APPENDIX A

Air Quality System (AQS) Monitor Data Values for Cincinnati-Hamilton OH-KY-IN Nonattainment Area (2004-2009)

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AQS Monitoring Data for Kentucky's portion of the Cincinnati-Hamilton OH-KY-IN Nonattainment Area

KENTUCKY																
8-HOUR Ozone (44201)																
(PARTS PER MILLION)																
									VALID	NUM	1ST	2ND	3RD	4TH	DAY	
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >	
SITE ID	POC	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075	CERT
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2004	53	100	245	245	0.077	0.071	0.07	0.07	1	Y
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2005	0	95	233	245	0.082	0.082	0.082	0.082	8	Y
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2006	87	100	244	245	0.072	0.072	0.072	0.071	0	
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2007	87	100	245	245	0.081	0.079	0.078	0.078	6	
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2008	87	98	241	245	0.065	0.064	0.064	0.064	0	Y
21-015-0003	1	584	Not in a city	Boone	KY 338 & LOWER RIVER ROAD	2009	87	98	241	245	0.069	0.067	0.065	0.064	0	
21-037-3002	1	584	Highland Heights	Campbell	524A John Hill Road	2007	87	100	123	123	0.095	0.092	0.088	0.086	19	
21-037-3002	1	584	Highland Heights	Campbell	524A John Hill Road	2008	87	99	242	245	0.084	0.083	0.075	0.075	2	Y
21-037-3002	1	584	Highland Heights	Campbell	524A John Hill Road	2009	87	100	245	245	0.075	0.072	0.070	0.068	0	
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2004	53	95	232	245	0.081	0.076	0.075	0.073	2	
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2005	0	99	242	245	0.091	0.088	0.087	0.084	12	Y
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2006	87	97	238	245	0.082	0.081	0.079	0.075	3	
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2007	87	100	244	245	0.093	0.089	0.085	0.085	12	
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2008	87	99	242	245	0.08	0.077	0.074	0.073	2	Y
21-117-0007	1	584	Covington	Kenton	1401 DIXIE HWY, UNIVERSITY COLLEGE	2009	87	99	242	245	0.076	0.075	0.075	0.074	1	

AQS Monitoring Data for Ohio's portion of the Cincinnati-Hamilton OH-KY-IN Nonattainment Area

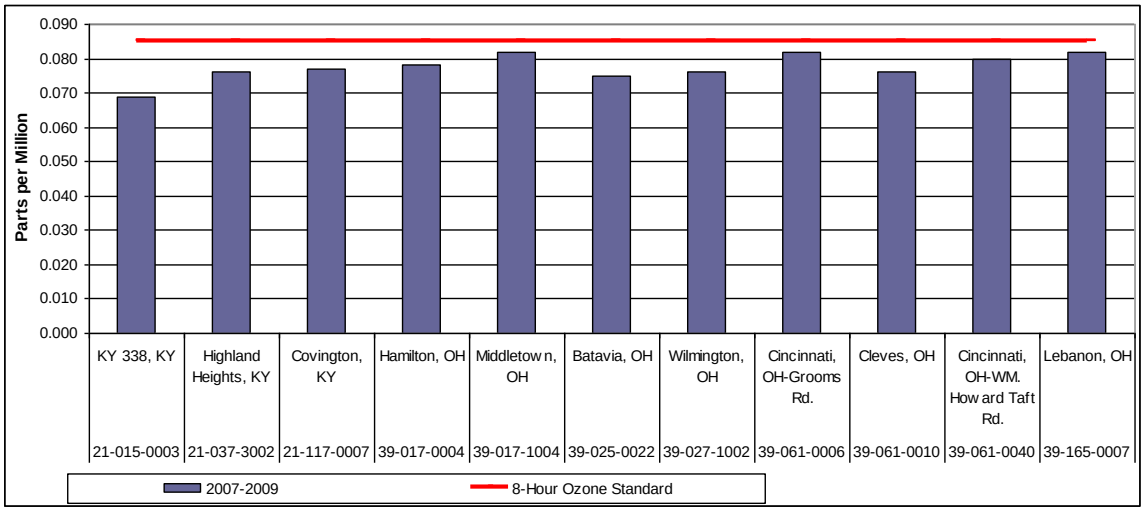
OHIO	8-HOUR Ozone (44201)		(PARTS PER MILLION)						VALID	NUM	1ST	2ND	3RD	4TH	DAY	
									DAYS	DAYS	MAX	MAX	MAX	MAX	MAX >	
SITE ID	POC	PQAO	CITY	COUNTY	ADDRESS	YEAR	METH	%OBS	MEAS	REQ	8-HR	8-HR	8-HR	8-HR	0.075	CERT
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2004	87	100	214	214	0.09	0.081	0.078	0.075	3	Y
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2005	87	100	213	214	0.098	0.098	0.088	0.086	22	Y
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2006	87	99	212	214	0.087	0.082	0.082	0.079	11	Y
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2007	87	100	214	214	0.097	0.096	0.091	0.091	20	
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2008	87	99	211	214	0.089	0.075	0.072	0.071	1	Y
39-017-0004	1	1259	Hamilton	Butler	SCHULER AND BENDER	2009	87	98	210	214	0.079	0.078	0.074	0.073	2	
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2004	56	100	213	214	0.087	0.079	0.078	0.076	5	Y
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2005	56	100	213	214	0.106	0.091	0.089	0.088	24	Y
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2006	87	100	213	214	0.085	0.084	0.077	0.076	4	Y
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2007	87	100	214	214	0.104	0.097	0.095	0.091	27	
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2008	0	96	205	214	0.091	0.087	0.082	0.079	7	Y
39-017-1004	3	1259	Middletown	Butler	HOOK FIELD AIRPORT	2009	87	100	214	214	0.078	0.076	0.076	0.076	4	
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR.	2004	0	99	212	214	0.082	0.077	0.076	0.076	4	Y
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR	2005	87	99	211	214	0.089	0.087	0.083	0.083	16	Y
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR.	2006	87	99	212	214	0.087	0.081	0.077	0.077	7	Y
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR.	2007	0	98	209	214	0.093	0.092	0.09	0.086	17	
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR.	2008	87	97	207	214	0.072	0.071	0.071	0.071	0	Y
39-025-0022	1	1259	Batavia	Clermont	2400 CLERMONT CNTR	2009	87	99	212	214	0.071	0.071	0.069	0.069	0	
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2004	47	100	214	214	0.087	0.081	0.081	0.078	6	Y
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2005	47	100	213	214	0.097	0.095	0.093	0.083	23	Y
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2006	47	100	214	214	0.09	0.085	0.084	0.081	10	Y
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2007	47	99	212	214	0.091	0.089	0.085	0.082	21	
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2008	47	96	206	214	0.087	0.08	0.077	0.076	4	Y
39-027-1002	1	810	Wilmington	Clinton	62 LAUREL DR.	2009	47	96	205	214	0.073	0.072	0.071	0.07	0	
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2004	0	98	210	214	0.084	0.078	0.076	0.076	4	Y
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2005	87	100	214	214	0.101	0.095	0.095	0.089	22	Y
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2006	87	100	213	214	0.084	0.084	0.082	0.081	9	Y
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2007	87	96	206	214	0.1	0.092	0.091	0.089	33	
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2008	87	97	208	214	0.093	0.089	0.087	0.086	12	Y
39-061-0006	1	1259	Cincinnati	Hamilton	11590 GROOMS RD	2009	87	98	209	214	0.08	0.076	0.075	0.072	2	
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2004	19	100	214	214	0.085	0.084	0.077	0.075	3	Y
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2005	19	100	214	214	0.113	0.093	0.087	0.085	19	Y
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2006	0	100	213	214	0.098	0.092	0.082	0.081	10	Y
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2007	87	99	212	214	0.093	0.091	0.088	0.086	23	
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2008	87	96	205	214	0.085	0.079	0.078	0.077	7	Y
39-061-0010	1	1259	Cleves	Hamilton	6950 RIPPLE RD.	2009	87	80	172	214	0.069	0.066	0.065	0.065	0	
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2004	56	100	213	214	0.078	0.078	0.077	0.076	4	Y
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2005	0	98	209	214	0.095	0.091	0.09	0.087	20	Y
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2006	87	99	212	214	0.089	0.08	0.079	0.078	8	Y
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2007	0	99	212	214	0.097	0.093	0.088	0.086	15	
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2008	87	100	213	214	0.086	0.083	0.081	0.08	7	Y
39-061-0040	1	1259	Cincinnati	Hamilton	250 WM. HOWARD TAFT	2009	87	99	211	214	0.077	0.076	0.074	0.074	2	
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2004	56	100	213	214	0.087	0.085	0.083	0.081	10	Y
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2005	0	98	210	214	0.101	0.101	0.096	0.092	24	Y
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2006	87	100	214	214	0.092	0.09	0.088	0.086	12	Y
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2007	87	100	214	214	0.103	0.089	0.088	0.088	32	
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2008	0	95	204	214	0.092	0.087	0.084	0.082	11	Y
39-165-0007	1	1259	Lebanon	Warren	416 SOUTHEAST ST.	2009	87	100	213	214	0.08	0.08	0.078	0.077	4	

AQS Monitoring Data for Entire Nonattainment Area

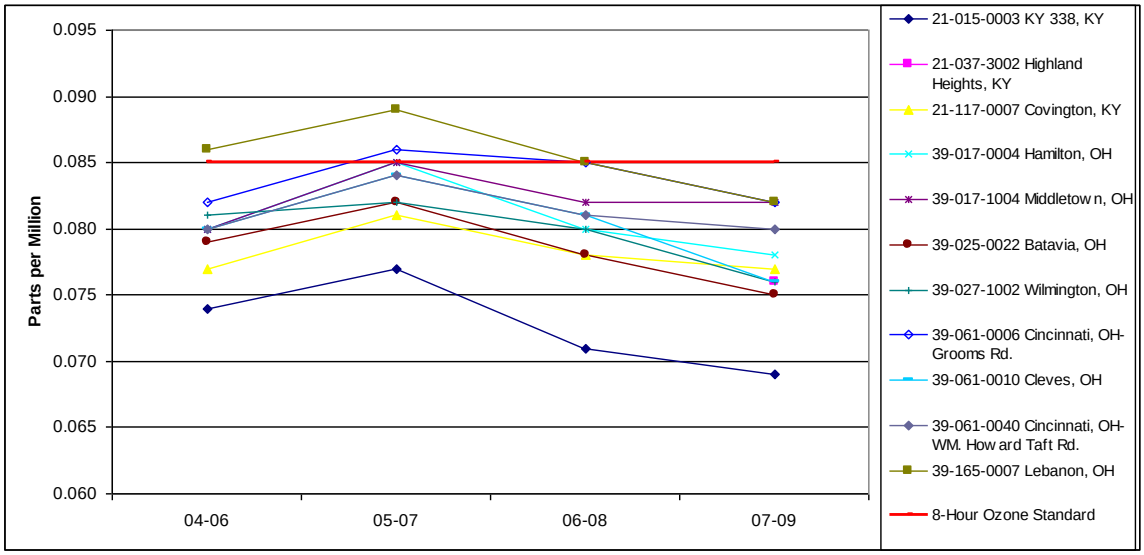
State	County	Site ID	Site Name	4th High Values (ppm)					
				2004	2005	2006	2007	2008	2009
Kentucky	Boone	21-015-0003	KY 338	0.070	0.082	0.071	0.078	0.064	0.064
Kentucky	Campbell	21-037-3002	Highland Heights				0.086	0.075	0.068
Kentucky	Kenton	21-117-0007	Covington	0.073	0.084	0.075	0.085	0.073	0.074
Ohio	Butler	39-017-0004	Hamilton	0.075	0.086	0.079	0.091	0.071	0.073
Ohio	Butler	39-017-1004	Middletown	0.076	0.088	0.076	0.091	0.079	0.076
Ohio	Clermont	39-025-0022	Batavia	0.076	0.083	0.077	0.086	0.071	0.069
Ohio	Clinton	39-027-1002	Wilmington	0.078	0.083	0.081	0.082	0.076	0.070
Ohio	Hamilton	39-061-0006	Cincinnati-Grooms Rd	0.076	0.089	0.081	0.089	0.086	0.072
Ohio	Hamilton	39-061-0010	Cleves	0.075	0.085	0.081	0.086	0.077	0.065
Ohio	Hamilton	39-061-0040	Cincinnati-Wm. Howard Taft	0.076	0.087	0.078	0.086	0.080	0.080
Ohio	Warren	39-165-0007	Lebanon	0.081	0.092	0.086	0.088	0.082	0.077
				Value greater than or equal to 0.085 ppm					

State	County	Site ID	Site Name	Three Year Design Values (ppm)			
				04-06	05-07	06-08	07-09
Kentucky	Boone	21-015-0003	KY 338	0.074	0.077	0.071	0.069
Kentucky	Campbell	31-037-3002	Highland Heights				0.076
Kentucky	Kenton	21-117-0007	Covington	0.077	0.081	0.078	0.077
Ohio	Butler	39-017-0004	Hamilton	0.080	0.085	0.080	0.078
Ohio	Butler	39-017-1004	Middletown	0.080	0.085	0.082	0.082
Ohio	Clermont	39-025-0022	Batavia	0.079	0.082	0.078	0.075
Ohio	Clinton	39-027-1002	Wilmington	0.081	0.082	0.080	0.076
Ohio	Hamilton	39-061-0006	Cincinnati-Grooms Rd	0.082	0.086	0.085	0.082
Ohio	Hamilton	39-061-0010	Cleves	0.080	0.084	0.081	0.076
Ohio	Hamilton	39-061-0040	Cincinnati-Wm. Howard Taft	0.080	0.084	0.081	0.080
Ohio	Warren	39-165-0007	Lebanon	0.086	0.089	0.085	0.082
				Value greater than or equal to 0.085 ppm			

2007-2009 Design Values for the Cincinnati-Hamilton OH-KY-IN Nonattainment Area



Design Value Trends in the Cincinnati-Hamilton OH-KY-IN Nonattainment Area, 2004-2009



APPENDIX B

Nitrogen Oxides (NO_x) and Volatile Organic Compounds (VOC) Point Source Emissions, 2005 and 2008, for Lawrenceburg Township, Dearborn County Indiana and Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area

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Lawrenceburg Township, Dearborn County, Indiana
Point Source Emission Totals
(Tons per Day)

Year	NO_x	VOC
2005	30.40	3.24
2008	30.55	3.58

2005
Lawrenceburg Township, Dearborn County, Indiana
Point Source Emission Totals (EGU vs Non EGU)
(Tons per Day)

	EGU-NOx	NON EGU-NOx	EGU-VOC	NON-EGU-VOC
Lawrenceburg Township, Dearborn County, Indiana	25.31	5.09	0.33	2.91
	Total NOx	**30.40**	**Total VOC**	**3.24**

2005
Lawrenceburg Township, Dearborn County, Indiana
Point Source Inventory
(Tons per Day)

Facility Name	NOX	VOC
Aurora Casket Company Inc.	0.01	1.25
American Electric Power-Tanners Creek	25.31	0.32
Pernod Ricard USA	1.34	1.33
Anchor Glass Container Corporation	1.29	0.05
Texas Gas Transmission-Dillsboro	1.81	0.07
Aurora Casket Company-Vanguard Plant	0.00	0.20
Trans Agg, Inc. DBA Gibbco, Inc.	0.00	0.01
PSEG Lawrenceburg Energy Company, Inc.	0.64	0.01
Total	**30.40**	**3.24**

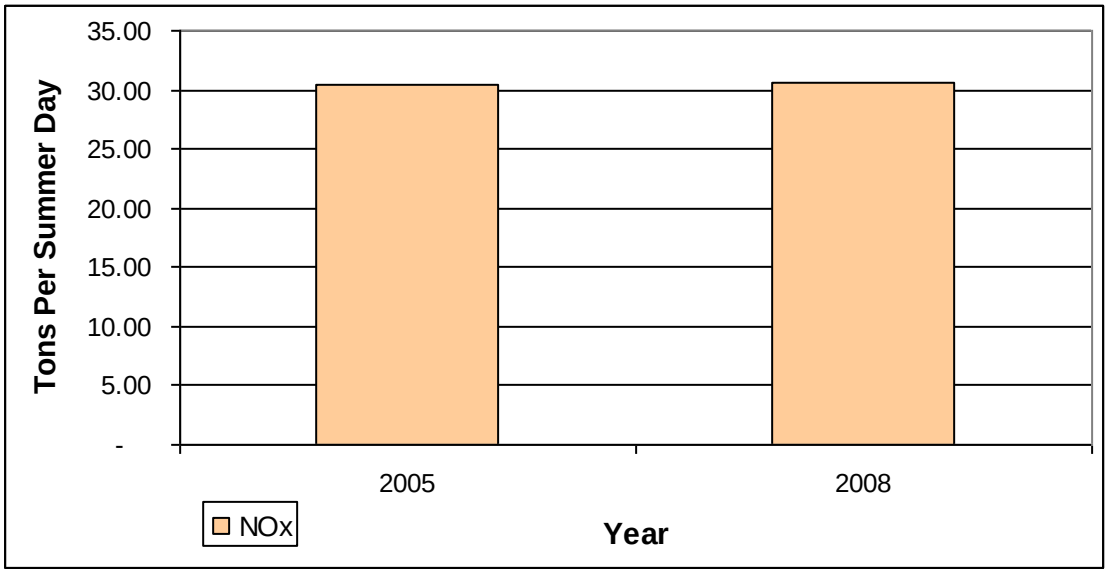
2008
Lawrenceburg Township, Dearborn County, Indiana
Point Source Emission Totals (EGU vs Non EGU)
(Tons per Day)

	EGU-NOx	NON EGU-NOx	EGU-VOC	NON-EGU-VOC
Lawrenceburg Township, Dearborn County, Indiana	27.34	3.21	0.35	3.23
	Total NOx	**30.55**	**Total VOC**	**3.58**

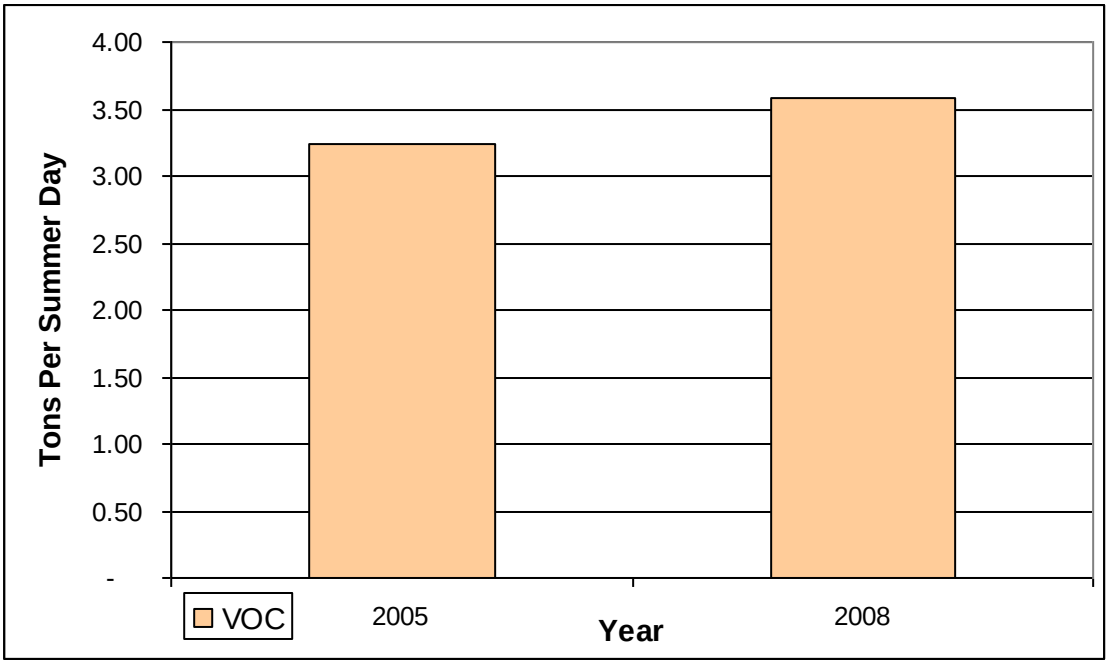
2008
Lawrenceburg Township, Dearborn County, Indiana
Point Source Inventory
(Tons per Day)

Facility Name	NOX	VOC
Aurora Casket Company Inc.	0.01	1.23
American Electric Power-Tanners Creek	27.34	0.35
Pernod Ricard USA	1.16	1.92
Anchor Glass Container Corporation	0.85	0.02
Texas Gas Transmission-Dillsboro	0.86	0.03
Aurora Casket Company-Vanguard Plant	0.02	0.03
Trans Agg, Inc. DBA Gibbco, Inc.	0.00	0.00
PSEG Lawrenceburg Energy Company, Inc.	0.31	0.00
Total	**30.55**	**3.58**

