44,561	146,252	1,919	228,276	42,781	185,489
20000	Kansas	81,939	19,289	74,639	156,234	7,485	601,239	101,779	499,460		20000	Kansas								
22000	Louisiana	142,687	30,248	142,098	64,375	2,570	108,590	28,906	79,684		22000	Louisiana	27,661	6,455	24,889	18,975	536	25,763	6,878	18,885
27000	Minnesota	162,886	19,152	112,977	186,055	8,362	455,476	90,265	365,212	AREA	27000	Minnesota	82,139	13,037	61,261	41,359	5,215	139,616	30,158	109,459
29000	Missouri	105,388	18,763	120,481	125,988	44,416	453,830	74,684	379,146		29000	Missouri	84,423	13,547	91,392	95,016	30,356	349,072	57,947	291,145
31000	Nebraska	25,763	2,892	41,004	176,647	236	394,200	63,903	330,297		31000	Nebraska								
40000	Oklahoma	113,455	84,424	247,807	98,030	4,535	449,878	69,439	380,439		40000	Oklahoma								
48000	Texas	262,176	323,445	1,721,813	290,755	1,556	1,409,200	208,179	1,201,021		48000	Texas	2,903	4,039	20,327	1,083	23	4,528	703	3,825

#		[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]		#		[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC		#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC	
5000	Arkansas	3,732	23,815	977	12	569	798	746	52		5000	Arkansas	3,469	21,831	893	11	544	738	691	47	
19000	Iowa	3,922	26,278	1,257	13	373	889	821	67		19000	Iowa	2,470	16,326	759	8	270	554	514	41	
20000	Kansas	5,127	35,838	1,758	16	374	1,181	1,081	100		20000	Kansas									
22000	Louisiana	29,953	167,682	4,152	77	20,745	6,897	6,595	303		22000	Louisiana	853	5,585	210	3	144	180	169	11	
27000	Minnesota	5,824	35,382	1,253	15	1,447	1,217	1,148	68		27000	Minnesota	4,300	24,773	743	10	1,339	874	833	41	
29000	Missouri	7,542	47,249	1,959	22	1,167	1,609	1,505	104	MAR(AR)	29000	Missouri	5,891	35,844	1,425	17	1,023	1,238	1,163	75	
31000	Nebraska	10,514	71,627	3,581	33	743	2,408	2,215	193		31000	Nebraska									
40000	Oklahoma	2,845	19,726	943	9	228	646	596	51		40000	Oklahoma									
48000	Texas	19,684	117,345	4,488	45	19,290	5,030	4,751	279		48000	Texas	18	126	7	0	11	4	4	1	
5000	Arkansas	163	74	17	0	1	9	9	0		5000	Arkansas	150	69	16	0	1	8	8	0	
19000	Iowa	138	74	16	0	1	9	9	0		19000	Iowa	87	46	10	0	1	6	6	0	
20000	Kansas	211	102	23	0	2	13	12	0		20000	Kansas									
22000	Louisiana	112	53	12	0	1	7	6	0		22000	Louisiana	31	15	3	0	0	2	2	0	
27000	Minnesota	122	66	14	0	1	8	8	0		27000	Minnesota	47	25	6	0	1	3	3	0	
29000	Missouri	272	133	30	0	2	16	16	0	MAR(NR)	29000	Missouri	189	93	21	0	2	11	11	0	
31000	Nebraska	325	174	38	0	3	21	20	1		31000	Nebraska									
40000	Oklahoma	134	65	15	0	1	8	8	0		40000	Oklahoma									
48000	Texas	201	255	51	0	5	33	32	1		48000	Texas	2	2	1	0	0	0	0	0	
5000	Arkansas	6,089	325	215	0	45	135	23	111		5000	Arkansas	5,131	223	169	0	32	113	19	95	
19000	Iowa	2,695	281	121	0	39	61	14	47		19000	Iowa	1,864	245	91	0	34	42	11	31	
20000	Kansas	4,288	200	182	0	29	94	17	77		20000	Kansas									
22000	Louisiana	6,250	740	272	0	89	155	32	123		22000	Louisiana	1,376	94	50	0	12	30	5	25	
27000	Minnesota	6,956	2,171	441	0	232	169	60	109	MAR(PT)	27000	Minnesota	4,525	2,118	370	0	223	113	53	61	
29000	Missouri	5,315	1,762	434	0	210	128	55	73		29000	Missouri	3,462	1,029	243	0	123	81	31	50	
31000	Nebraska	2,411	351	141	0		55	16	39		31000	Nebraska									
40000	Oklahoma	6,473	514	250	0	65	141	28	113		40000	Oklahoma									
48000	Texas	77,747	20,800	8,854	0	2,243	1,764	1,330	434		48000	Texas	32	0	3	0	0	1	0	0	
5000	Arkansas	9,984	24,214	1,208	12	616	941	778	163		5000	Arkansas	8,750	22,123	1,078	12	577	860	718	142	
19000	Iowa	6,756	26,632	1,394	13	413	959	844	114		19000	Iowa	4,421	16,617	860	8	305	602	530	72	
20000	Kansas	9,626	36,141	1,963	16	405	1,287	1,110	177		20000	Kansas									
22000	Louisiana	36,315	168,475	4,436	77	20,835	7,058	6,633	425		22000	Louisiana	2,259	5,694	264	3	156	212	176	36	
27000	Minnesota	12,901	37,619	1,708	15	1,680	1,394	1,216	178		27000	Minnesota	8,872	26,916	1,118	10	1,562	991	889	102	
29000	Missouri	13,129	49,145	2,423	22	1,380	1,753	1,576	177	MAR (TOTAL)	29000	Missouri	9,542	36,966	1,688	18	1,148	1,331	1,205	126	
31000	Nebraska	13,250	72,151	3,761	33	746	2,484	2,251	232		31000	Nebraska									
40000	Oklahoma	9,452	20,305	1,208	9	295	795	631	164		40000	Oklahoma									
48000	Texas	97,633	138,401	13,392	45	21,537	6,826	6,113	713		48000	Texas	52	129	11	0	11	5	5	1	