NO_x Point Source Emissions, Lawrenceburg Township, Dearborn County, Indiana, 2005-2008



VOC Point Source Emissions, Lawrenceburg Township, Dearborn County, Indiana, 2005-2008



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Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
Point Source Emission Totals
(Tons per Day)

Year	NO_x	VOC
2005	138.03	15.13
2008	147.14	14.79

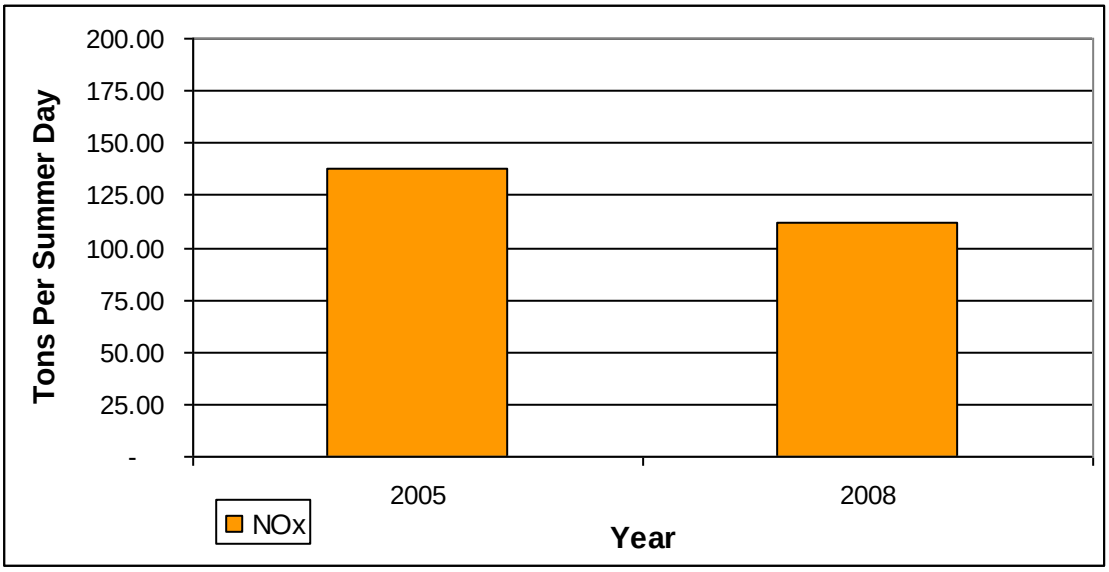
2005
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
Point Source Emission Totals (EGU vs Non EGU)
(Tons per Day)

	EGU-NOx	NON EGU-NOx	EGU-VOC	NON-EGU-VOC
Lawrenceburg Township, Dearborn County, Indiana	25.31	5.09	0.33	2.91
Boone County, Kentucky	23.80	0.14	0.17	2.40
Campbell County, Kentucky	0.00	0.00	0.00	0.25
Kenton County, Kentucky	0.00	0.04	0.00	1.20
Butler County, Ohio	3.88	12.03	0.03	3.64
Clermont County, Ohio	42.96	0.15	0.49	0.24
Clinton County, Ohio	0.00	0.00	0.00	0.00
Hamilton County, Ohio	15.23	6.72	0.28	2.66
Warren County, Ohio	0.00	2.68	0.00	0.53
	Total NOx	**138.03**	**Total VOC**	**15.13**

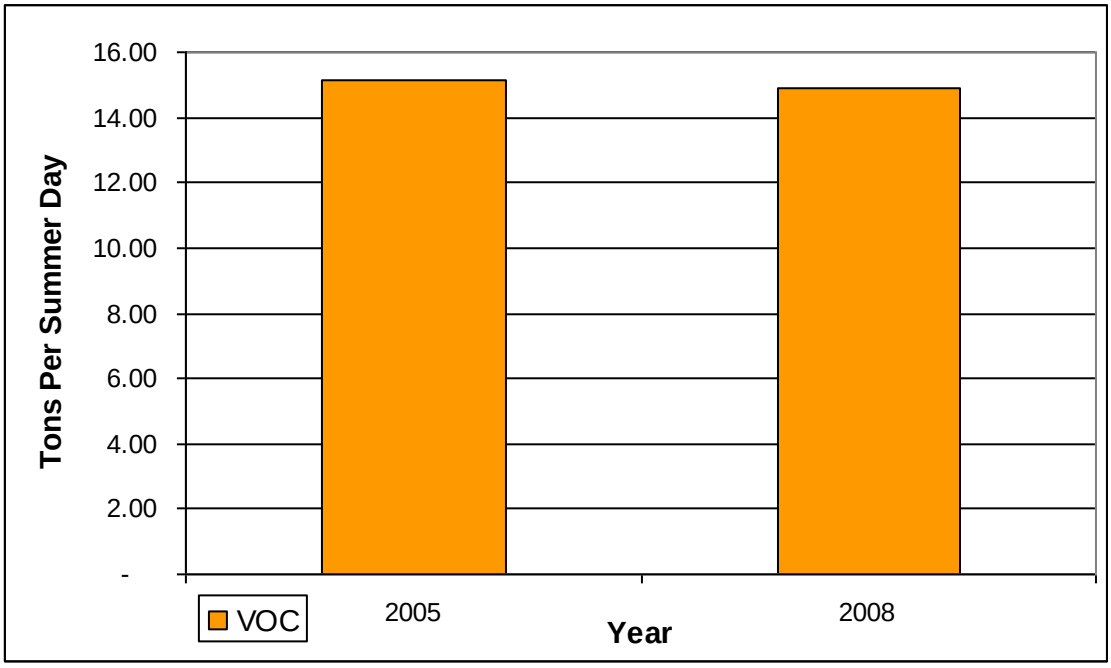
2008
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
Point Source Emission Totals (EGU vs Non EGU)
(Tons per Day)

	EGU-NOx	NON EGU-NOx	EGU-VOC	NON-EGU-VOC
Lawrenceburg Township, Dearborn County, Indiana	27.34	3.21	0.35	3.23
Boone County, Kentucky	23.15	0.12	0.17	2.64
Campbell County, Kentucky	0.00	0.02	0.00	0.28
Kenton County, Kentucky	0.00	0.03	0.00	1.17
Butler County, Ohio	2.87	10.53	0.03	2.77
Clermont County, Ohio	22.61	0.18	0.27	0.09
Clinton County, Ohio	0.00	0.00	0.00	0.00
Hamilton County, Ohio	12.92	6.17	0.24	2.85
Warren County, Ohio	0.00	3.14	0.00	0.82
	Total NOx	**112.29**	**Total VOC**	**14.91**

NO_x Point Source Emissions, Entire Nonattainment Area, 2005-2008



VOC Point Source Emissions, Entire Nonattainment Area, 2005-2008



APPENDIX C

Nitrogen Oxides (NO_x) and Volatile Organic Compounds (VOC) All Emission Sources, 2005 and 2008, for Lawrenceburg Township, Dearborn County, Indiana and Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area

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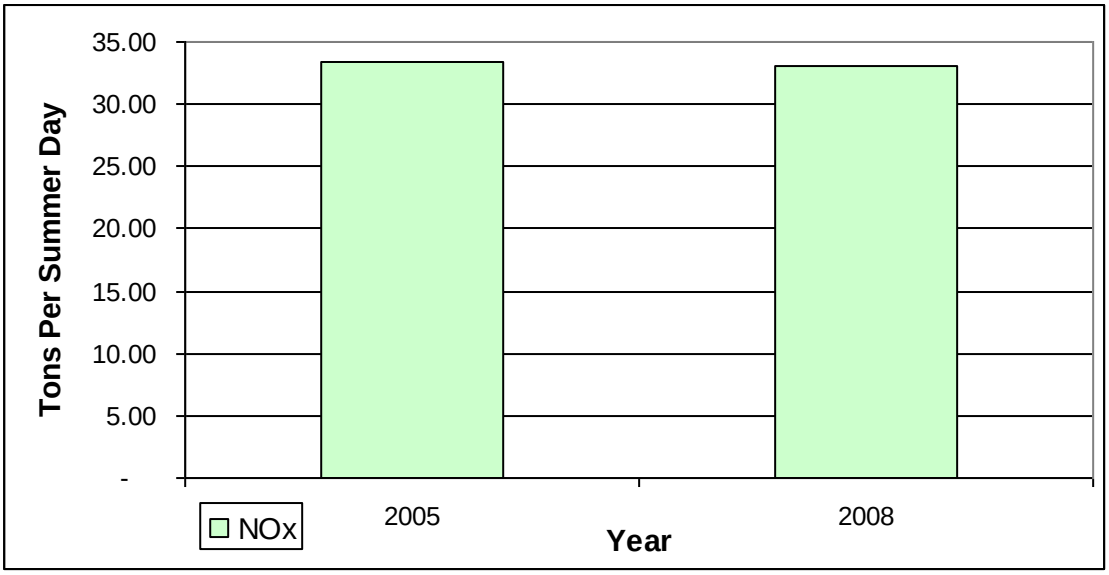
Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Source Emission Totals (Tons per Day)		
Year	**NOx**	**VOC**
2005	33.36	7.13
2008	33.09	7.49

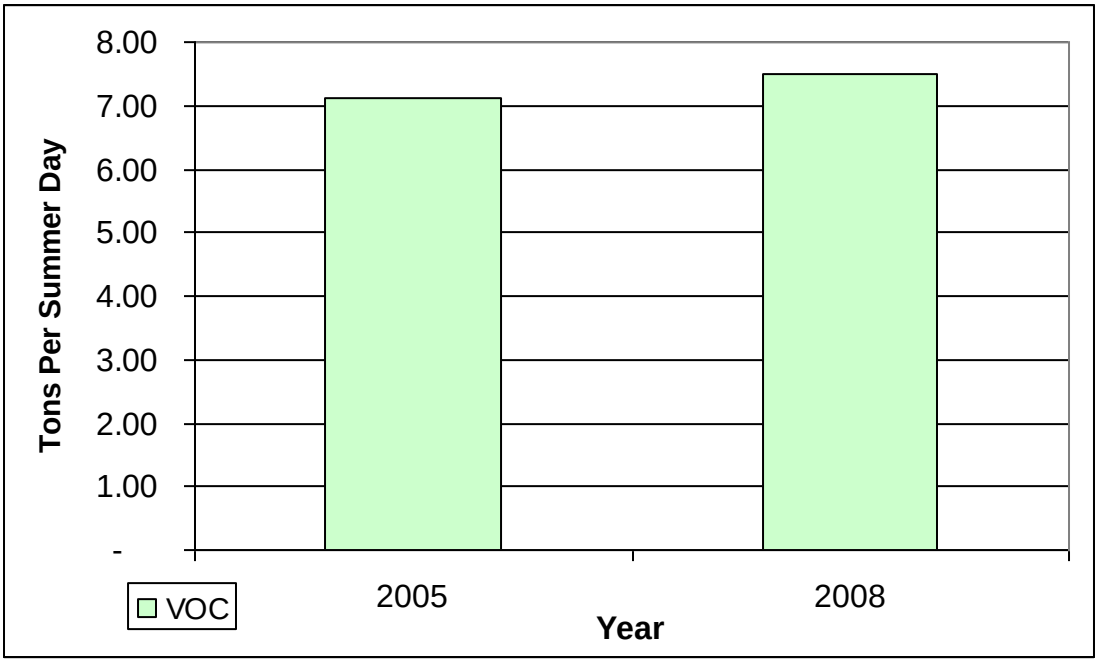
	2005 Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	0.26	1.26	1.44	30.40	**33.36**
VOC	2.07	0.82	1.00	3.24	**7.13**

	2008 Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	0.26	1.14	1.14	30.55	**33.09**
VOC	2.42	0.74	0.75	3.58	**7.49**

NO_x Emissions Trends, 2005-2008, All Anthropogenic Sources in Lawrenceburg Township, Dearborn County



VOC Emissions Trends, 2005-2008, All Anthropogenic Sources in Lawrenceburg Township, Dearborn County

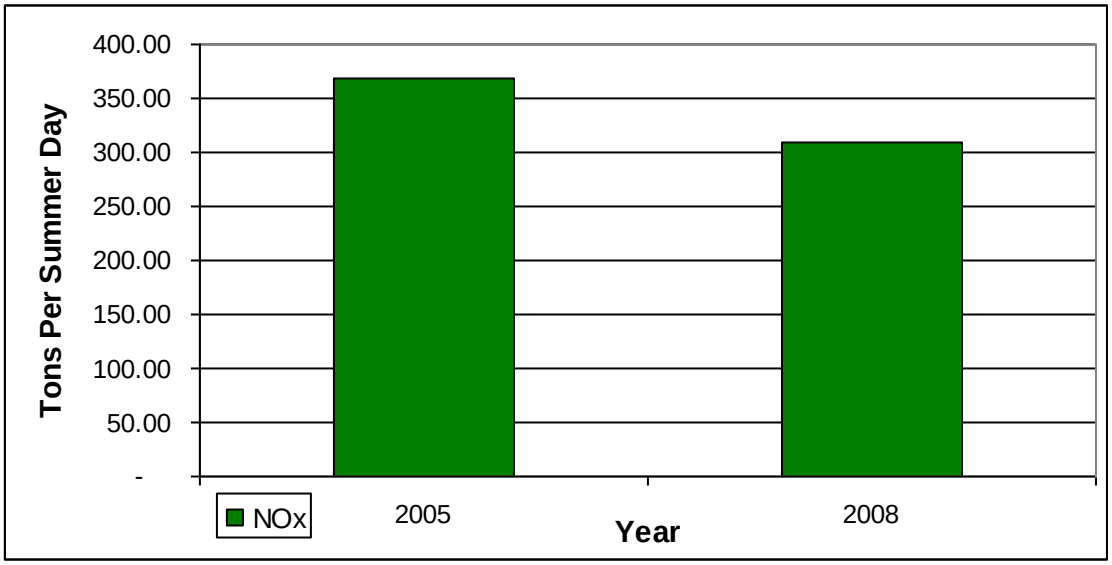


Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Source Emission Totals (Tons per Day)		
Year	**NOx**	**VOC**
2005	369.26	213.52
2008	309.47	187.78

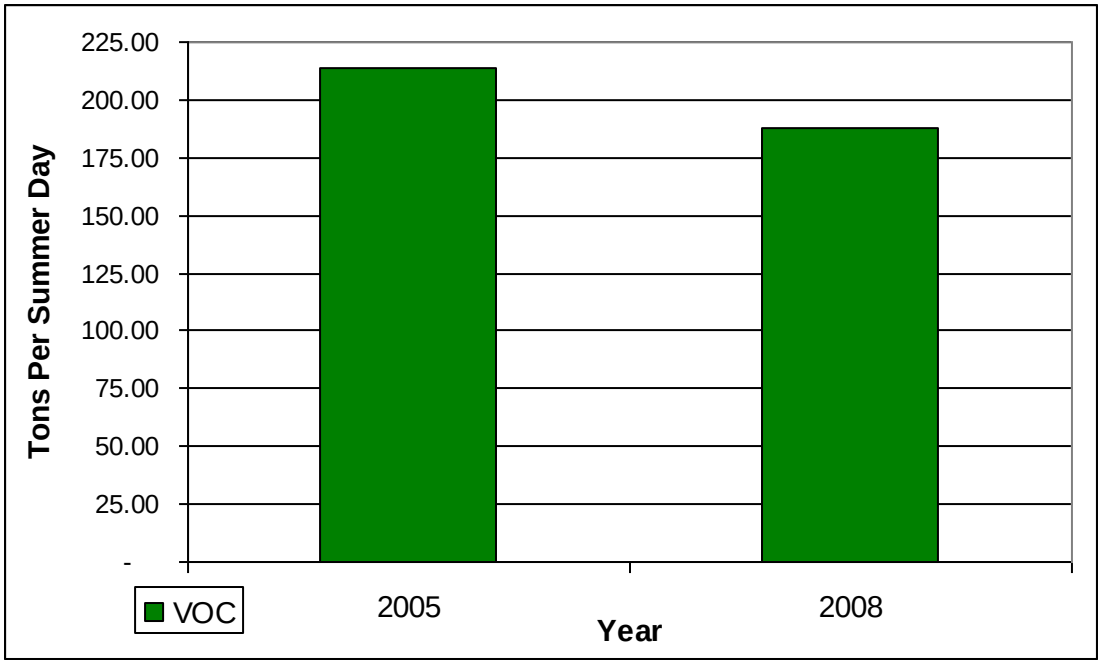
	2005 Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	21.39	73.19	136.65	138.03	**369.26**
VOC	87.12	41.85	69.43	15.13	**213.52**

	2008 Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	21.38	62.35	113.45	112.29	**309.47**
VOC	78.36	39.04	55.47	14.91	**187.78**

NO_x Emissions Trends, 2005-2008, All Anthropogenic Sources-Entire Nonattainment Area



VOC Emissions Trends, 2005-2008, All Anthropogenic Sources-Entire Nonattainment Area



2005
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
All Anthropogenic Sources
(Tons per Day)

State	County	Sector	NOX	VOC
Indiana	Dearborn County	AREA	0.26	2.07
Indiana	Dearborn County	NONROAD	1.26	0.82
Indiana	Dearborn County	ONROAD	1.44	1.00
Indiana	Dearborn County	EGU	25.31	0.33
Indiana	Dearborn County	POINT	5.09	2.91
Kentucky	Boone County	AREA	4.99	8.13
Kentucky	Boone County	NONROAD	12.96	1.71
Kentucky	Boone County	ONROAD	10.27	4.33
Kentucky	Boone County	EGU	23.80	0.17
Kentucky	Boone County	POINT	0.14	2.40
Kentucky	Campbell County	AREA	1.41	4.77
Kentucky	Campbell County	NONROAD	6.33	1.76
Kentucky	Campbell County	ONROAD	5.98	2.52
Kentucky	Campbell County	EGU	0.00	0.00
Kentucky	Campbell County	POINT	0.00	0.25
Kentucky	Kenton County	AREA	4.17	8.53
Kentucky	Kenton County	NONROAD	8.43	2.33
Kentucky	Kenton County	ONROAD	10.39	4.32
Kentucky	Kenton County	EGU	0.00	0.00
Kentucky	Kenton County	POINT	0.04	1.20
Ohio	Butler County	AREA	2.15	11.96
Ohio	Butler County	NONROAD	10.25	6.88
Ohio	Butler County	ONROAD	18.80	9.94
Ohio	Butler County	EGU	3.88	0.03
Ohio	Butler County	POINT	12.03	3.64
Ohio	Clermont County	AREA	1.65	6.98
Ohio	Clermont County	NONROAD	5.03	4.33
Ohio	Clermont County	ONROAD	13.04	6.86
Ohio	Clermont County	EGU	42.96	0.49
Ohio	Clermont County	POINT	0.15	0.24
Ohio	Clinton County	AREA	0.42	3.24
Ohio	Clinton County	NONROAD	2.26	1.77
Ohio	Clinton County	ONROAD	5.07	3.02
Ohio	Clinton County	EGU	0.00	0.00
Ohio	Clinton County	POINT	0.00	0.00
Ohio	Hamilton County	AREA	5.19	33.04
Ohio	Hamilton County	NONROAD	20.57	17.45
Ohio	Hamilton County	ONROAD	56.51	29.47
Ohio	Hamilton County	EGU	15.23	0.28
Ohio	Hamilton County	POINT	6.72	2.66
Ohio	Warren County	AREA	1.15	8.40
Ohio	Warren County	NONROAD	6.10	4.79
Ohio	Warren County	ONROAD	15.15	7.97
Ohio	Warren County	EGU	0.00	0.00
Ohio	Warren County	POINT	2.68	0.53

2008
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
All Anthropogenic Sources
(Tons per Day)

State	County	Sector	NOX	VOC
Indiana	Dearborn County	AREA	0.26	2.42
Indiana	Dearborn County	NONROAD	1.14	0.74
Indiana	Dearborn County	ONROAD	1.14	0.75
Indiana	Dearborn County	EGU	27.34	0.35
Indiana	Dearborn County	POINT	3.21	3.23
Kentucky	Boone County	AREA	5.02	8.41
Kentucky	Boone County	NONROAD	11.02	5.07
Kentucky	Boone County	ONROAD	8.53	4.00
Kentucky	Boone County	EGU	23.15	0.17
Kentucky	Boone County	POINT	0.12	2.64
Kentucky	Campbell County	AREA	1.32	4.34
Kentucky	Campbell County	NONROAD	5.34	1.51
Kentucky	Campbell County	ONROAD	4.88	2.29
Kentucky	Campbell County	EGU	0.00	0.00
Kentucky	Campbell County	POINT	0.02	0.28
Kentucky	Kenton County	AREA	4.06	7.88
Kentucky	Kenton County	NONROAD	7.33	1.95
Kentucky	Kenton County	ONROAD	8.37	3.85
Kentucky	Kenton County	EGU	0.00	0.00
Kentucky	Kenton County	POINT	0.03	1.17
Ohio	Butler County	AREA	2.18	10.31
Ohio	Butler County	NONROAD	8.89	5.68
Ohio	Butler County	ONROAD	16.05	7.87
Ohio	Butler County	EGU	2.87	0.03
Ohio	Butler County	POINT	10.53	2.77
Ohio	Clermont County	AREA	1.67	6.05
Ohio	Clermont County	NONROAD	4.22	3.68
Ohio	Clermont County	ONROAD	11.05	5.42
Ohio	Clermont County	EGU	22.61	0.27
Ohio	Clermont County	POINT	0.18	0.09
Ohio	Clinton County	AREA	0.43	2.85
Ohio	Clinton County	NONROAD	2.01	1.65
Ohio	Clinton County	ONROAD	3.87	2.33
Ohio	Clinton County	EGU	0.00	0.00
Ohio	Clinton County	POINT	0.00	0.00
Ohio	Hamilton County	AREA	5.27	28.80
Ohio	Hamilton County	NONROAD	17.21	14.66
Ohio	Hamilton County	ONROAD	46.80	22.70
Ohio	Hamilton County	EGU	12.92	0.24
Ohio	Hamilton County	POINT	6.17	2.85
Ohio	Warren County	AREA	1.17	7.30
Ohio	Warren County	NONROAD	5.19	4.10
Ohio	Warren County	ONROAD	12.76	6.26
Ohio	Warren County	EGU	0.00	0.00
Ohio	Warren County	POINT	3.14	0.82

APPENDIX D

Nitrogen Oxides (NO_x) Emissions from Electric Generating Units, Lawrenceburg Township, Dearborn County, Indiana and Entire Cincinnati-Hamilton OH-KY-IN Nonattainment Area

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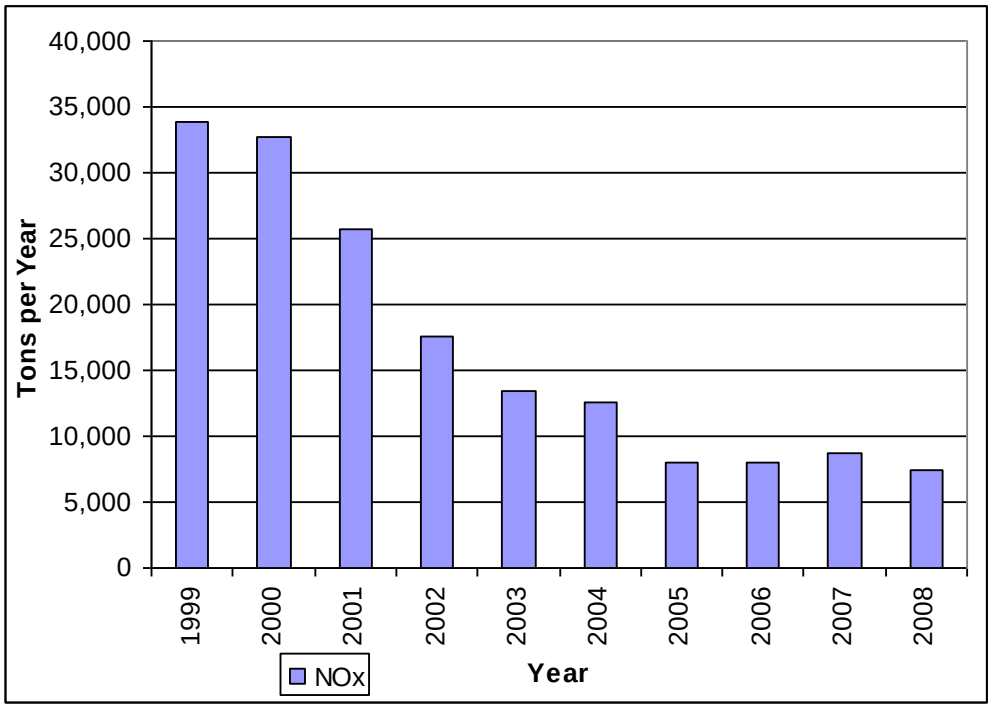
	Lawrenceburg Township, Dearborn County, Indiana NO_x Emissions from EGUs
Year	**Total NO_x Emissions, tons / year**
1999	33,807.1
2000	32,657.1
2001	25,774.7
2002	17,533.8
2003	13,416.7
2004	12,552.8
2005	7,961.3
2006	8,041.6
2007	8,739.2
2008	7,429.2

NO_x Emissions from Lawrenceburg Township, Dearborn County, Indiana Electric Generating Unit American Electric Power-Tanners Creek Generating Station, 1999-2008

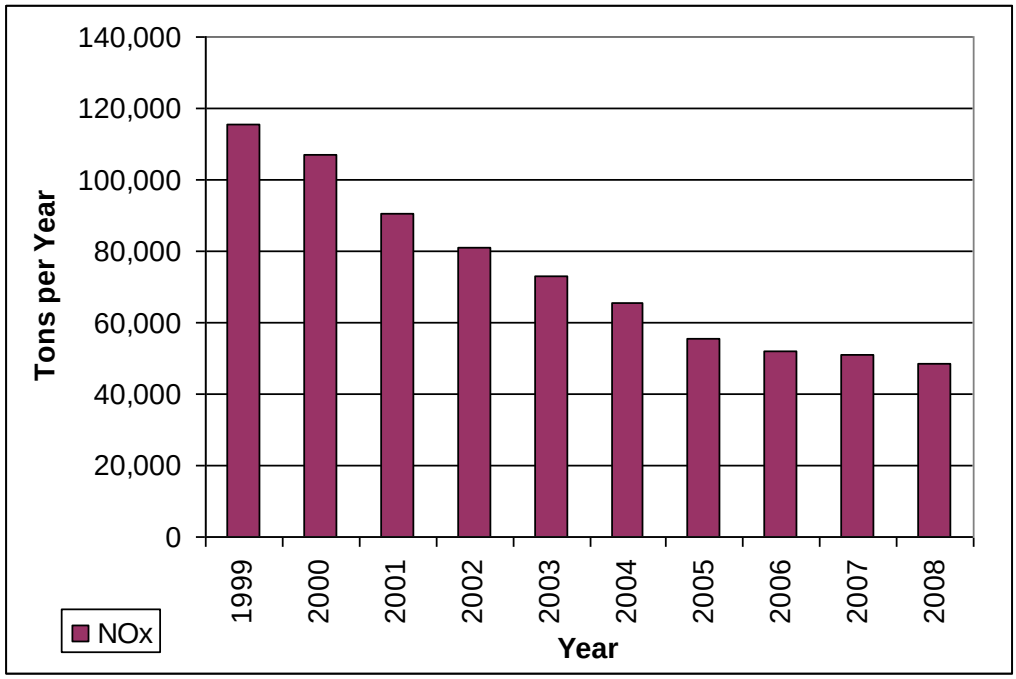


Lawrenceburg Township, Dearborn County, Indiana NOx Emissions		
Facility	**Year**	**NO_x Emissions, tons / year**
American Electric Power (AEP)- Tanners Creek Generating Station	1999	33,807.1
American Electric Power (AEP)- Tanners Creek Generating Station	2000	32,657.1
American Electric Power (AEP) - Tanners Creek Generating Station	2001	25,774.7
American Electric Power (AEP)- Tanners Creek Generating Station	2002	17,533.8
American Electric Power (AEP)- Tanners Creek Generating Station	2003	13,416.7
American Electric Power (AEP)- Tanners Creek Generating Station	2004	12,552.8
American Electric Power (AEP)- Tanners Creek Generating Station	2005	7,961.3
American Electric Power (AEP)- Tanners Creek Generating Station	2006	8,041.6
American Electric Power (AEP)- Tanners Creek Generating Station	2007	8,739.2
American Electric Power (AEP)- Tanners Creek Generating Station	2008	7,429.2

NO_x Emissions from EGUs-Entire Cincinnnati-Hamilton OH-KY-IN Nonattainment Area

Year	Total NO_x Emissions, tons / year
1999	115,477.8
2000	107,227.9
2001	90,347.2
2002	80,808.6
2003	73,084.4
2004	65,491.6
2005	55,492.4
2006	52,004.5
2007	50,979.6
2008	48,464.0

NO_x Emissions from Entire Nonattainment Area Electric Generating Units, 1999-2008



		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 1999
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	33,807.1
Kentucky	East Bend	10,113.8
Ohio	Miami Fort Generating Station	26,429.1
Ohio	William H Zimmer Generating Station	22,792.3
Ohio	Walter C Beckjord Generating Station	22,091.4
Ohio	Woodsdale	244.1
	Total	**115,477.8**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2000
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	32,657.1
Kentucky	East Bend	8,671.0
Ohio	Madison Generating Station	15.1
Ohio	Miami Fort Generating Station	25,518.8
Ohio	William H Zimmer Generating Station	18,682.3
Ohio	Walter C Beckjord Generating Station	21,408.7
Ohio	Woodsdale	274.9
	Total	**107,227.9**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2001
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	25,774.7
Kentucky	East Bend	8,161.5
Ohio	Madison Generating Station	32.0
Ohio	Miami Fort Generating Station	18,598.8
Ohio	William H Zimmer Generating Station	20,886.3
Ohio	Walter C Beckjord Generating Station	16,743.0
Ohio	Woodsdale	150.9
	Total	**90,347.2**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2002
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	17,533.8
Kentucky	East Bend	5,454.9
Ohio	Madison Generating Station	48.7
Ohio	Miami Fort Generating Station	17,941.5
Ohio	William H Zimmer Generating Station	20,965.6
Ohio	Walter C Beckjord Generating Station	18,736.8
Ohio	Woodsdale	127.3
	Total	**80,808.6**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2003
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	13,416.7
Kentucky	East Bend	7,056.0
Ohio	Madison Generating Station	51.7
Ohio	Miami Fort Generating Station	15,593.7
Ohio	William H Zimmer Generating Station	20,174.0
Ohio	Walter C Beckjord Generating Station	16,727.9
Ohio	Woodsdale	64.4
	Total	**73,084.4**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2004
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	12,552.8
Kentucky	East Bend	6,187.2
Ohio	Madison Generating Station	14.0
Ohio	Miami Fort Generating Station	17,102.2
Ohio	William H Zimmer Generating Station	14,692.7
Ohio	Walter C Beckjord Generating Station	14.914.2
Ohio	Woodsdale	28.5
	Total	**65,491.6**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2005
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	7,961.3
Kentucky	East Bend	3,952.2
Ohio	Madison Generating Station	91.5
Ohio	Miami Fort Generating Station	15,264.6
Ohio	William H Zimmer Generating Station	15,153.0
Ohio	Walter C Beckjord Generating Station	13,012.8
Ohio	Woodsdale	57.0
	Total	**55,492.4**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2006
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	8,041.6
Kentucky	East Bend	5,399.7
Ohio	Madison Generating Station	38.4
Ohio	Miami Fort Generating Station	12,797.9
Ohio	William H Zimmer Generating Station	13,851.3
Ohio	Walter C Beckjord Generating Station	11,830.2
Ohio	Woodsdale	45.4
	Total	**52,004.5**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2007
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	8,739.2
Kentucky	East Bend	5,563.0
Ohio	Madison Generating Station	44.3
Ohio	Miami Fort Generating Station	9,754.6
Ohio	William H Zimmer Generating Station	13,736.6
Ohio	Walter C Beckjord Generating Station	13,031.8
Ohio	Woodsdale	110.1
	Total	**50,979.6**

		Cincinnati-Hamilton OH-KY-IN Entire Nonattainment Area NOx Emissions from EGUs 2008
State	**Facility**	**NO_x Emissions, tons / year**
Indiana	American Electric Power (AEP)-Tanners Creek Generating Station	7,429.2
Kentucky	East Bend	4,492.4
Ohio	Madison Generating Station	16.1
Ohio	Miami Fort Generating Station	12,371.7
Ohio	William H Zimmer Generating Station	16,531.1
Ohio	Walter C Beckjord Generating Station	7,549.0
Ohio	Woodsdale	74.5
	Total	**48,464.0**

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APPENDIX E

2008 Base Year Emissions Inventory and 2015 and 2020 Projected Emissions Inventory for Nitrogen Oxides (NO_x) and Volatile Organic Compounds (VOC) All Emission Sources for Lawrenceburg Township, Dearborn County, Indiana and Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area

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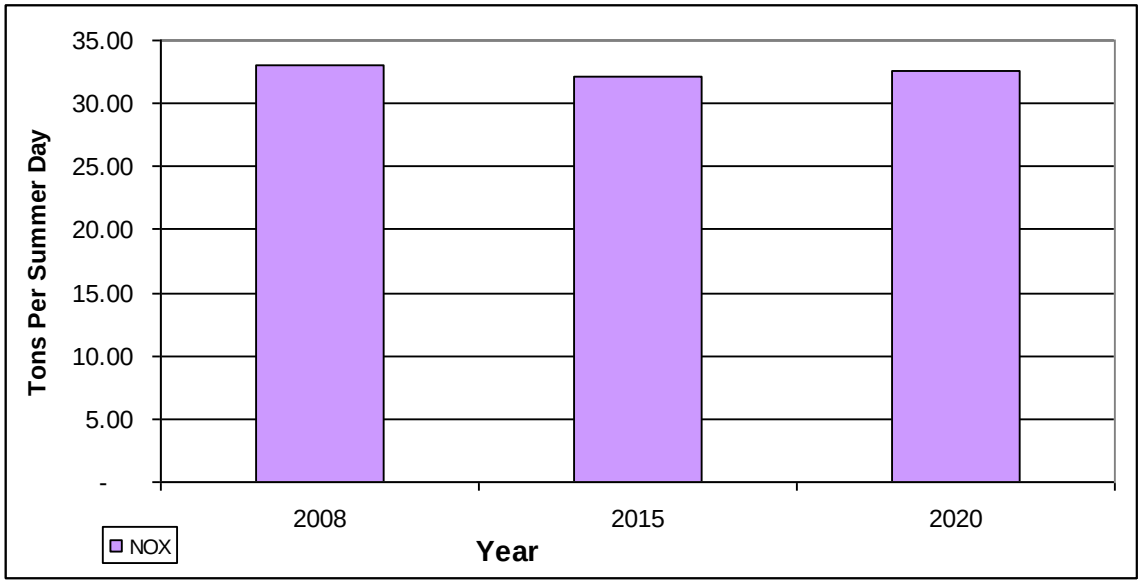
Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Source Emission Totals (Tons per Day)		
Year	**NOx**	**VOC**
2008	33.09	7.49
2015	32.07	6.86
2020	32.56	6.96

	2008 Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	0.26	1.14	1.14	30.55	**33.09**
VOC	2.42	0.74	0.75	3.58	**7.49**

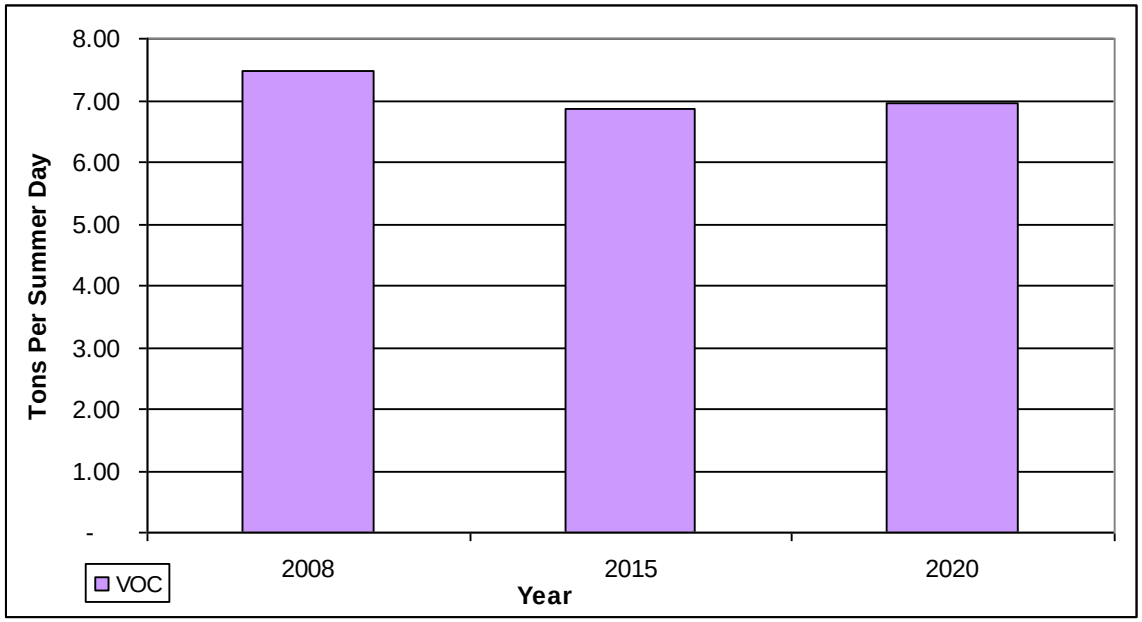
	2015 Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	0.27	0.78	0.60	30.42	**32.07**
VOC	1.79	0.62	0.50	3.95	**6.86**

	2020 Lawrenceburg Township, Dearborn County, Indiana All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	0.27	0.65	0.42	31.22	**32.56**
VOC	1.79	0.60	0.42	4.15	**6.96**

Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for Lawrenceburg Township, Dearborn County



Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for Lawrenceburg Township, Dearborn County



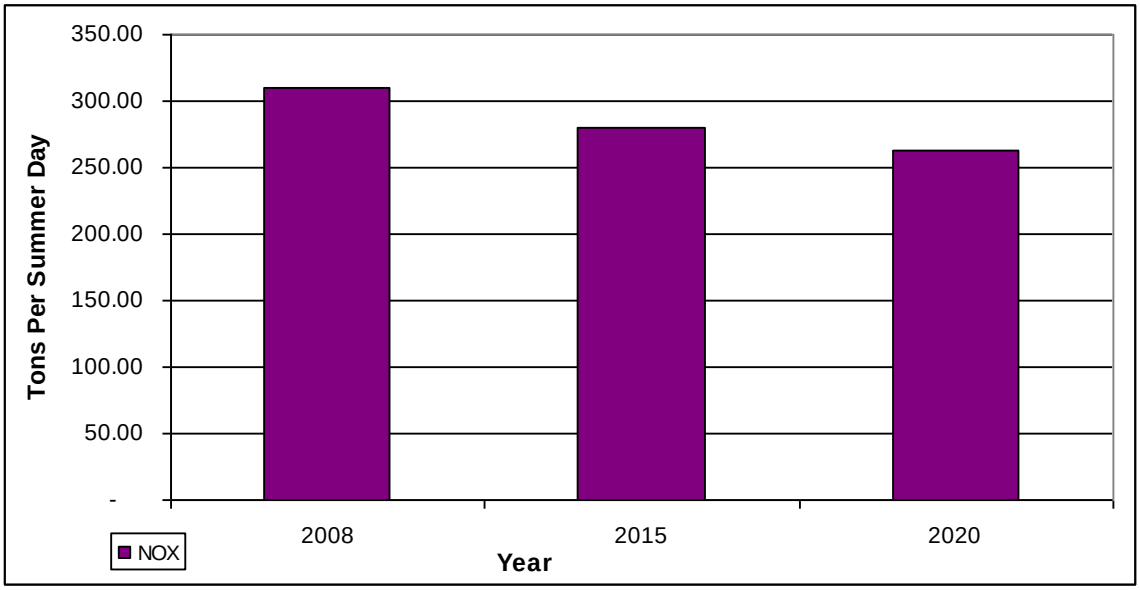
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Source Emission Totals (Tons per Day)		
Year	**NOx**	**VOC**
2008	309.47	187.78
2015	280.15	161.19
2020	262.47	157.37

	2008 Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	21.38	62.35	113.45	112.29	**309.47**
VOC	78.36	39.04	55.47	14.91	**187.78**