Nonroad Mobile
Processed as Area sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

#		[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC	
5000	Arkansas	202,622	24,811	32,563	26	463	2,586	2,470	117	NONROAD (TOTAL)
19000	Iowa	230,764	57,097	37,310	52	1,051	5,218	5,023	194	
20000	Kansas	178,981	41,993	19,667	37	815	3,929	3,791	138	
22000	Louisiana	289,551	25,742	52,936	31	471	2,700	2,563	137	
27000	Minnesota	389,711	60,882	86,023	65	1,103	6,298	6,014	284	
29000	Missouri	364,153	47,315	51,370	48	873	4,610	4,411	199	
31000	Nebraska	112,405	36,014	15,095	31	700	3,377	3,260	117	
40000	Oklahoma	234,863	27,642	30,866	29	516	2,707	2,589	117	
48000	Texas	1,056,274	162,553	152,132	1,121	3,468	15,028	14,450	578	
5000	Arkansas	163	74	17	0	1	9	9	0	NONROAD (MAR)
19000	Iowa	138	74	16	0	1	9	9	0	
20000	Kansas	211	102	23	0	2	13	12	0	
22000	Louisiana	112	53	12	0	1	7	6	0	
27000	Minnesota	122	66	14	0	1	8	8	0	
29000	Missouri	272	133	30	0	2	16	16	0	
31000	Nebraska	325	174	38	0	3	21	20	1	
40000	Oklahoma	134	65	15	0	1	8	8	0	
48000	Texas	201	255	51	0	5	33	32	1	
5000	Arkansas	202,460	24,737	32,546	25	462	2,577	2,461	116	NONROAD ONLY
19000	Iowa	230,626	57,023	37,294	52	1,049	5,209	5,015	194	
20000	Kansas	178,771	41,891	19,643	37	813	3,916	3,778	138	
22000	Louisiana	289,439	25,689	52,924	31	470	2,694	2,556	137	
27000	Minnesota	389,589	60,816	86,009	65	1,102	6,290	6,006	284	
29000	Missouri	363,881	47,182	51,340	48	871	4,594	4,396	198	
31000	Nebraska	112,080	35,841	15,056	30	696	3,356	3,240	116	
40000	Oklahoma	234,729	27,577	30,851	29	515	2,699	2,582	117	
48000	Texas	1,056,072	162,298	152,081	1,120		14,995	14,418	577	

#		[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year]
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
5000	Arkansas	173,720	21,271	30,026	22	398	2,296	2,191	105
19000	Iowa	156,370	32,659	24,147	30	586	2,938	2,824	113
20000	Kansas								
22000	Louisiana	50,198	5,603	6,797	6	109	577	550	26
27000	Minnesota	232,590	26,577	44,002	30	460	2,675	2,545	131
29000	Missouri	279,740	35,193	41,929	36	641	3,472	3,319	153
31000	Nebraska								
40000	Oklahoma								
48000	Texas	4,153	623	605	4	15	55	52	2
5000	Arkansas	150	69	16	0	1	8	8	0
19000	Iowa	87	46	10	0	1	6	6	0
20000	Kansas								
22000	Louisiana	31	15	3	0	0	2	2	0
27000	Minnesota	47	25	6	0	1	3	3	0
29000	Missouri	189	93	21	0	2	11	11	0
31000	Nebraska								
40000	Oklahoma								
48000	Texas	2	2	1	0	0	0	0	0
5000	Arkansas	173,570	21,202	30,010	22	397	2,288	2,183	105
19000	Iowa	156,284	32,613	24,137	30	585	2,932	2,819	113
20000	Kansas								
22000	Louisiana	50,168	5,588	6,794	6	109	575	549	26
27000	Minnesota	232,543	26,552	43,997	30	460	2,672	2,542	130
29000	Missouri	279,551	35,100	41,908	36	640	3,461	3,308	153
31000	Nebraska								
40000	Oklahoma								
48000	Texas	4,151	621	605	4	15	54	52	2