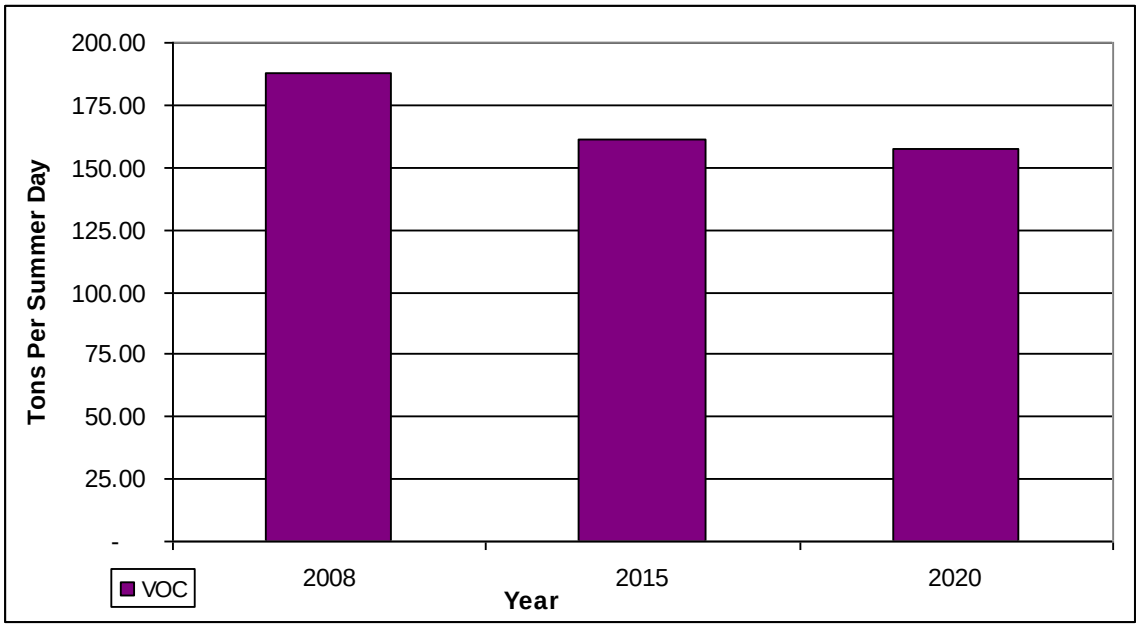
	2015 Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	21.38	45.73	54.01	159.03	**280.15**
VOC	74.69	33.65	35.35	17.50	**161.19**

	2020 Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area All Anthropogenic Sources (Tons per Day)				
	AREA	**NONROAD**	**ONROAD**	**POINT**	**GRAND TOTAL**
NOX	21.38	39.27	38.17	174.12	**262.47**
VOC	54.52	32.09	32.13	18.46	**157.37**

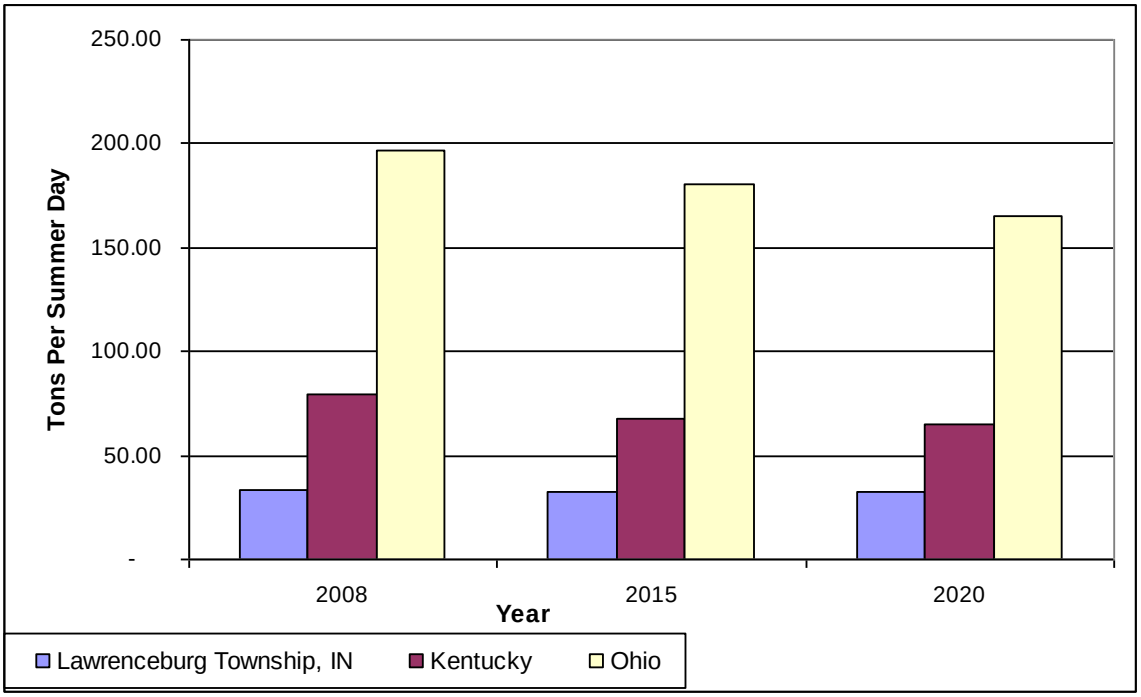
Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for the Entire Nonattainment Area



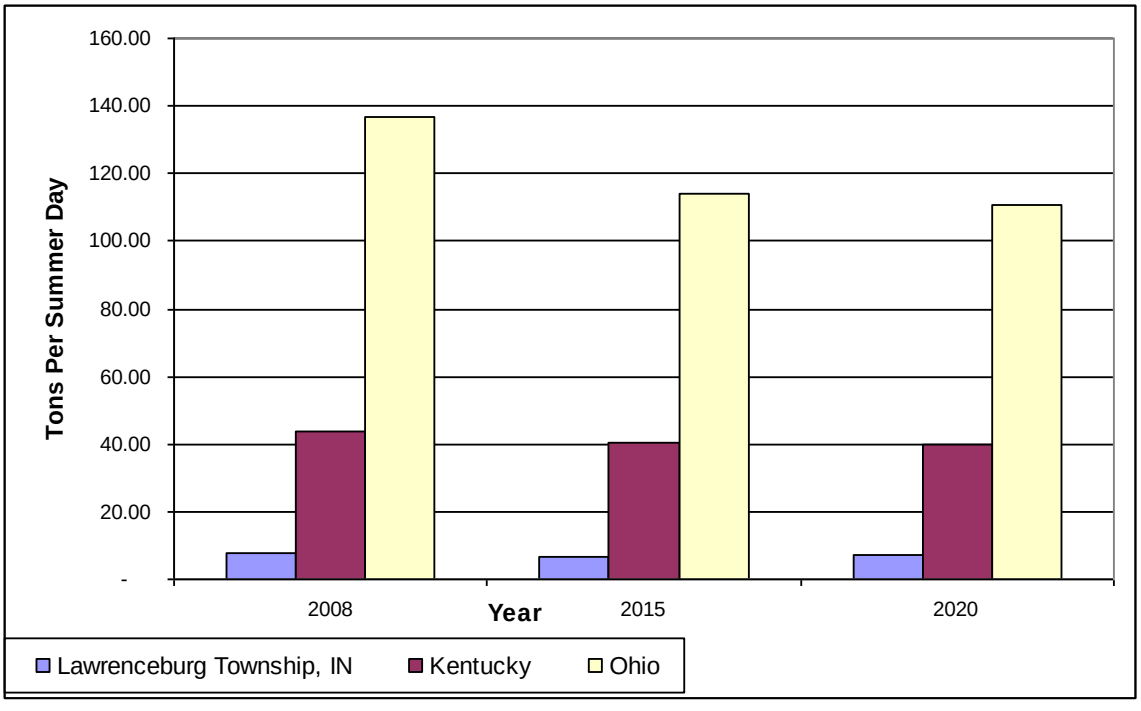
Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for the Entire Nonattainment Area



Comparison of 2008 Emissions and 2015 and 2020 Projected NO_x Emissions for Lawrenceburg Township, Dearborn County Indiana, and Kentucky and Ohio



Comparison of 2008 Emissions and 2015 and 2020 Projected VOC Emissions for Lawrenceburg Township, Dearborn County Indiana, and Kentucky and Ohio



2008
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
All Anthropogenic Sources
(Tons per Day)

State	County	Sector	NOX	VOC
Indiana	Dearborn County	AREA	0.26	2.42
Indiana	Dearborn County	NONROAD	1.14	0.74
Indiana	Dearborn County	ONROAD	1.14	0.75
Indiana	Dearborn County	EGU	27.34	0.35
Indiana	Dearborn County	POINT	3.21	3.23
Kentucky	Boone County	AREA	5.02	8.41
Kentucky	Boone County	NONROAD	11.02	5.07
Kentucky	Boone County	ONROAD	8.53	4.00
Kentucky	Boone County	EGU	23.15	0.17
Kentucky	Boone County	POINT	0.12	2.64
Kentucky	Campbell County	AREA	1.32	4.34
Kentucky	Campbell County	NONROAD	5.34	1.51
Kentucky	Campbell County	ONROAD	4.88	2.29
Kentucky	Campbell County	EGU	0.00	0.00
Kentucky	Campbell County	POINT	0.02	0.28
Kentucky	Kenton County	AREA	4.06	7.88
Kentucky	Kenton County	NONROAD	7.33	1.95
Kentucky	Kenton County	ONROAD	8.37	3.85
Kentucky	Kenton County	EGU	0.00	0.00
Kentucky	Kenton County	POINT	0.03	1.17
Ohio	Butler County	AREA	2.18	10.31
Ohio	Butler County	NONROAD	8.89	5.68
Ohio	Butler County	ONROAD	16.05	7.87
Ohio	Butler County	EGU	2.87	0.03
Ohio	Butler County	POINT	10.53	2.77
Ohio	Clermont County	AREA	1.67	6.05
Ohio	Clermont County	NONROAD	4.22	3.68
Ohio	Clermont County	ONROAD	11.05	5.42
Ohio	Clermont County	EGU	22.61	0.27
Ohio	Clermont County	POINT	0.18	0.09
Ohio	Clinton County	AREA	0.43	2.85
Ohio	Clinton County	NONROAD	2.01	1.65
Ohio	Clinton County	ONROAD	3.87	2.33
Ohio	Clinton County	EGU	0.00	0.00
Ohio	Clinton County	POINT	0.00	0.00
Ohio	Hamilton County	AREA	5.27	28.80
Ohio	Hamilton County	NONROAD	17.21	14.66
Ohio	Hamilton County	ONROAD	46.80	22.70
Ohio	Hamilton County	EGU	12.92	0.24
Ohio	Hamilton County	POINT	6.17	2.85
Ohio	Warren County	AREA	1.17	7.30
Ohio	Warren County	NONROAD	5.19	4.10
Ohio	Warren County	ONROAD	12.76	6.26
Ohio	Warren County	EGU	0.00	0.00
Ohio	Warren County	POINT	3.14	0.82

2015
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
All Anthropogenic Sources
(Tons per Day)

State	County	Sector	NOX	VOC
Indiana	Dearborn County	AREA	0.27	1.79
Indiana	Dearborn County	NONROAD	0.78	0.62
Indiana	Dearborn County	ONROAD	0.60	0.50
Indiana	Dearborn County	EGU	25.30	0.44
Indiana	Dearborn County	POINT	5.12	3.51
Kentucky	Boone County	AREA	5.03	8.50
Kentucky	Boone County	NONROAD	9.77	4.55
Kentucky	Boone County	ONROAD	4.63	3.17
Kentucky	Boone County	EGU	24.97	0.18
Kentucky	Boone County	POINT	0.11	2.86
Kentucky	Campbell County	AREA	1.30	4.20
Kentucky	Campbell County	NONROAD	4.57	1.29
Kentucky	Campbell County	ONROAD	2.54	1.74
Kentucky	Campbell County	EGU	0.00	0.00
Kentucky	Campbell County	POINT	0.02	0.30
Kentucky	Kenton County	AREA	4.02	7.66
Kentucky	Kenton County	NONROAD	6.15	1.76
Kentucky	Kenton County	ONROAD	4.23	2.85
Kentucky	Kenton County	EGU	0.00	0.00
Kentucky	Kenton County	POINT	0.03	1.31
Ohio	Butler County	AREA	2.19	9.76
Ohio	Butler County	NONROAD	5.91	4.95
Ohio	Butler County	ONROAD	7.55	4.87
Ohio	Butler County	EGU	2.86	0.02
Ohio	Butler County	POINT	11.98	4.25
Ohio	Clermont County	AREA	1.67	5.74
Ohio	Clermont County	NONROAD	2.76	3.13
Ohio	Clermont County	ONROAD	5.10	3.29
Ohio	Clermont County	EGU	50.07	0.52
Ohio	Clermont County	POINT	0.16	0.26
Ohio	Clinton County	AREA	0.43	2.72
Ohio	Clinton County	NONROAD	1.39	1.26
Ohio	Clinton County	ONROAD	2.02	1.47
Ohio	Clinton County	EGU	0.00	0.00
Ohio	Clinton County	POINT	0.00	0.00
Ohio	Hamilton County	AREA	5.30	27.38
Ohio	Hamilton County	NONROAD	11.18	12.70
Ohio	Hamilton County	ONROAD	21.11	13.44
Ohio	Hamilton County	EGU	28.32	0.31
Ohio	Hamilton County	POINT	7.39	2.97
Ohio	Warren County	AREA	1.17	6.94
Ohio	Warren County	NONROAD	3.22	3.39
Ohio	Warren County	ONROAD	6.23	4.02
Ohio	Warren County	EGU	0.00	0.00
Ohio	Warren County	POINT	2.70	0.57

2020
Entire Cincinnati-Hamilton, OH-KY-IN Nonattainment Area
All Anthropogenic Sources
(Tons per Day)

State	County	Sector	NOX	VOC
Indiana	Dearborn County	AREA	0.27	1.79
Indiana	Dearborn County	NONROAD	0.65	0.60
Indiana	Dearborn County	ONROAD	0.42	0.42
Indiana	Dearborn County	EGU	26.03	0.46
Indiana	Dearborn County	POINT	5.19	3.69
Kentucky	Boone County	AREA	5.03	8.50
Kentucky	Boone County	NONROAD	9.48	4.36
Kentucky	Boone County	ONROAD	3.45	2.96
Kentucky	Boone County	EGU	26.35	0.19
Kentucky	Boone County	POINT	0.12	3.01
Kentucky	Campbell County	AREA	1.30	4.20
Kentucky	Campbell County	NONROAD	4.34	1.22
Kentucky	Campbell County	ONROAD	1.81	1.55
Kentucky	Campbell County	EGU	0.00	0.00
Kentucky	Campbell County	POINT	0.03	0.31
Kentucky	Kenton County	AREA	4.02	7.66
Kentucky	Kenton County	NONROAD	5.75	1.73
Kentucky	Kenton County	ONROAD	3.01	2.56
Kentucky	Kenton County	EGU	0.00	0.00
Kentucky	Kenton County	POINT	0.03	1.42
Ohio	Butler County	AREA	2.19	9.76
Ohio	Butler County	NONROAD	4.64	4.80
Ohio	Butler County	ONROAD	5.37	4.50
Ohio	Butler County	EGU	2.95	0.02
Ohio	Butler County	POINT	11.91	4.56
Ohio	Clermont County	AREA	1.67	5.74
Ohio	Clermont County	NONROAD	2.17	2.96
Ohio	Clermont County	ONROAD	3.63	3.04
Ohio	Clermont County	EGU	51.49	0.53
Ohio	Clermont County	POINT	0.16	0.27
Ohio	Clinton County	AREA	0.43	2.72
Ohio	Clinton County	NONROAD	1.13	1.08
Ohio	Clinton County	ONROAD	1.41	1.22
Ohio	Clinton County	EGU	0.00	0.00
Ohio	Clinton County	POINT	0.00	0.00
Ohio	Hamilton County	AREA	5.30	27.38
Ohio	Hamilton County	NONROAD	8.73	12.19
Ohio	Hamilton County	ONROAD	14.44	12.00
Ohio	Hamilton County	EGU	29.13	0.31
Ohio	Hamilton County	POINT	7.56	3.12
Ohio	Warren County	AREA	1.17	6.94
Ohio	Warren County	NONROAD	2.38	3.15
Ohio	Warren County	ONROAD	4.63	3.88
Ohio	Warren County	EGU	0.00	0.00
Ohio	Warren County	POINT	2.70	0.57

APPENDIX F

Mobile Source Input/Output Calculation Files

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MOBILE SOURCE EMISSIONS INVENTORY FOR THE CINCINNATI OZONE NONATTAINMENT AREA

Includes a portion of Dearborn County Indiana, the counties of Boone, Campbell, Kenton in Kentucky, and the counties of Butler, Clermont, Clinton, Hamilton, and Warren in Ohio. Emission Estimates for the Year 2005, 2008, 2015 and 2020 developed in support of the Ozone SIP

OCTOBER 2009
Revised

Prepared for the Indiana Department of Environmental Management, the Kentucky Division for Air Quality and the Ohio Environmental Protection Agency by
OKI Regional Council of Governments

OKI
Ohio · Kentucky · Indiana
Regional Council of Governments

Acknowledgments

Title	Mobile Source Emissions Inventory for Cincinnati Ozone Nonattainment Area
Abstract	This report documents the methodology and results from the development of the mobile source emission inventory for ozone precursors in the Cincinnati ozone nonattainment area. The nonattainment area includes a portion of Dearborn County Indiana, Boone, Campbell and Kenton counties in Kentucky, and Butler, Clermont, Clinton, Hamilton and Warren counties in Ohio. The ozone precursors include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x). The new 2005, 2008, 2015, and 2020 inventory, as provided in this report, includes the benefits of low RVP fuel in Butler, Clermont, Hamilton and Warren counties. It is expected that the 2008 inventory, plus an additional safety margin, will be established as the revised 8-hour ozone motor vehicle emissions budgets for the Cincinnati nonattainment area.
Date	October 2009
Agency	Ohio-Kentucky-Indiana Regional Council of Governments Mark Policinski, Executive Director
Project Manager	Robert Koehler, P.E., Deputy Director
Project Staff	Andrew J. Reser, AICP, Principal Author Harikishan Perugu

The preparation of this document was financed cooperatively by the Federal Highway Administration, the Federal Transit Administration, the Commonwealth of Kentucky Transportation Cabinet, the Ohio Department of Transportation, and the units of local and county government in the OKI region. The opinions, findings, and conclusions expressed in this document are those of the OKI Regional Council of Governments and are not necessarily those of the U.S. Department of Transportation. This report does not constitute a standard, specification, or regulation.

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1. INTRODUCTION

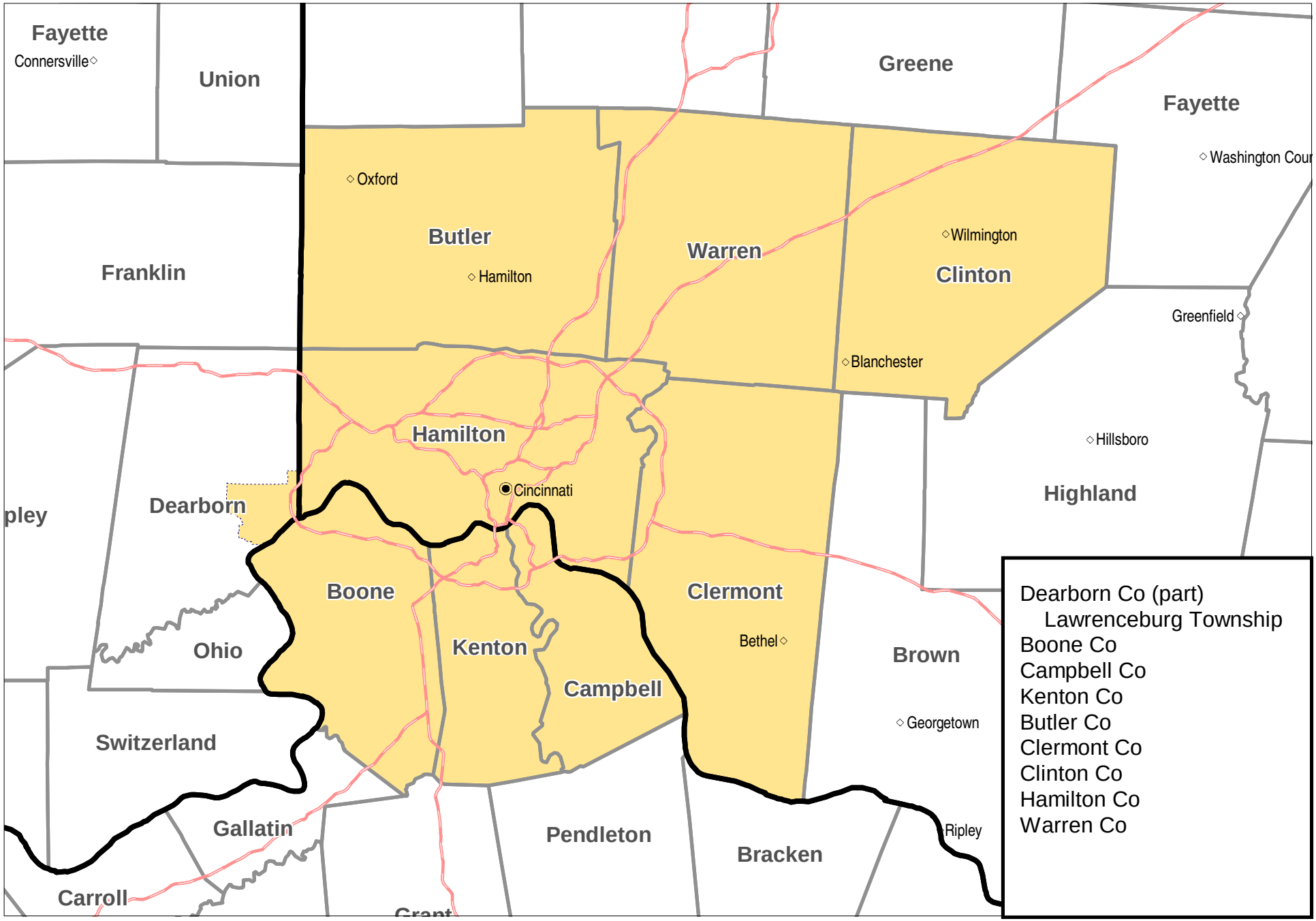
At the request of the Indiana Department of Environmental Management, the Kentucky Division for Air Quality, and the Ohio Environmental Protection Agency, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) has prepared this mobile source emissions inventory of ozone precursor pollutants. Pursuant to provisions of the CAAA of 1990, U.S. EPA designated a nine county area in the Cincinnati area as a basic nonattainment area for ozone under the eight-hour ozone standard in April 2004. The Cincinnati ozone nonattainment area includes Lawrenceburg Township in Dearborn County Indiana, the Kentucky counties of Boone, Campbell and Kenton, and the Ohio counties of Butler, Clermont, Clinton, Hamilton and Warren (Figure 1). Ozone is formed through chemical reactions induced when sunlight reacts with volatile organic compounds (VOCs; principally hydrocarbons) and nitrogen oxides (NO_X). VOCs and NO_X occur from incomplete combustion of fossil fuels. Transportation-related sources are a major contributor of these pollutants. Since heat speeds the reactions, ozone levels are typically highest during hot summer days.

The OKI Regional Council of Governments, as the Metropolitan Planning Organization (MPO), consists of Dearborn, Boone, Campbell, Kenton, Butler, Clermont, Hamilton and Warren counties. The cities of Franklin and Carlisle in Warren County are part of the Miami Valley Regional Planning Commission (MVRPC) planning area. Emissions for this portion of Warren County have been included in the inventory. Clinton County is outside of the OKI region, but is part of the ozone nonattainment area. The Ohio Department of Transportation (ODOT) is the lead planning agency for Clinton County. The Clinton County emissions analysis has been prepared by ODOT and has been included in this emissions inventory.

OKI, as the MPO, is responsible for transportation planning and air quality/transportation conformity. Transportation conformity is a mechanism to ensure that federal funding and approval are given to those transportation activities that are consistent with the air quality goals of the State Implementation Plans (SIPs) for Indiana, Kentucky and Ohio. The SIPs include an inventory of projected emissions from vehicles. The projected inventory is also known as the emissions budget. This budget establishes a maximum allowable limit on future emissions from vehicles (mobile sources). OKI's transportation plans and programs must be shown to be in conformity with all SIP provisions. The conformity process is a quantitative analysis, using U.S.EPA's vehicle emissions software (currently MOBILE), demonstrating that forecasted regional vehicle emissions do not exceed the established budget.

This report documents the process for developing the mobile emissions inventory for the Cincinnati ozone nonattainment area. Section 2 details the process and procedures used and Section 3 describes the transportation network. Section 4 provides the mobile emissions inventory.

Cincinnati-Hamilton, OH-KY-IN 8-hour Ozone Nonattainment Area



Boundaries and locations are for illustrative purposes only. This is not a regulatory document.

2. MOBILE SOURCE EMISSION FORECAST PROCESS

OKI Travel Demand Model

Transportation system performance was estimated using the OKI Travel Demand Model Version 7.6. The OKI Travel Demand Model is composed of TRANPLAN programs, CUBE Voyager programs and a series of FORTRAN programs written by OKI. It is a state of the practice model that uses the standard 4 phase sequential modeling approach of trip generation, distribution, modal choice and assignment. The model uses demographic and land use data and capacity and free-flow speed characteristics for each roadway segment in the network to produce a "loaded" highway network with forecasted traffic volumes with revised speeds based on specified speed/capacity relationships.

Travel analysis zones are the basic geographic unit for estimating travel in the OKI model. The OKI region is subdivided into 1608 traffic analysis zones to permit detail as well as manageability. A variety of socioeconomic data items are used in the OKI transportation planning process. These data are used primarily to forecast future travel patterns by serving as independent variables in OKI trip generation equations. The following categories of planning data are utilized:

- Population (household and group quarter)
- Households
- Household vehicles
- Employment (by employment category and zone of work)
- Labor force participation (by zone of residence)
- Area type

The principal data requirements of the OKI travel demand forecasting model are population and employment. From these variables, other characteristics including households, labor force, and personal vehicles may be derived. OKI utilizes both base year (2005) and future year data (2010, 2020 and 2030) in the planning process. Other years are interpolated as needed. Planning data are maintained at the Traffic Analysis Zone (TAZ) level, and originate in the 2000 Census of Population and Housing. Base year 2005 and future year data for each variable are developed through various methods. More detailed explanation of base year and future year data generation for each of the above-mentioned categories of planning data follows. All of the variables represent the latest OKI planning assumptions.

Population

Base and Future Year Data: Population data for base year 2005 and future years 2010, 2020 and 2030 originate with the 2000 Census of Population and Housing. Utilizing ArcView GIS, population data at the zonal level for 2000 was derived from the area proportion allocation of block level population.

As a tri-state regional planning agency, OKI uses county level projections as prepared by the respective state data centers (Ohio Department of Development Office of Strategic Research, Kentucky State Data Center and Indiana Business Research Center) as control

totals. The most current projections (years 2005 to 2030) were released by the Ohio and Indiana state data centers in 2003 and the Kentucky State Data Center in 2004. Population projections at the zonal level are calculated by multiplying household size by the projected zonal households. Household size is factored so that, in each county, the sum of the zonal populations equals the control total.

Households

Base Year Data: Household data for base year 2005 originates with the 2000 Census of Population and Housing. Utilizing the geographic information system ArcMap, household data at the zonal level for 2000 was derived from the area proportion allocation of block level households. Year 2000 household data was updated to 2005 with residential building permits issued between January 2000 and December 2004. The residential building locations were geocoded in ArcMap, then aggregated to the TAZs. The housing unit totals for each TAZ were converted to households by applying a vacancy rate, an adjustment for permitted but unbuilt units, and subtracting demolitions (where data was available). These households were then added to the year Census 2000 zonal household total to arrive at 2005 households for each TAZ.

Future Year Data: The preparation of household projections was accomplished by calculating the number of households for a projected county population using ratios of householders to total population by age specific cohorts derived from the 2000 Census for each analysis year. Disaggregation to TAZs was determined by historical trends, existing and future land use, topography, flood plain information, availability of land, local knowledge and other factors.

Household Vehicles

Base and Future Year Data: Base and future year household vehicle data were obtained from the 2000 Census of Population and Housing. The 2000 Census is the only source of household vehicle data available at the block group level. Average vehicles per household were calculated for block groups then applied to the TAZs associated with each block group. The 2005, 2010, 2020 and 2030 vehicles per household level was held at the 2000 level based on the fact that, since 2002, the number of vehicles per household has exceeded the number of drivers per household.

Labor Force

Base and Future Year Data: The OKI labor force is a function of the population as determined by a labor force participation ratio (the number of employed persons in the labor force per persons 16 and over). Household data for base year 2005 originates with the 2000 Census of Population and Housing. Utilizing the geographic information system ArcMap, household data at the zonal level for 2000 was derived from the area proportion allocation of block group level employed labor force. The labor force projections for 2005, 2010, 2020 and 2030 were based on the most recent projections of national labor force participation rates by age and sex cohorts from the U.S. Department of Labor, Bureau of Labor Statistics for each of those years. These rates were then applied to the projected county age/sex cohorts and adjusted to eliminate the unemployed to arrive at a county employed labor force control total. Employed labor force at the zonal level is

calculated by multiplying the labor force participation rate by the zonal population. The labor force participation rate is adjusted so that, in each county, the sum of the zonal labor force counts equals the control total.

Employment

Base Year Data: Quarterly Census of Employment and Wages (QCEW or ES202) data for 2005 was utilized as the primary tool to calculate employment at the zonal level. Individual business records containing physical location, number of employees and SIC code were geocoded through ArcMap and aggregated to the TAZ level. This data set was supplemented by other sources of data to complete the commuting employment picture in the OKI region. Each zone's employment was divided according to the SIC code into three classes (retail, office, industrial) based upon the potential for generating trips.

Future Year Data: For future year employment projection, calculation was first made of the employment at the regional level. At the regional level, employment is a calculation of the region's employed labor force minus workers who live in the region but commute out to work, plus workers who live outside the region but commute in to work. The regional total was disaggregated first to the county level based on historic trends and expected changes in the county's share of the region's employment and then to the TAZ level. Disaggregation to TAZs was determined by historical trends, existing and future land use, topography, flood plain information, availability of land, local knowledge and other factors.

Area Type

Base and Future Year Data: For each analysis year, each TAZ is assigned an area type designation as CBD, Urban, Suburban or Rural based on population and employment densities.

Model Calibration

OKI's Travel Demand Model has been validated to observed traffic volumes for the model base year 2005. The modeling network encompasses the entire ozone nonattainment area with the exception of Clinton County, Ohio. The modeling network also includes Greene, Miami and Montgomery counties in Ohio and the remainder of Dearborn County Indiana. The difference between estimated vehicle miles traveled (VMT) and 2005 observed VMT is less than 1%. A highway screenline analysis compares the screenline observed and simulated traffic volume discrepancies with the ODOT standard of maximum desirable deviation. The comparison shows that the model performs at a satisfactory level and all the errors were under the ODOT curve. Further information can be found in OKI's 2007 report, "*OKI/MVRPC Travel Demand Model Methodology/ Validation Report*". For the calibration, OKI used over 3000 traffic counts collected through 2006 by the Ohio Department of Transportation (ODOT), the Kentucky Transportation Cabinet, many county and local governments, transportation engineering consultants, and OKI. These traffic counts cover nearly 50% percent of the links in the OKI portion of the modeling network. The methodology provides consistency with past emission inventory and conformity analysis work performed by OKI.

Local Inputs and Post-Model Processing

OKI incorporates a variety of sources of local data to both improve and confirm the accuracy of VMT, as well as other travel-related parameters. Free flow speeds used on the highway and transit networks are based on travel time studies performed locally. The OKI post-processing program, IMPACT, uses the loaded highway network to generate VMT by hour, VMT by speed distribution and VMT by facility type. These tables are then included as input into MOBILE6.2. Two separate sets of VMT tables are generated: one for the four Ohio counties plus Dearborn County Indiana, and a second for the three Kentucky counties. The VMT by hour tables utilize hourly traffic distribution and directional split factors for different roadway types as developed by OKI. The main source of the data was the permanent traffic counting stations located throughout the OKI region for the years of 1998-2002. This data was supplemented with data collected at coverage count stations (locations with counts taken on only one-two days). The stations were classified by area type: urban and rural, and functional classification: freeway, arterial and collector. Speeds representing various "loaded" conditions (with traffic volumes) are estimated using techniques from the 1997 Highway Capacity Manual. This permits the estimation of speeds as conditions vary from hour to hour on the different facility types throughout the region. The IMPACT program performs the appropriate summation by area and roadway type as well as regional totals. OKI has also developed seasonal conversion factors to adjust traffic volumes to summer conditions. The factors were derived from local data collected at permanent traffic counting stations during 1994-1997 utilizing the average daily traffic monthly conversion factors for June, July and August. Further information on OKI's IMPACT program is documented in the report, *"Travel Demand Model Summary Reporting and Impact Summary Reporting: OKI/MVRPC Travel Demand Model User's Guide", OKI 2003.*

Emission Factor Model

OKI's conformity assessment utilized U.S.EPA's emissions model MOBILE6.2 to develop emission factors for VOC's, NO_X and PM2.5. The MOBILE6.2 input file contains local parameters, developed through consultation with ODOT and OEPA, for temperature, fuel programs and fuel characteristics. The local parameters are combined with the VMT tables from the OKI Travel Demand Model to produce one set of emission factors measured in grams per mile for the appropriate calendar year (from 1952 to 2050). These emission factors are then multiplied by VMT. The methodologies incorporated into MOBILE6.2 for estimating emissions are based on methods and research conducted by U.S.EPA. OKI's development of MOBILE6.2 input values were guided by the U.S.EPA's document *"Technical Guidance on the Use of MOBILE6 for Emission Inventory Preparation", January 2002*. MOBILE6.2 inputs and outputs are included in the appendices.

3. MOBILE SOURCE EMISSIONS INVENTORY

Table 1. Mobile Source Emissions by State/County for the Cincinnati Ozone Nonattainment Area (tons per day)

State	2005	2008	2015	2020
Dearborn NonAttainment Portion				
VOC	1.00	0.75	0.50	0.42
NOx	1.44	1.14	0.60	0.42
Kentucky				
Boone				
VOC	4.33	4.00	3.17	2.96
CO	47.20	44.46	37.41	38.21
NOx	10.27	8.53	4.63	3.45
Campbell				
VOC	2.52	2.29	1.74	1.55
CO	27.50	25.52	20.39	19.97
NOx	5.98	4.88	2.54	1.81
Kenton				
VOC	4.32	3.85	2.85	2.56
CO	47.19	42.76	33.68	32.97
NOx	10.39	8.37	4.23	3.01
OKI KY Total				
VOC	11.17	10.14	7.76	7.07
CO	121.89	112.74	91.48	91.14
NOx	26.64	21.78	11.40	8.27
Ohio				
Butler				
VOC	9.94	7.87	4.87	4.50
NOx	18.88	16.05	7.55	5.37
Clermont				
VOC	6.86	5.42	3.29	3.04
NOx	13.04	11.05	5.10	3.63
Hamilton				
VOC	29.47	22.70	13.44	12.00
NOx	56.51	46.80	21.11	14.44
Warren				
VOC	7.97	6.26	4.02	3.88
NOx	15.15	12.76	6.23	4.63
OKI OH Total				
VOC	54.24	42.25	25.62	23.42
NOx	103.58	86.66	39.99	28.07

Table 1 Cont. Clinton, OH				
VOC	3.02	2.33	1.47	1.22
NOx	5.07	3.87	2.02	1.41
OH VOC Total	57.26	44.58	27.09	24.64
OH NOx Total	108.65	90.53	42.01	29.48
NonAttainment Area Total				
VOC	69.43	55.47	35.35	32.13
NOx	136.73	113.45	54.01	38.17

The mobile source VOC and NO_x emissions inventory for all counties in the nonattainment area is provided in Table 1. Table 2 shows the mobile source inventory for the combined Indiana and Ohio portions of the Cincinnati ozone nonattainment area. Table 3 is the mobile source emissions inventory for the Kentucky portion of the nonattainment area. At the discretion of the Indiana Department of Environmental Management, the Kentucky Division for Air Quality and the Ohio EPA, an additional safety margin may be added to the 2008 inventory for the purpose of establishing a motor vehicle emission budget (MVEB). The addition of this safety margin would not interfere with the SIPs purpose. In the absence of an additional safety margin, the 2008 inventory, as presented below, will serve as the (MVEB) for transportation conformity.

Table 2
Mobile Source Emissions Inventory for the Indiana and Ohio Portions of the Cincinnati Ozone Nonattainment Area (tons per day)

	2005	**2008 MVEB**	**2015**	**2020**
VOC	58.26	45.33	27.59	25.06
NOx	110.09	91.67	42.61	29.90

Table 3
Mobile Source Emissions Inventory for the Kentucky Portion of the Cincinnati Ozone Nonattainment Area (tons per day)

	2005	**2008 MVEB**	**2015**	**2020**
VOC	11.17	10.14	7.76	7.07
NOx	26.64	21.78	11.40	8.27

APPENDIX A

MOBILE6.2 Input/Output Files for Indiana Portion of Nonattainment Area

VMT By Hour (INHVMT.D), all analysis years

```
VMT BY HOUR
  0.0478  0.0719  0.0796  0.0666  0.0563  0.0532
  0.0545  0.0543  0.0515  0.0523  0.0560  0.0565
  0.0504  0.0377  0.0266  0.0209  0.0197  0.0171
  0.0142  0.0156  0.0188  0.0224  0.0251  0.0310
```

2005 VMT by Speed Bin (INSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0115 0.0098 0.0000 0.0000 0.0000 0.0000 0.9787
1  2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0047 0.0053 0.0085 0.0000 0.0000 0.0000 0.0000 0.9814
1  3 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0044 0.0049 0.0079 0.0000 0.0000 0.0000 0.0000 0.9828
1  4 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0093 0.0079 0.0000 0.0000 0.0000 0.0000 0.9829
1  5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0090 0.0077 0.0000 0.0000 0.0000 0.0000 0.9833
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0096 0.0082 0.0000 0.0000 0.0000 0.0000 0.9822
1  7 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0093 0.0079 0.0000 0.0000 0.0000 0.0000 0.9827
1  8 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0090 0.0076 0.0000 0.0000 0.0000 0.0000 0.9834
1  9 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0086 0.0073 0.0000 0.0000 0.0000 0.0000 0.9841
1 10 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0083 0.0070 0.0000 0.0000 0.0000 0.0000 0.9847
1 11 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0080 0.0068 0.0000 0.0000 0.0000 0.0000 0.9852
1 12 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0067 0.0057 0.0000 0.0000 0.0000 0.0000 0.9876
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0066 0.0056 0.0000 0.0000 0.0000 0.0000 0.9878
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0079 0.0067 0.0000 0.0000 0.0000 0.0000 0.9853
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0080 0.0068 0.0000 0.0000 0.0000 0.0000 0.9852
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0076 0.0065 0.0000 0.0000 0.0000 0.0000 0.9859
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0085 0.0073 0.0000 0.0000 0.0000 0.0000 0.9842
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0075 0.0063 0.0000 0.0000 0.0000 0.0000 0.9862
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0088 0.0075 0.0000 0.0000 0.0000 0.0000 0.9837
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0098 0.0083 0.0000 0.0000 0.0000 0.0000 0.9819
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0094 0.0080 0.0000 0.0000 0.0000 0.0000 0.9827
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0098 0.0083 0.0000 0.0000 0.0000 0.0000 0.9818
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0100 0.0085 0.0000 0.0000 0.0000 0.0000 0.9815
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0104 0.0089 0.0000 0.0000 0.0000 0.0000 0.9807
2  1 0.0000 0.0000 0.0000 0.1622 0.0097 0.1308 0.0417 0.0908 0.5647 0.0000 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1713 0.0099 0.1305 0.0452 0.0877 0.5553 0.0000 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0000 0.0000 0.1783 0.0101 0.1313 0.0453 0.0886 0.5464 0.0000 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0000 0.2060 0.0103 0.1221 0.0379 0.0894 0.5343 0.0000 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.2128 0.0104 0.1212 0.0375 0.0893 0.5288 0.0000 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.2008 0.0101 0.1206 0.0375 0.0880 0.5430 0.0000 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.2200 0.0104 0.1172 0.0360 0.0876 0.5288 0.0000 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.2243 0.0106 0.1184 0.0363 0.0886 0.5217 0.0000 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.2208 0.0106 0.1200 0.0369 0.0892 0.5226 0.0000 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.2360 0.0108 0.1176 0.0358 0.0891 0.5108 0.0000 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.2240 0.0107 0.1216 0.0374 0.0904 0.5159 0.0000 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.2072 0.0105 0.1266 0.0394 0.0918 0.5244 0.0000 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2062 0.0108 0.1324 0.0414 0.0950 0.5141 0.0000 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.1941 0.0107 0.1370 0.0433 0.0967 0.5182 0.0000 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2127 0.0109 0.1325 0.0414 0.0956 0.5069 0.0000 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2142 0.0109 0.1304 0.0406 0.0945 0.5094 0.0000 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2076 0.0106 0.1272 0.0396 0.0922 0.5228 0.0000 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2327 0.0110 0.1233 0.0378 0.0920 0.5032 0.0000 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2009 0.0097 0.1118 0.0345 0.0832 0.5600 0.0000 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.1925 0.0096 0.1137 0.0353 0.0836 0.5652 0.0000 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2259 0.0108 0.1228 0.0378 0.0913 0.5114 0.0000 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.1941 0.0104 0.1305 0.0410 0.0931 0.5308 0.0000 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.1926 0.0105 0.1339 0.0422 0.0949 0.5258 0.0000 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1856 0.0103 0.1314 0.0415 0.0929 0.5383 0.0000 0.0000 0.0000 0.0000 0.0000
```

2005 VMT by Facility (INFVMT.D)