Processed as Point sources
Base inventory year 2008
No gridding matrix applied
Mass speciation matrix applied
No temporal factors applied
Annual total data basis in report

#		[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]	[tons/yr]
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
5000	Arkansas	40,091	37,346	27,469	927	14,025	8,986	6,405	2,581
19000	Iowa	29,363	40,834	21,794	3,397	51,635	9,005	5,780	3,225
20000	Kansas	24,281	52,973	17,955	1,576	7,310	5,012	3,617	1,395
22000	Louisiana	101,840	143,670	67,499	6,233	137,960	51,864	45,750	6,114
27000	Minnesota	29,566	58,689	22,429	1,854	24,022	20,452	12,862	7,590
29000	Missouri	78,955	40,766	16,444	1,513	90,824	9,120	5,278	3,842
31000	Nebraska	10,378	14,057	3,773	1,021	2,567	3,168	2,069	1,099
40000	Oklahoma	41,712	63,741	24,771	2,340	29,385	8,438	5,290	3,149
48000	Texas	261,900	238,060	119,360	2,240	121,640	38,539	31,134	7,405
5000	Arkansas	6,089	325	215	0	45	135	23	111
19000	Iowa	2,695	281	121	0	39	61	14	47
20000	Kansas	4,288	200	182	0	29	94	17	77
22000	Louisiana	6,250	740	272	0	89	155	32	123
27000	Minnesota	6,956	2,171	441	0	232	169	60	109
29000	Missouri	5,315	1,762	434	0	210	128	55	73
31000	Nebraska	2,411	351	141	0	44	55	16	39
40000	Oklahoma	6,473	514	250	0	65	141	28	113
48000	Texas	77,747	20,800	8,854	0	2,243	1,764	1,330	434
5000	Arkansas	34,002	37,022	27,254	927	13,980	8,852	6,382	2,470
19000	Iowa	26,668	40,553	21,673	3,397	51,596	8,944	5,766	3,178
20000	Kansas	19,993	52,773	17,773	1,576	7,281	4,918	3,600	1,318
22000	Louisiana	95,590	142,930	67,227	6,233	137,871	51,710	45,718	5,992
27000	Minnesota	22,610	56,518	21,988	1,854	23,790	20,282	12,802	7,481
29000	Missouri	73,640	39,004	16,010	1,513	90,614	8,992	5,223	3,769
31000	Nebraska	7,967	13,706	3,632	1,021	2,524	3,113	2,053	1,059
40000	Oklahoma	35,239	63,227	24,521	2,340	29,320	8,297	5,262	3,036
48000	Texas	184,153	217,260	110,506	2,240	119,397	36,775	29,804	6,971

#		[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year	[tons/year]
#Region	State	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
5000	Arkansas	36,976	31,444	25,828	927	10,818	8,351	6,025	2,326
19000	Iowa	25,764	30,999	17,017	2,214	50,800	7,679	4,791	2,889
20000	Kansas								
22000	Louisiana	17,220	20,860	13,299	673	6,739	6,846	6,036	810
27000	Minnesota	19,141	45,489	12,006	1,083	17,237	14,772	9,440	5,332
29000	Missouri	73,563	34,282	11,724	1,480	83,808	7,473	4,145	3,328
31000	Nebraska								
40000	Oklahoma								
48000	Texas	1,740	2,244	2,294	97	80	655	375	281
5000	Arkansas	5,131	223	169	0	32	113	19	95
19000	Iowa	1,864	245	91	0	34	42	11	31
20000	Kansas								
22000	Louisiana	1,376	94	50	0	12	30	5	25
27000	Minnesota	4,525	2,118	370	0	223	113	53	61
29000	Missouri	3,462	1,029	243	0	123	81	31	50
31000	Nebraska								
40000	Oklahoma								
48000	Texas	32	0	3	0	0	1	0	0
5000	Arkansas	31,845	31,221	25,659	927	10,786	8,238	6,007	2,231
19000	Iowa	23,900	30,754	16,926	2,214	50,766	7,637	4,780	2,857
20000	Kansas								
22000	Louisiana	15,844	20,766	13,249	673	6,727	6,816	6,031	785
27000	Minnesota	14,616	43,371	11,636	1,083	17,014	14,659	9,387	5,271
29000	Missouri	70,102	33,253	11,481	1,480	83,685	7,392	4,114	3,278
31000	Nebraska								
40000	Oklahoma								
48000	Texas	1,708	2,244	2,291	97	80	655	375	280