```
VMT BY FACILITY
    1 0.236 0.530 0.229 0.005
      0.258 0.508 0.229 0.005
      0.261 0.500 0.234 0.005
      0.260 0.487 0.248 0.005
      0.259 0.484 0.253 0.004
      0.256 0.495 0.244 0.005
      0.252 0.486 0.257 0.004
      0.252 0.482 0.262 0.004
      0.260 0.478 0.258 0.004
      0.263 0.467 0.266 0.004
```

```
      0.267 0.470 0.259 0.004
      0.301 0.457 0.238 0.004
      0.290 0.461 0.246 0.004
      0.255 0.489 0.252 0.004
      0.247 0.484 0.266 0.004
      0.260 0.476 0.261 0.004
      0.257 0.485 0.254 0.004
      0.274 0.458 0.264 0.004
      0.296 0.475 0.225 0.005
      0.279 0.490 0.225 0.005
      0.248 0.480 0.268 0.004
      0.239 0.504 0.252 0.004
      0.228 0.510 0.258 0.004
      0.230 0.516 0.249 0.005
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
```

2005 MOBILE6.2 Input File (INSCN.IN)

```
* Mobile6 file for Dearborn County, IN
* created 6/7/06, ajr,pre 2006
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : in.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : inemiss.tb1
RUN DATA
```

```
*******************  Run Section  ***************************
VMT BY HOUR         : INHVMT.D
SPEED VMT           : INSVMT.D
VMT BY FACILITY     : INFVMT.D
*REG DIST            : INREG.D
EXPRESS HC AS VOC   :
EXPAND BUS EFS      :
*******************  Summer Scenario Section  ***********************
SCENARIO RECORD     : Indiana Emissions - CY20xx
CALENDAR YEAR       : 2005
EVALUATION MONTH    : 7
SEASON              : 1
MIN/MAX TEMP        : 61.0 95.0
ABSOLUTE HUMIDITY   : 75.0
FUEL PROGRAM        : 1
FUEL RVP            : 9.0
PARTICLE SIZE       : 2.5
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR       : 313.00
*******************  Annual Scenario Section  ***********************
SCENARIO RECORD     : Indiana Emissions - CY20xx
CALENDAR YEAR       : 2005
EVALUATION MONTH    : 7
MIN/MAX TEMP        : 47.0 64.0
FUEL PROGRAM        : 1
FUEL RVP            : 9.0
PARTICLE SIZE       : 2.5
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR       : 318.00
*******************  End of Run  ****************************
END OF RUN
```

2005 MOBILE6.2 Output Report (IN.RPT)

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: INSCN.IN (file 1, run 1).                                     *
*****************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: INHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: INSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: INFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2005
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  61.0 (F)
              Maximum Temperature:  95.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   92. ppm
```

```
            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
              Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4158    0.3387    0.1165              0.0360    0.0006    0.0019    0.0849    0.0057    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.421     1.461     2.332     1.684     2.335    0.626     0.870     0.620      3.37     1.516
    Composite CO  :     12.72     15.11     20.39     16.46     22.20    1.741     1.521     3.691     20.98    14.019
    Composite NOX :      0.948     1.148     1.483     1.234     4.207    1.485     1.544    12.551      1.20     2.183
 -------------------------------------------------------------------------------------------------------------------------
         Veh. Type:    GasBUS     URBAN    SCHOOL
                       ------    ------    ------
           VMT Mix:    0.0003    0.0009    0.0016
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :     9.702     0.586     0.842
    Composite CO  :   137.29      4.535     3.219
    Composite NOX :     8.274    15.786    13.826
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

                    Calendar Year:  2005
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  47.0 (F)
               Maximum Temperature:  64.0 (F)
                 Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   9.0 psi
               Fuel Sulfur Content:   92. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4158    0.3387    0.1165              0.0360    0.0006    0.0019    0.0849    0.0057    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.148     1.297     2.093     1.501     1.786    0.626     0.870     0.620      2.22     1.292
    Composite CO  :     15.35     18.58     24.01     19.97     20.81    1.741     1.521     3.691     17.79    16.641
    Composite NOX :      0.924     1.190     1.544     1.281     4.334    1.485     1.544    12.551      1.41     2.200
 -------------------------------------------------------------------------------------------------------------------------
         Veh. Type:    GasBUS     URBAN    SCHOOL
                       ------    ------    ------
           VMT Mix:    0.0003    0.0009    0.0016
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :     7.662     0.586     0.842
    Composite CO  :   118.47      4.535     3.219
    Composite NOX :     8.782    15.786    13.826
-------------------------------------------------------------------------------------------------------------------------
```

2008 VMT by Speed bin (INSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0132 0.0090 0.0000 0.0000 0.0000 0.0000 0.9779
1  2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0047 0.0068 0.0078 0.0000 0.0000 0.0000 0.0000 0.9807
1  3 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0044 0.0063 0.0072 0.0000 0.0000 0.0000 0.0000 0.9821
1  4 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0106 0.0072 0.0000 0.0000 0.0000 0.0000 0.9822
1  5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0103 0.0070 0.0000 0.0000 0.0000 0.0000 0.9827
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0110 0.0075 0.0000 0.0000 0.0000 0.0000 0.9815
1  7 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0107 0.0073 0.0000 0.0000 0.0000 0.0000 0.9820
1  8 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0103 0.0070 0.0000 0.0000 0.0000 0.0000 0.9827
1  9 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0098 0.0067 0.0000 0.0000 0.0000 0.0000 0.9835
1 10 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0095 0.0064 0.0000 0.0000 0.0000 0.0000 0.9841
1 11 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0092 0.0062 0.0000 0.0000 0.0000 0.0000 0.9846
1 12 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0077 0.0052 0.0000 0.0000 0.0000 0.0000 0.9871
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0076 0.0052 0.0000 0.0000 0.0000 0.0000 0.9873
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0091 0.0062 0.0000 0.0000 0.0000 0.0000 0.9848
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0092 0.0062 0.0000 0.0000 0.0000 0.0000 0.9846
```

```
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0087 0.0059 0.0000 0.0000 0.0000 0.0000 0.9853
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0098 0.0067 0.0000 0.0000 0.0000 0.0000 0.9836
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0086 0.0058 0.0000 0.0000 0.0000 0.0000 0.9856
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0101 0.0069 0.0000 0.0000 0.0000 0.0000 0.9831
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0112 0.0076 0.0000 0.0000 0.0000 0.0000 0.9812
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0107 0.0073 0.0000 0.0000 0.0000 0.0000 0.9820
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0112 0.0076 0.0000 0.0000 0.0000 0.0000 0.9811
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0115 0.0078 0.0000 0.0000 0.0000 0.0000 0.9807
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0119 0.0081 0.0000 0.0000 0.0000 0.0000 0.9799
2  1 0.0000 0.0000 0.0000 0.1745 0.0083 0.1008 0.0469 0.0340 0.6355 0.0000 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1844 0.0088 0.1002 0.0507 0.0299 0.6260 0.0000 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0000 0.0000 0.1909 0.0091 0.0999 0.0506 0.0299 0.6195 0.0000 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0000 0.2202 0.0105 0.0909 0.0427 0.0319 0.6037 0.0000 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.2268 0.0108 0.0896 0.0421 0.0316 0.5991 0.0000 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.2140 0.0102 0.0896 0.0421 0.0314 0.6126 0.0000 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.2339 0.0111 0.0858 0.0404 0.0306 0.5981 0.0000 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.2380 0.0113 0.0864 0.0407 0.0308 0.5928 0.0000 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.2343 0.0112 0.0878 0.0414 0.0312 0.5941 0.0000 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.2505 0.0119 0.0852 0.0403 0.0307 0.5813 0.0000 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.2374 0.0113 0.0890 0.0419 0.0315 0.5889 0.0000 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.2191 0.0104 0.0936 0.0439 0.0324 0.6006 0.0000 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2180 0.0104 0.0983 0.0460 0.0336 0.5936 0.0000 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2056 0.0098 0.1029 0.0480 0.0347 0.5990 0.0000 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2249 0.0107 0.0981 0.0460 0.0337 0.5865 0.0000 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2265 0.0108 0.0964 0.0452 0.0332 0.5880 0.0000 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2206 0.0105 0.0945 0.0443 0.0327 0.5974 0.0000 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2472 0.0118 0.0901 0.0425 0.0320 0.5764 0.0000 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2152 0.0103 0.0829 0.0390 0.0297 0.6229 0.0000 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2069 0.0099 0.0852 0.0400 0.0303 0.6278 0.0000 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2422 0.0115 0.0908 0.0428 0.0322 0.5805 0.0000 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2073 0.0099 0.0983 0.0460 0.0337 0.6049 0.0000 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2054 0.0098 0.1010 0.0472 0.0343 0.6024 0.0000 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1980 0.0094 0.0993 0.0464 0.0338 0.6131 0.0000 0.0000 0.0000 0.0000 0.0000
```

2008 VMT by Facility Type (INFVMT.D)

```
VMT BY FACILITY
    1 0.244 0.539 0.211 0.006
      0.267 0.516 0.212 0.005
      0.269 0.510 0.216 0.005
      0.268 0.495 0.233 0.005
      0.266 0.492 0.237 0.005
      0.262 0.504 0.229 0.005
      0.258 0.494 0.242 0.005
      0.257 0.492 0.247 0.005
      0.266 0.488 0.242 0.004
      0.269 0.475 0.252 0.004
      0.273 0.480 0.243 0.004
      0.307 0.468 0.221 0.004
      0.295 0.473 0.228 0.004
      0.261 0.503 0.233 0.004
      0.252 0.497 0.247 0.004
      0.265 0.489 0.243 0.004
      0.263 0.495 0.237 0.004
      0.280 0.467 0.249 0.004
      0.304 0.479 0.212 0.005
      0.288 0.494 0.212 0.006
      0.256 0.486 0.253 0.005
      0.246 0.514 0.235 0.005
      0.234 0.522 0.239 0.005
      0.237 0.527 0.231 0.005
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
```

```
0.010 0.949 0.035 0.002
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.010 0.949 0.035 0.002
0.010 0.949 0.035 0.002
0.010 0.949 0.035 0.002
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
0.003 0.963 0.030 0.004
```

2008 MOBILE6.2 Input File (INSCN.IN)

```
* Mobile6 file for Dearborn County, IN
* created 4/9/07, ajr post em62in.06c
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : in.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : inemiss.tb1
RUN DATA
******************  Run Section  ***************************
VMT BY HOUR        : INHVMT.D
SPEED VMT          : INSVMT.D
VMT BY FACILITY    : INFVMT.D
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.10
******************  Summer Scenario Section  *********************
SCENARIO RECORD    : Indiana Emissions - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
SEASON             : 1
MIN/MAX TEMP       : 62.0 91.3
FUEL PROGRAM       : 1
FUEL RVP           : 9.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
```

```
DIESEL SULFUR      : 43
*******************  Annual Scenario Section  **********************
SCENARIO RECORD    : Indiana Emissions - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
MIN/MAX TEMP       : 47.0 64.0
FUEL PROGRAM       : 1
FUEL RVP           : 9.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
*******************  End of Run  ****************************
END OF RUN
```

2008 MOBILE6.2 Output Report (IN.RPT)

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: INSCN.IN (file 1, run 1).                                *
************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: INHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: INSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: INFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2008
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.0 (F)
              Maximum Temperature:  91.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.6 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
```

```
                Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.3728    0.3705    0.1273              0.0359    0.0004    0.0019    0.0857    0.0055
1.0000
  ---------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      1.026     1.055     1.747     1.232     1.634    0.311     0.595     0.504      2.98
1.115
     Composite CO  :      9.67     11.41     15.71     12.51     15.69    1.215     1.028     2.758     19.79
10.745
     Composite NOX :      0.686     0.860     1.238     0.957     2.909    0.776     1.065     9.881      1.23
1.692
  ---------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0002    0.0009    0.0017
---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     7.973     0.374     0.726
     Composite CO  :   104.18      3.451     2.765
     Composite NOX :     7.683    13.272    11.989
---------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2008
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  47.0 (F)
               Maximum Temperature:  64.0 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   9.0 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.3728    0.3705    0.1273              0.0359    0.0004    0.0019    0.0857    0.0055
1.0000
  ---------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      0.876     0.968     1.598     1.129     1.299    0.311     0.595     0.504      2.18
0.992
     Composite CO  :     12.16     14.76     19.91     16.08     15.68    1.215     1.028     2.758     17.64
13.440
     Composite NOX :      0.675     0.901     1.302     1.003     3.017    0.776     1.065     9.881      1.42
1.716
  ---------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
```

```
           VMT Mix:    0.0002    0.0009    0.0017
-------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     6.524     0.374     0.726
     Composite CO  :    98.89      3.451     2.765
     Composite NOX :     8.570    13.272    11.989
-------------------------------------------------------------------------------------------------------------------------------
```

2015 VMT by Speed Bin (INSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0135 0.0089 0.0000 0.0000 0.0000 0.0000 0.9777
1  2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0096 0.0022 0.0077 0.0000 0.0000 0.0000 0.0000 0.9805
1  3 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0089 0.0020 0.0072 0.0000 0.0000 0.0000 0.0000 0.9820
1  4 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0043 0.0066 0.0071 0.0000 0.0000 0.0000 0.0000 0.9820
1  5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0105 0.0069 0.0000 0.0000 0.0000 0.0000 0.9825
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0112 0.0074 0.0000 0.0000 0.0000 0.0000 0.9814
1  7 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0109 0.0072 0.0000 0.0000 0.0000 0.0000 0.9819
1  8 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0105 0.0069 0.0000 0.0000 0.0000 0.0000 0.9826
1  9 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0101 0.0066 0.0000 0.0000 0.0000 0.0000 0.9833
1 10 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0097 0.0064 0.0000 0.0000 0.0000 0.0000 0.9839
1 11 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0094 0.0062 0.0000 0.0000 0.0000 0.0000 0.9845
1 12 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0078 0.0052 0.0000 0.0000 0.0000 0.0000 0.9870
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0077 0.0051 0.0000 0.0000 0.0000 0.0000 0.9872
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0093 0.0061 0.0000 0.0000 0.0000 0.0000 0.9846
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0094 0.0062 0.0000 0.0000 0.0000 0.0000 0.9844
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0089 0.0059 0.0000 0.0000 0.0000 0.0000 0.9852
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0100 0.0066 0.0000 0.0000 0.0000 0.0000 0.9834
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0087 0.0058 0.0000 0.0000 0.0000 0.0000 0.9855
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0103 0.0068 0.0000 0.0000 0.0000 0.0000 0.9829
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0114 0.0075 0.0000 0.0000 0.0000 0.0000 0.9810
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0110 0.0072 0.0000 0.0000 0.0000 0.0000 0.9818
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0115 0.0076 0.0000 0.0000 0.0000 0.0000 0.9809
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0117 0.0077 0.0000 0.0000 0.0000 0.0000 0.9805
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0122 0.0080 0.0000 0.0000 0.0000 0.0000 0.9797
2  1 0.0000 0.0000 0.0000 0.1735 0.0086 0.0897 0.0635 0.0801 0.5846 0.0000 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1832 0.0087 0.0914 0.0654 0.0766 0.5746 0.0000 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0000 0.0000 0.1907 0.0089 0.0937 0.0675 0.0905 0.5487 0.0000 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0000 0.2194 0.0090 0.0844 0.0591 0.0774 0.5508 0.0000 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.2266 0.0091 0.0838 0.0568 0.0790 0.5448 0.0000 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.2138 0.0088 0.0832 0.0568 0.0778 0.5596 0.0000 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.2339 0.0090 0.0811 0.0544 0.0775 0.5440 0.0000 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.2386 0.0091 0.0821 0.0549 0.0784 0.5369 0.0000 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.2350 0.0092 0.0831 0.0559 0.0789 0.5380 0.0000 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.2508 0.0093 0.0816 0.0541 0.0789 0.5252 0.0000 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.2385 0.0093 0.0843 0.0567 0.0800 0.5313 0.0000 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.2211 0.0092 0.0875 0.0599 0.0812 0.5411 0.0000 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2206 0.0095 0.0915 0.0631 0.0841 0.5313 0.0000 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2080 0.0095 0.0946 0.0660 0.0855 0.5364 0.0000 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2275 0.0096 0.0917 0.0630 0.0846 0.5237 0.0000 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2289 0.0095 0.0903 0.0618 0.0837 0.5259 0.0000 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2216 0.0092 0.0879 0.0602 0.0816 0.5395 0.0000 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2479 0.0095 0.0856 0.0573 0.0816 0.5181 0.0000 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2131 0.0084 0.0771 0.0520 0.0734 0.5759 0.0000 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2044 0.0084 0.0783 0.0534 0.0738 0.5818 0.0000 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2406 0.0094 0.0851 0.0572 0.0809 0.5268 0.0000 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2075 0.0092 0.0900 0.0624 0.0823 0.5486 0.0000 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2062 0.0093 0.0924 0.0643 0.0839 0.5439 0.0000 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1984 0.0090 0.0905 0.0632 0.0821 0.5568 0.0000 0.0000 0.0000 0.0000 0.0000
```

2015 VMT by Facility Type (INFVMT.D)

```
VMT BY FACILITY
    1 0.248 0.545 0.201 0.006
      0.270 0.522 0.202 0.005
      0.274 0.514 0.208 0.005
      0.272 0.499 0.225 0.005
      0.271 0.495 0.230 0.005
      0.267 0.507 0.221 0.005
      0.263 0.496 0.236 0.005
      0.262 0.493 0.240 0.005
      0.271 0.489 0.236 0.005
      0.274 0.477 0.245 0.004
      0.278 0.480 0.237 0.004
      0.314 0.467 0.215 0.004
```

```
      0.303 0.472 0.221 0.004
      0.268 0.503 0.226 0.004
      0.258 0.497 0.241 0.004
      0.272 0.488 0.236 0.004
      0.269 0.497 0.230 0.005
      0.285 0.468 0.242 0.004
      0.307 0.483 0.204 0.005
      0.290 0.500 0.204 0.006
      0.259 0.491 0.245 0.005
      0.251 0.518 0.227 0.005
      0.239 0.525 0.231 0.005
      0.242 0.530 0.223 0.005
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
```

2015 MOBILE6.2 Input File (INSCN.IN)

```
* Mobile6 file for Dearborn County, IN
* created 4/9/07, ajr post em62in.06c
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : in.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : inemiss.tb1
```

```
RUN DATA
********************  Run Section  ***************************
VMT BY HOUR         : INHVMT.D
SPEED VMT           : INSVMT.D
VMT BY FACILITY     : INFVMT.D
EXPAND BUS EFS      :
REBUILD EFFECTS     : 0.10
********************  Summer Scenario Section  ***********************
SCENARIO RECORD     : Indiana Emissions - CY20xx
CALENDAR YEAR       : 2015
EVALUATION MONTH    : 7
SEASON              : 1
MIN/MAX TEMP        : 62.0 91.3
FUEL PROGRAM        : 1
FUEL RVP            : 9.0
PARTICLE SIZE       : 2.5
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR       : 43
********************  Annual Scenario Section  ***********************
SCENARIO RECORD     : Indiana Emissions - CY20xx
CALENDAR YEAR       : 2015
EVALUATION MONTH    : 7
MIN/MAX TEMP        : 47.0 64.0
FUEL PROGRAM        : 1
FUEL RVP            : 9.0
PARTICLE SIZE       : 2.5
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR       : 43
********************  End of Run  ****************************
END OF RUN
```

2015 MOBILE6.2 Output File (IN.RPT)

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: INSCN.IN (file 1, run 1).                                *
************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: INHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: INSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: INFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.0 (F)
              Maximum Temperature:  91.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.6 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:               <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053
1.0000
  ------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      0.544     0.634     1.127     0.760     0.858    0.106     0.324     0.337      2.97
0.672
     Composite CO  :      7.05      8.04     10.87      8.76      9.92     0.799     0.641     0.941     19.78
7.645
     Composite NOX :      0.369     0.475     0.835     0.567     1.086    0.173     0.474     3.747      1.23
0.804
  ------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     2.719     0.269     0.513
     Composite CO  :    18.47      1.573     1.485
     Composite NOX :     3.970     6.114     7.085
------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.
```

```
                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  47.0 (F)
               Maximum Temperature:  64.0 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   9.0 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053
1.0000
  ------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      0.480     0.594     1.045     0.709     0.680    0.106     0.324     0.337      2.17
0.613
     Composite CO  :      9.61     10.58     13.92     11.44     10.16     0.799     0.641     0.941     17.63
9.935
     Composite NOX :      0.358     0.494     0.873     0.591     1.114    0.173     0.474     3.747      1.43
0.817
  ------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     2.104     0.269     0.513
     Composite CO  :    18.91      1.573     1.485
     Composite NOX :     4.073     6.114     7.085
------------------------------------------------------------------------------------------------------------------------
```

2020 VMT by Speed Bin (INSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0053 0.0082 0.0086 0.0000 0.0000 0.0000 0.0000 0.9779
1  2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0046 0.0050 0.0021 0.0075 0.0000 0.0000 0.0000 0.0000 0.9807
1  3 0.0000 0.0000 0.0000 0.0000 0.0000 0.0043 0.0046 0.0020 0.0070 0.0000 0.0000 0.0000 0.0000 0.9822
1  4 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0043 0.0066 0.0069 0.0000 0.0000 0.0000 0.0000 0.9822
1  5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0105 0.0068 0.0000 0.0000 0.0000 0.0000 0.9827
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0112 0.0072 0.0000 0.0000 0.0000 0.0000 0.9816
1  7 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0109 0.0070 0.0000 0.0000 0.0000 0.0000 0.9821
1  8 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0105 0.0067 0.0000 0.0000 0.0000 0.0000 0.9827
1  9 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0101 0.0064 0.0000 0.0000 0.0000 0.0000 0.9835
1 10 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0097 0.0062 0.0000 0.0000 0.0000 0.0000 0.9841
1 11 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0094 0.0060 0.0000 0.0000 0.0000 0.0000 0.9846
1 12 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0078 0.0050 0.0000 0.0000 0.0000 0.0000 0.9872
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0077 0.0050 0.0000 0.0000 0.0000 0.0000 0.9873
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0093 0.0059 0.0000 0.0000 0.0000 0.0000 0.9848
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0094 0.0060 0.0000 0.0000 0.0000 0.0000 0.9846
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0089 0.0057 0.0000 0.0000 0.0000 0.0000 0.9854
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0100 0.0064 0.0000 0.0000 0.0000 0.0000 0.9836
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0087 0.0056 0.0000 0.0000 0.0000 0.0000 0.9857
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0103 0.0066 0.0000 0.0000 0.0000 0.0000 0.9831
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0114 0.0073 0.0000 0.0000 0.0000 0.0000 0.9812
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0109 0.0070 0.0000 0.0000 0.0000 0.0000 0.9820
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0115 0.0074 0.0000 0.0000 0.0000 0.0000 0.9812
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0117 0.0075 0.0000 0.0000 0.0000 0.0000 0.9808
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0122 0.0078 0.0000 0.0000 0.0000 0.0000 0.9800
2  1 0.0000 0.0000 0.0000 0.1833 0.0076 0.0842 0.0679 0.0777 0.5793 0.0000 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1934 0.0095 0.0864 0.0688 0.0965 0.5455 0.0000 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0000 0.0000 0.2013 0.0096 0.0869 0.0724 0.1084 0.5214 0.0000 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0000 0.2313 0.0078 0.0790 0.0689 0.0870 0.5259 0.0000 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.2388 0.0079 0.0785 0.0605 0.0763 0.5380 0.0000 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.2255 0.0077 0.0780 0.0606 0.0752 0.5531 0.0000 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.2465 0.0078 0.0760 0.0580 0.0748 0.5370 0.0000 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.2514 0.0079 0.0768 0.0585 0.0833 0.5220 0.0000 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.2476 0.0080 0.0778 0.0595 0.0762 0.5310 0.0000 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.2641 0.0081 0.0764 0.0576 0.0760 0.5179 0.0000 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.2513 0.0081 0.0789 0.0604 0.0772 0.5242 0.0000 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.2332 0.0081 0.0820 0.0639 0.0824 0.5305 0.0000 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2327 0.0083 0.0858 0.0673 0.0813 0.5246 0.0000 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2195 0.0083 0.0887 0.0705 0.0828 0.5301 0.0000 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2399 0.0084 0.0859 0.0671 0.0818 0.5169 0.0000 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2413 0.0083 0.0846 0.0659 0.0809 0.5190 0.0000 0.0000 0.0000 0.0000 0.0000
```

```
2 17 0.0000 0.0000 0.0000 0.2336 0.0081 0.0823 0.0642 0.0788 0.5329 0.0000 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2610 0.0083 0.0801 0.0611 0.0786 0.5110 0.0000 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2247 0.0073 0.0722 0.0555 0.0709 0.5693 0.0000 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2155 0.0073 0.0734 0.0569 0.0713 0.5755 0.0000 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2533 0.0081 0.0796 0.0609 0.0779 0.5200 0.0000 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2189 0.0080 0.0844 0.0666 0.0796 0.5425 0.0000 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2175 0.0082 0.0866 0.0686 0.0812 0.5378 0.0000 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.2094 0.0080 0.0849 0.0674 0.0795 0.5508 0.0000 0.0000 0.0000 0.0000 0.0000
```

2020 VMT by Facility Type (INFVMT.D)

```
VMT BY FACILITY
    1 0.251 0.541 0.202 0.006
      0.273 0.518 0.204 0.005
      0.277 0.509 0.209 0.005
      0.274 0.493 0.227 0.005
      0.273 0.489 0.233 0.005
      0.270 0.502 0.224 0.005
      0.266 0.490 0.239 0.005
      0.265 0.487 0.244 0.005
      0.274 0.483 0.239 0.005
      0.276 0.471 0.249 0.004
      0.281 0.475 0.240 0.004
      0.317 0.461 0.218 0.004
      0.306 0.467 0.224 0.004
      0.270 0.498 0.227 0.004
      0.261 0.491 0.243 0.004
      0.274 0.482 0.239 0.004
      0.271 0.492 0.233 0.005
      0.288 0.462 0.245 0.004
      0.310 0.478 0.207 0.005
      0.293 0.495 0.206 0.006
      0.261 0.485 0.248 0.005
      0.253 0.513 0.229 0.005
      0.242 0.521 0.233 0.005
      0.244 0.526 0.225 0.005
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.010 0.949 0.035 0.002
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
```

```
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
      0.003 0.963 0.030 0.004
```

2020 MOBILE6.2 Input File (INSCN.IN)

```
* Mobile6 file for Dearborn County, IN
* created 4/9/07, ajr post em62in.06c
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : in.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : inemiss.tb1
RUN DATA
******************  Run Section  ***************************
VMT BY HOUR        : INHVMT.D
SPEED VMT          : INSVMT.D
VMT BY FACILITY    : INFVMT.D
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.10
******************  Summer Scenario Section  ***********************
SCENARIO RECORD    : Indiana Emissions - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
SEASON             : 1
MIN/MAX TEMP       : 62.0 91.3
FUEL PROGRAM       : 1
FUEL RVP           : 9.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
******************  Annual Scenario Section  ***********************
SCENARIO RECORD    : Indiana Emissions - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
MIN/MAX TEMP       : 47.0 64.0
FUEL PROGRAM       : 1
FUEL RVP           : 9.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
******************  End of Run  ****************************
END OF RUN
```

2020 MOBILE6.2 Output File (IN.RPT)

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: INSCN.IN (file 1, run 1).                                     *
*****************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: INHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: INSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: INFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                  Minimum Temperature:  62.0 (F)
                  Maximum Temperature:  91.3 (F)
                    Absolute Humidity:   75. grains/lb
                     Nominal Fuel RVP:   9.0 psi
                        Weathered RVP:   8.6 psi
                  Fuel Sulfur Content:   30. ppm

                  Exhaust I/M Program:  No
                     Evap I/M Program:  No
                          ATP Program:  No
                     Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.420     0.513     0.824     0.593     0.611     0.069     0.224     0.300      2.97     0.531
     Composite CO  :      6.40      7.27      9.44      7.82      9.61     0.709     0.514     0.551     19.90     6.896
     Composite NOX :      0.269     0.372     0.656     0.445     0.583     0.071     0.296     1.931      1.23     0.534
  ---------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.573     0.256     0.434
     Composite CO  :    17.72      0.734     1.006
     Composite NOX :     2.132     2.704     4.692
---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Indiana Emissions - CY20xx
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  47.0 (F)
                Maximum Temperature:  64.0 (F)
                  Absolute Humidity:   75. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   9.0 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                  Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.375     0.489     0.788     0.566     0.488    0.069     0.224     0.300      2.18     0.494
     Composite CO  :      8.95      9.49     11.97     10.13      9.83     0.709     0.514     0.551     17.73     8.966
     Composite NOX :      0.257     0.383     0.681     0.459     0.599    0.071     0.296     1.931      1.43     0.541
 -------------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.258     0.256     0.434
     Composite CO  :    18.14      0.734     1.006
     Composite NOX :     2.187     2.704     4.692
-------------------------------------------------------------------------------------------------------------------------
```

APPENDIX B

MOBILE6.2 Input/Output Files for Kentucky Portion of Nonattainment Area

VMT By Hour (KYHVMT.D), all analysis years

```
VMT BY HOUR
  0.0478  0.0719  0.0796  0.0666  0.0563  0.0532
  0.0545  0.0543  0.0515  0.0523  0.0560  0.0565
  0.0504  0.0377  0.0266  0.0209  0.0197  0.0171
  0.0142  0.0156  0.0188  0.0224  0.0251  0.0310
```

2005 VMT by Speed Bin (KYSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0052 0.0000 0.0011 0.0222 0.0279 0.0462 0.0454 0.0566 0.1746 0.6208
1  2 0.0006 0.0040 0.0017 0.0039 0.0000 0.0010 0.0055 0.0151 0.0228 0.0433 0.0401 0.0807 0.1605 0.6206
1  3 0.0048 0.0000 0.0015 0.0039 0.0006 0.0027 0.0078 0.0146 0.0224 0.0811 0.0687 0.1074 0.0805 0.6041
1  4 0.0054 0.0000 0.0000 0.0000 0.0007 0.0019 0.0101 0.0176 0.0249 0.0493 0.0371 0.0832 0.1618 0.6081
1  5 0.0058 0.0000 0.0000 0.0000 0.0000 0.0007 0.0107 0.0152 0.0282 0.0469 0.0484 0.0585 0.1751 0.6105
1  6 0.0060 0.0000 0.0000 0.0000 0.0000 0.0007 0.0071 0.0196 0.0291 0.0461 0.0510 0.0589 0.1744 0.6070
1  7 0.0064 0.0000 0.0000 0.0000 0.0008 0.0000 0.0122 0.0174 0.0295 0.0515 0.0479 0.0597 0.1736 0.6009
1  8 0.0064 0.0000 0.0000 0.0000 0.0008 0.0000 0.0122 0.0173 0.0294 0.0535 0.0447 0.0600 0.1749 0.6010
1  9 0.0060 0.0000 0.0000 0.0000 0.0000 0.0007 0.0095 0.0172 0.0290 0.0450 0.0500 0.0594 0.1764 0.6067
1 10 0.0059 0.0000 0.0000 0.0000 0.0000 0.0007 0.0092 0.0167 0.0282 0.0443 0.0487 0.0593 0.1778 0.6092
1 11 0.0057 0.0000 0.0000 0.0000 0.0007 0.0000 0.0108 0.0153 0.0261 0.0482 0.0424 0.0615 0.1858 0.6036
1 12 0.0054 0.0000 0.0000 0.0000 0.0007 0.0000 0.0102 0.0145 0.0246 0.0496 0.0400 0.0602 0.1852 0.6095
1 13 0.0000 0.0052 0.0000 0.0000 0.0000 0.0000 0.0047 0.0188 0.0249 0.0397 0.0478 0.0578 0.1796 0.6214
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0053 0.0006 0.0229 0.0263 0.0379 0.0502 0.0584 0.1803 0.6180
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0247 0.0333 0.0364 0.0525 0.0594 0.1812 0.6127
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0237 0.0319 0.0361 0.0503 0.0591 0.1826 0.6163
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0214 0.0289 0.0346 0.0459 0.0587 0.1870 0.6234
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0190 0.0255 0.0331 0.0405 0.0584 0.1918 0.6318
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0195 0.0261 0.0357 0.0421 0.0575 0.1875 0.6315
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0205 0.0276 0.0375 0.0448 0.0573 0.1839 0.6285
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0214 0.0288 0.0379 0.0465 0.0575 0.1824 0.6256
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0242 0.0326 0.0393 0.0525 0.0580 0.1775 0.6159
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0254 0.0342 0.0391 0.0549 0.0585 0.1764 0.6114
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0323 0.0295 0.0398 0.0571 0.0586 0.1744 0.6083
2  1 0.0000 0.0000 0.0000 0.1120 0.1106 0.1128 0.2411 0.1801 0.2150 0.0283 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1200 0.1265 0.1351 0.2175 0.1662 0.2073 0.0275 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0023 0.0021 0.1299 0.1238 0.1504 0.2073 0.1546 0.2008 0.0289 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0026 0.1266 0.1284 0.1293 0.2077 0.1753 0.2002 0.0300 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0024 0.1170 0.1230 0.1168 0.2200 0.1815 0.2085 0.0307 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.1136 0.1149 0.1132 0.2227 0.1869 0.2170 0.0316 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0025 0.1155 0.1226 0.1149 0.2160 0.1874 0.2090 0.0319 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0028 0.1204 0.1198 0.1134 0.2163 0.1907 0.2046 0.0320 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.1167 0.1183 0.1101 0.2230 0.1888 0.2113 0.0318 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.1221 0.1252 0.1118 0.2182 0.1850 0.2064 0.0313 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0028 0.1163 0.1256 0.1145 0.2168 0.1858 0.2067 0.0316 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0029 0.1098 0.1164 0.1141 0.2211 0.1909 0.2125 0.0323 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.1129 0.1080 0.1087 0.2337 0.1894 0.2161 0.0312 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.1106 0.1085 0.1006 0.2426 0.1932 0.2143 0.0302 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.1139 0.1111 0.0913 0.2455 0.1952 0.2124 0.0306 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.1129 0.1100 0.0892 0.2449 0.1977 0.2141 0.0311 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.1144 0.1115 0.0906 0.2447 0.1945 0.2136 0.0306 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.1228 0.1189 0.0878 0.2444 0.1900 0.2061 0.0300 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.1120 0.1087 0.0836 0.2418 0.2008 0.2211 0.0320 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.1140 0.1109 0.0881 0.2425 0.1947 0.2188 0.0310 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.1328 0.1288 0.0955 0.2455 0.1736 0.1963 0.0275 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.1174 0.1148 0.0985 0.2462 0.1846 0.2096 0.0290 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.1165 0.1142 0.1001 0.2468 0.1843 0.2093 0.0289 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1123 0.1101 0.1004 0.2437 0.1893 0.2145 0.0297 0.0000 0.0000 0.0000 0.0000
```

2005 VMT by Facility (KYFVMT.D)

```
VMT BY FACILITY
    1 0.467 0.332 0.154 0.047
      0.490 0.313 0.154 0.044
      0.498 0.313 0.144 0.045
      0.474 0.328 0.149 0.048
      0.458 0.342 0.150 0.051
      0.455 0.349 0.144 0.052
      0.441 0.357 0.148 0.054
      0.443 0.356 0.147 0.054
      0.457 0.346 0.144 0.052
      0.461 0.340 0.148 0.051
```

```
      0.474 0.334 0.141 0.050
      0.497 0.325 0.129 0.049
      0.497 0.321 0.134 0.047
      0.482 0.328 0.142 0.048
      0.471 0.335 0.145 0.049
      0.486 0.327 0.139 0.048
      0.510 0.309 0.135 0.046
      0.539 0.286 0.133 0.042
      0.547 0.290 0.119 0.044
      0.525 0.301 0.129 0.045
      0.482 0.310 0.164 0.043
      0.462 0.334 0.156 0.048
      0.448 0.343 0.160 0.049
      0.444 0.350 0.155 0.051
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
```

2005 MOBILE6.2 Input File (KYSCN.IN)

```
* Mobile6 file for Boone, Campbell and Kenton counties
* pre 2006 analysis years, includes annual scenario
* created 10/12/05,AJR

************************ Header Section *****************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : KY.RPT
DATABASE OUTPUT    :
```

```
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111
DAILY OUTPUT       :
EMISSIONS TABLE    : kyemiss.tb1
RUN DATA
************************ Run Section ******************
> post 1999, KY counties of Boone, Campbell and Kenton
*REG DIST           : KYREG.D
VMT BY HOUR        : KYHVMT.D
SPEED VMT          : KYSVMT.D
VMT BY FACILITY    : KYFVMT.D
EXPRESS HC AS VOC  :
I/M PROGRAM        : 1 1999 2005 2 T/O IDLE
I/M MODEL YEARS    : 1 1968 2005
I/M VEHICLES       : 1 22222 22211111 1
I/M STRINGENCY     : 1 20.0
I/M COMPLIANCE     : 1 99.0
I/M WAIVER RATES   : 1 18.0 10.0
I/M PROGRAM        : 2 1999 2005 2 T/O FP & GC
I/M MODEL YEARS    : 2 1981 2005
I/M VEHICLES       : 2 22222 11111111 1
I/M STRINGENCY     : 2 20.0
I/M COMPLIANCE     : 2 99.0
I/M WAIVER RATES   : 2 18.0 10.0
ANTI-TAMP PROGR    :
99 75 50 22222 22211111 1 12 099. 22222222
STAGE II REFUELING :
99 2 86. 86.
EXPAND BUS EFS     :
********************* Summer Scenario Section ***************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2005
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 66.0 89.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 323
********************* Annual Scenario Section ****************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2005
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 47.0 64.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 324
********************************** END OF RUN ****************
END OF RUN
```

2005 MOBILE6.2 Output Report (KY.RPT)

```
*******************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                  *
* Input file: KYSCN.IN (file 2, run 1).                                       *
*******************************************************************************
* post 1999, KY counties of Boone, Campbell and Kenton

* Reading Hourly VMT distribution from the following external
* data file: KYHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: KYSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: KYFVMT.D

  Reading User Supplied ROADWAY VMT Factors
  M601 Comment:
               User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

                    Calendar Year:  2005
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  66.0 (F)
               Maximum Temperature:  89.0 (F)
                 Absolute Humidity:   75. grains/lb
               Fuel Sulfur Content:   90. ppm

               Exhaust I/M Program:  Yes
                  Evap I/M Program:  Yes
                       ATP Program:  Yes
                 Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:                <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.4158    0.3387    0.1165              0.0360    0.0006    0.0019    0.0849    0.0057
1.0000
  -------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      0.871     0.901     1.428     1.035     1.244    0.575     0.796     0.536      2.19
0.938
     Composite CO  :     10.18     11.84     15.33     12.73     14.37     1.611     1.408     3.205     15.87
10.912
     Composite NOX :      0.920     1.099     1.415     1.180     4.396    1.537     1.599    13.396      1.31
2.226
  -------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0003    0.0009    0.0016
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     6.036     0.578     0.727
     Composite CO  :    98.01      4.483     2.790
     Composite NOX :     8.754    16.461    14.355
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 2.
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2005
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  47.0 (F)
              Maximum Temperature:  64.0 (F)
                Absolute Humidity:   75. grains/lb
              Fuel Sulfur Content:   90. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All
Veh
               GVWR:                <6000     >6000     (All)
                          ------    ------    ------    ------    ------    ------    ------    ------    ------    -----
-
   VMT Distribution:    0.4158    0.3387    0.1165              0.0360    0.0006    0.0019    0.0849    0.0057
1.0000
  ---------------------------------------------------------------------------------------------------------------------------
-
 Composite Emission Factors (g/mi):
     Composite VOC :      0.864     0.941     1.520     1.089     1.154    0.575     0.796     0.536      2.08
0.956
     Composite CO  :     13.44     16.12     19.94     17.10     14.60     1.611     1.408     3.205     14.58
14.257
     Composite NOX :      0.931     1.166     1.506     1.253     4.517    1.537     1.599    13.396      1.52
2.269
  ---------------------------------------------------------------------------------------------------------------------------
-
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0003    0.0009    0.0016
---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     5.574     0.578     0.727
     Composite CO  :    90.66      4.483     2.790
     Composite NOX :     9.196    16.461    14.355
---------------------------------------------------------------------------------------------------------------------------
```

2008 VMT by Speed bin (KYSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0014 0.0034 0.0213 0.0225 0.0599 0.0156 0.0469 0.0285 0.8004
1  2 0.0000 0.0010 0.0033 0.0003 0.0004 0.0027 0.0040 0.0175 0.0153 0.0639 0.0092 0.0770 0.0609 0.7445
1  3 0.0000 0.0036 0.0005 0.0011 0.0020 0.0033 0.0057 0.0347 0.0215 0.0679 0.0706 0.0701 0.0428 0.6760
1  4 0.0000 0.0000 0.0000 0.0014 0.0018 0.0055 0.0078 0.0148 0.0197 0.0670 0.0053 0.0765 0.0620 0.7384
1  5 0.0000 0.0000 0.0000 0.0000 0.0006 0.0037 0.0064 0.0192 0.0222 0.0702 0.0066 0.0462 0.0288 0.7960
1  6 0.0000 0.0000 0.0000 0.0000 0.0006 0.0035 0.0060 0.0208 0.0231 0.0677 0.0099 0.0460 0.0288 0.7936
1  7 0.0000 0.0000 0.0000 0.0007 0.0012 0.0038 0.0085 0.0180 0.0244 0.0727 0.0063 0.0456 0.0288 0.7900
1  8 0.0000 0.0000 0.0000 0.0007 0.0011 0.0038 0.0089 0.0175 0.0243 0.0720 0.0063 0.0455 0.0290 0.7910
1  9 0.0000 0.0000 0.0000 0.0000 0.0006 0.0038 0.0057 0.0199 0.0202 0.0729 0.0068 0.0458 0.0291 0.7951
1 10 0.0000 0.0000 0.0000 0.0000 0.0006 0.0037 0.0053 0.0197 0.0196 0.0719 0.0066 0.0458 0.0293 0.7974
1 11 0.0000 0.0000 0.0000 0.0006 0.0010 0.0035 0.0071 0.0166 0.0213 0.0687 0.0055 0.0519 0.0526 0.7711
1 12 0.0000 0.0000 0.0000 0.0006 0.0010 0.0034 0.0067 0.0158 0.0194 0.0695 0.0052 0.0766 0.0465 0.7553
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0020 0.0044 0.0190 0.0181 0.0648 0.0108 0.0465 0.0491 0.7853
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0006 0.0232 0.0190 0.0575 0.0188 0.0462 0.0295 0.8037
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0249 0.0201 0.0570 0.0195 0.0457 0.0298 0.8016
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0240 0.0192 0.0564 0.0186 0.0458 0.0299 0.8045
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0221 0.0173 0.0546 0.0171 0.0459 0.0305 0.8110
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0200 0.0152 0.0527 0.0149 0.0460 0.0311 0.8186
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0204 0.0156 0.0545 0.0159 0.0464 0.0304 0.8153
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0213 0.0165 0.0560 0.0172 0.0465 0.0298 0.8111
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0015 0.0000 0.0220 0.0172 0.0567 0.0177 0.0465 0.0297 0.8087
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0014 0.0000 0.0244 0.0197 0.0586 0.0201 0.0463 0.0291 0.8003
```

```
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0014 0.0000 0.0255 0.0207 0.0590 0.0210 0.0461 0.0290 0.7973
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0014 0.0000 0.0263 0.0215 0.0598 0.0219 0.0461 0.0287 0.7942
2  1 0.0000 0.0000 0.0000 0.1888 0.0882 0.0726 0.2034 0.1932 0.2201 0.0338 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.1976 0.1003 0.0869 0.1939 0.1737 0.2146 0.0330 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0001 0.0007 0.2011 0.1046 0.0965 0.1906 0.1654 0.2085 0.0325 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0001 0.0002 0.2043 0.1007 0.0869 0.1903 0.1806 0.2031 0.0338 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0001 0.1975 0.0969 0.0737 0.1908 0.1986 0.2084 0.0341 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0001 0.1896 0.0890 0.0733 0.1934 0.2034 0.2162 0.0350 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0001 0.0001 0.1949 0.0958 0.0755 0.1919 0.1997 0.2074 0.0349 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0001 0.0002 0.1948 0.0963 0.0766 0.1916 0.1989 0.2067 0.0347 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0001 0.1943 0.0916 0.0719 0.1920 0.2034 0.2121 0.0346 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0001 0.2017 0.0989 0.0691 0.1892 0.2000 0.2070 0.0340 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0001 0.0000 0.1963 0.0965 0.0760 0.1940 0.1974 0.2055 0.0342 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0001 0.0003 0.1862 0.0881 0.0800 0.1976 0.2013 0.2116 0.0348 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.1893 0.0886 0.0691 0.2003 0.2015 0.2174 0.0338 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.1891 0.0883 0.0638 0.2032 0.2055 0.2168 0.0333 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.1940 0.0906 0.0600 0.2008 0.2076 0.2137 0.0333 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.1927 0.0900 0.0588 0.2001 0.2097 0.2151 0.0337 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.1942 0.0907 0.0593 0.2001 0.2068 0.2151 0.0338 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2053 0.0958 0.0570 0.1973 0.2042 0.2074 0.0330 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.1904 0.0889 0.0549 0.1973 0.2110 0.2218 0.0358 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.1924 0.0898 0.0575 0.1986 0.2058 0.2204 0.0354 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2170 0.1013 0.0608 0.1982 0.1914 0.1994 0.0318 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.1973 0.0921 0.0639 0.2025 0.1985 0.2126 0.0331 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.1963 0.0917 0.0650 0.2034 0.1983 0.2125 0.0328 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1907 0.0890 0.0641 0.2035 0.2017 0.2173 0.0337 0.0000 0.0000 0.0000 0.0000
```

2008 VMT by Facility Type (KYFVMT.D)

```
VMT BY FACILITY
    1 0.462 0.337 0.170 0.030
      0.482 0.321 0.170 0.028
      0.494 0.317 0.161 0.029
      0.469 0.330 0.170 0.031
      0.454 0.341 0.173 0.032
      0.455 0.345 0.166 0.034
      0.440 0.353 0.172 0.035
      0.443 0.351 0.172 0.034
      0.457 0.342 0.168 0.033
      0.458 0.337 0.173 0.032
      0.473 0.331 0.164 0.032
      0.499 0.320 0.149 0.032
      0.498 0.318 0.154 0.030
      0.481 0.327 0.161 0.030
      0.469 0.333 0.167 0.031
      0.485 0.324 0.160 0.031
      0.508 0.308 0.155 0.029
      0.533 0.287 0.153 0.027
      0.546 0.288 0.138 0.028
      0.521 0.301 0.148 0.029
      0.469 0.318 0.186 0.027
      0.457 0.337 0.176 0.030
      0.443 0.346 0.180 0.031
      0.442 0.351 0.175 0.032
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
```

```
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.215 0.733 0.032 0.019
0.215 0.733 0.032 0.019
0.215 0.733 0.032 0.019
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
0.029 0.927 0.037 0.007
```

2008 MOBILE6.2 Input File (KYSCN.IN)

```
* Mobile6 file for Boone, Campbell and Kenton counties
* post 2005 analysis years, includes annual scenario
* created 4/9/07,AJR, post 2005
************************ Header Section *****************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : KY.RPT
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : kyemiss.tb1
RUN DATA
************************ Run Section *******************
VMT BY HOUR        : KYHVMT.D
SPEED VMT          : KYSVMT.D
VMT BY FACILITY    : KYFVMT.D
STAGE II REFUELING :
99 2 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.30
********************** Summer Scenario Section ***************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 61.0 95.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
```

```
********** Annual Scenario Section **********
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 47.0 64.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
********** END OF RUN **********
END OF RUN
```

2008 MOBILE6.2 Output Report (KY.RPT)

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: KYSCN.IN (file 2, run 1).                                *
************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: KYHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: KYSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: KYFVMT.D

  Reading User Supplied ROADWAY VMT Factors
  M601 Comment:
              User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.30.
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2008
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  61.0 (F)
              Maximum Temperature:  95.0 (F)
                Absolute Humidity:   75. grains/lb
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3728    0.3705    0.1273              0.0359    0.0004    0.0019    0.0857    0.0055    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.765     0.795     1.288     0.921     1.044    0.291     0.556     0.456      2.32     0.834
    Composite CO  :      9.18     10.54     14.15     11.47     12.43    1.153     0.977     2.537     18.01     9.895
    Composite NOX :      0.695     0.874     1.254     0.971     3.039    0.825     1.132    10.682      1.30     1.776
 -------------------------------------------------------------------------------------------------------------------------
        Veh. Type:    GasBUS     URBAN    SCHOOL
                      ------    ------    ------
          VMT Mix:    0.0002    0.0009    0.0017
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :     5.712     0.383     0.654
    Composite CO  :    87.14      3.588     2.539
```

```
     Composite NOX :     7.927    14.073    12.793
------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2008
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  47.0 (F)
                Maximum Temperature:  64.0 (F)
                  Absolute Humidity:   75. grains/lb
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                  Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3728    0.3705    0.1273              0.0359    0.0004    0.0019    0.0857    0.0055    1.0000
 -----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.734     0.799     1.302     0.928     0.923     0.291     0.556     0.456      2.11     0.821
     Composite CO  :      11.88     14.19     18.70     15.34     12.85     1.153     0.977     2.537     15.32     12.832
     Composite NOX :      0.687     0.914     1.318     1.017     3.135     0.825     1.132     10.682     1.53     1.801
  ----------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0002    0.0009    0.0017
------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     4.970     0.383     0.654
     Composite CO  :    80.26      3.588     2.539
     Composite NOX :     8.913    14.073    12.793
------------------------------------------------------------------------------------------------------------------------
```

2015 VMT by Speed Bin (KYSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0005 0.0000 0.0000 0.0000 0.0000 0.0010 0.0181 0.0280 0.0690 0.0389 0.0448 0.1520 0.6475
1  2 0.0005 0.0000 0.0033 0.0000 0.0006 0.0005 0.0068 0.0259 0.0336 0.0733 0.0566 0.0927 0.0599 0.6463
1  3 0.0005 0.0002 0.0083 0.0247 0.0007 0.0070 0.0320 0.0356 0.0194 0.1146 0.0389 0.0565 0.0235 0.6380
1  4 0.0006 0.0000 0.0002 0.0007 0.0011 0.0014 0.0159 0.0325 0.0247 0.0783 0.0606 0.0898 0.0605 0.6336
1  5 0.0006 0.0000 0.0000 0.0002 0.0008 0.0007 0.0081 0.0155 0.0232 0.0821 0.0384 0.0687 0.1246 0.6369
1  6 0.0006 0.0000 0.0000 0.0000 0.0008 0.0004 0.0089 0.0154 0.0247 0.0833 0.0347 0.0735 0.1242 0.6334
1  7 0.0007 0.0000 0.0000 0.0012 0.0000 0.0022 0.0088 0.0166 0.0243 0.0877 0.0340 0.0735 0.1237 0.6272
1  8 0.0007 0.0000 0.0003 0.0009 0.0004 0.0024 0.0082 0.0169 0.0239 0.0869 0.0335 0.0740 0.1246 0.6273
1  9 0.0006 0.0000 0.0000 0.0000 0.0011 0.0002 0.0087 0.0155 0.0246 0.0815 0.0346 0.0743 0.1257 0.6332
1 10 0.0006 0.0000 0.0000 0.0000 0.0011 0.0007 0.0079 0.0150 0.0239 0.0799 0.0385 0.0698 0.1267 0.6357
1 11 0.0006 0.0000 0.0000 0.0010 0.0000 0.0020 0.0078 0.0147 0.0264 0.1042 0.0300 0.0906 0.0837 0.6390
1 12 0.0006 0.0000 0.0000 0.0010 0.0000 0.0018 0.0074 0.0187 0.0438 0.0803 0.0565 0.0693 0.0857 0.6349
1 13 0.0005 0.0000 0.0000 0.0000 0.0000 0.0007 0.0055 0.0138 0.0230 0.0681 0.0665 0.0507 0.1231 0.6480
1 14 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0005 0.0187 0.0246 0.0656 0.0416 0.0463 0.1572 0.6448
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0202 0.0259 0.0654 0.0435 0.0468 0.1581 0.6395
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0194 0.0254 0.0640 0.0417 0.0470 0.1594 0.6432
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0176 0.0230 0.0599 0.0381 0.0475 0.1633 0.6507
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0155 0.0204 0.0556 0.0336 0.0481 0.1675 0.6594
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0159 0.0208 0.0587 0.0349 0.0471 0.1636 0.6589
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0168 0.0220 0.0616 0.0371 0.0465 0.1604 0.6557
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0175 0.0229 0.0631 0.0385 0.0463 0.1590 0.6527
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0198 0.0259 0.0677 0.0434 0.0458 0.1547 0.6426
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0208 0.0272 0.0689 0.0455 0.0458 0.1538 0.6380
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0216 0.0276 0.0706 0.0472 0.0455 0.1520 0.6348
2  1 0.0000 0.0000 0.0000 0.3682 0.0762 0.0569 0.1521 0.1330 0.1717 0.0418 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0000 0.3865 0.0820 0.0769 0.1311 0.1185 0.1651 0.0400 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0001 0.0053 0.3753 0.0895 0.0806 0.1377 0.1062 0.1641 0.0410 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0014 0.3846 0.0847 0.0696 0.1381 0.1146 0.1659 0.0409 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0001 0.3783 0.0803 0.0611 0.1400 0.1283 0.1703 0.0416 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.3632 0.0759 0.0597 0.1433 0.1355 0.1788 0.0436 0.0000 0.0000 0.0000 0.0000
```

```
2  7 0.0000 0.0000 0.0000 0.3704 0.0796 0.0613 0.1406 0.1300 0.1751 0.0430 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.3721 0.0789 0.0610 0.1428 0.1273 0.1752 0.0427 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.3700 0.0774 0.0586 0.1422 0.1345 0.1748 0.0425 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0001 0.3838 0.0804 0.0577 0.1380 0.1302 0.1687 0.0411 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.3743 0.0793 0.0635 0.1393 0.1283 0.1733 0.0419 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.3559 0.0752 0.0640 0.1458 0.1339 0.1815 0.0437 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.3625 0.0738 0.0556 0.1463 0.1418 0.1781 0.0419 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.3637 0.0745 0.0503 0.1517 0.1426 0.1760 0.0411 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.3709 0.0754 0.0458 0.1510 0.1427 0.1736 0.0407 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.3682 0.0747 0.0449 0.1505 0.1448 0.1754 0.0413 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.3720 0.0755 0.0455 0.1503 0.1421 0.1733 0.0414 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.3905 0.0786 0.0439 0.1473 0.1360 0.1644 0.0392 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.3655 0.0738 0.0424 0.1480 0.1473 0.1783 0.0446 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.3706 0.0751 0.0444 0.1488 0.1424 0.1748 0.0439 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.4133 0.0833 0.0469 0.1470 0.1218 0.1514 0.0364 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.3796 0.0775 0.0489 0.1520 0.1343 0.1677 0.0400 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.3778 0.0774 0.0496 0.1529 0.1344 0.1682 0.0397 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.3678 0.0754 0.0490 0.1532 0.1393 0.1738 0.0415 0.0000 0.0000 0.0000 0.0000
```

2015 VMT by Facility Type (KYFVMT.D)

```
VMT BY FACILITY
    1 0.376 0.309 0.285 0.030
      0.395 0.292 0.286 0.028
      0.404 0.295 0.272 0.029
      0.379 0.304 0.286 0.030
      0.364 0.316 0.288 0.032
      0.365 0.325 0.277 0.033
      0.350 0.329 0.287 0.034
      0.352 0.329 0.286 0.034
      0.365 0.321 0.281 0.033
      0.365 0.313 0.290 0.032
      0.380 0.312 0.276 0.032
      0.406 0.309 0.253 0.032
      0.405 0.304 0.260 0.031
      0.390 0.309 0.271 0.031
      0.377 0.312 0.279 0.031
      0.393 0.307 0.270 0.031
      0.415 0.293 0.263 0.029
      0.438 0.271 0.264 0.027
      0.453 0.279 0.239 0.029
      0.430 0.287 0.254 0.029
      0.378 0.283 0.313 0.027
      0.368 0.309 0.293 0.030
      0.355 0.316 0.299 0.031
      0.354 0.324 0.290 0.032
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
```

```
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
0.024 0.925 0.042 0.009
```

2015 MOBILE6.2 Input File (KYSCN.IN)

```
* Mobile6 file for Boone, Campbell and Kenton counties
* post 2005 analysis years, includes annual scenario
* created 4/9/07,AJR, post 2005
************************ Header Section *****************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : KY.RPT
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : kyemiss.tb1
RUN DATA
************************ Run Section *******************
VMT BY HOUR        : KYHVMT.D
SPEED VMT          : KYSVMT.D
VMT BY FACILITY    : KYFVMT.D
STAGE II REFUELING :
99 2 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.30
********************* Summer Scenario Section ***************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 61.0 95.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
********************* Annual Scenario Section ****************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
FUEL PROGRAM       : 2 N
```

```
PARTICLE SIZE       : 2.5
MIN/MAX TEMP        : 47.0 64.0
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR       : 43
************************************ END OF RUN *****************
END OF RUN
```

2015 MOBILE6.2 Output File (KY.RPT)

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: KYSCN.IN (file 2, run 1).                                     *
*****************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: KYHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: KYSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: KYFVMT.D

  Reading User Supplied ROADWAY VMT Factors
  M601 Comment:
              User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.30.
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2015
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  61.0 (F)
              Maximum Temperature:  95.0 (F)
                Absolute Humidity:   75. grains/lb
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.446     0.530     0.927     0.632     0.616     0.110     0.337     0.357      2.42     0.560
     Composite CO  :      6.52      7.37      9.89      8.01      9.07     0.838     0.671     1.014     18.78     7.031
     Composite NOX :      0.377     0.481     0.845     0.574     1.082     0.177     0.486     3.843      1.21     0.819
  ----------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                       ------    ------    ------
             VMT Mix:    0.0001    0.0010    0.0019
-----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.831     0.306     0.543
     Composite CO  :    16.29      1.871     1.597
     Composite NOX :     3.958     6.649     7.289
-----------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2015
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  47.0 (F)
              Maximum Temperature:  64.0 (F)
                Absolute Humidity:   75. grains/lb
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.437     0.532     0.929     0.634     0.558    0.110     0.337     0.357      2.20     0.555
     Composite CO  :      9.30     10.17     13.27     10.96      9.91    0.838     0.671     1.014     15.96     9.561
     Composite NOX :      0.362     0.499     0.880     0.596     1.102    0.177     0.486     3.843      1.42     0.829
  -------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
-------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.643     0.306     0.543
     Composite CO  :    17.81      1.871     1.597
     Composite NOX :     4.030     6.649     7.289
-------------------------------------------------------------------------------------------------------------------
```

2020 VMT by Speed Bin (KYSVMT.D)

```
SPEED VMT
1  1 0.0002 0.0004 0.0000 0.0000 0.0000 0.0000 0.0017 0.0173 0.0276 0.0712 0.0390 0.0446 0.1441 0.6540
1  2 0.0005 0.0000 0.0033 0.0000 0.0009 0.0013 0.0204 0.0242 0.0204 0.0976 0.0425 0.0996 0.0358 0.6535
1  3 0.0005 0.0004 0.0307 0.0019 0.0067 0.0263 0.0190 0.0234 0.0552 0.0868 0.0338 0.0475 0.0480 0.6197
1  4 0.0006 0.0002 0.0013 0.0002 0.0022 0.0062 0.0205 0.0243 0.0216 0.1068 0.0491 0.0905 0.0361 0.6405
1  5 0.0007 0.0000 0.0003 0.0008 0.0008 0.0020 0.0074 0.0147 0.0247 0.0845 0.0450 0.0623 0.1139 0.6431
1  6 0.0007 0.0000 0.0003 0.0002 0.0014 0.0011 0.0083 0.0145 0.0239 0.0883 0.0323 0.0716 0.1178 0.6395
1  7 0.0007 0.0003 0.0003 0.0013 0.0011 0.0027 0.0098 0.0134 0.0248 0.0901 0.0333 0.0717 0.1174 0.6332
1  8 0.0007 0.0003 0.0003 0.0014 0.0015 0.0029 0.0100 0.0135 0.0236 0.0900 0.0459 0.0629 0.1139 0.6333
1  9 0.0007 0.0000 0.0003 0.0002 0.0014 0.0015 0.0079 0.0148 0.0235 0.0865 0.0367 0.0679 0.1193 0.6393
1 10 0.0007 0.0000 0.0003 0.0002 0.0013 0.0020 0.0072 0.0144 0.0228 0.0848 0.0453 0.0634 0.1158 0.6419
1 11 0.0006 0.0002 0.0002 0.0013 0.0008 0.0024 0.0084 0.0121 0.0360 0.0956 0.0344 0.0905 0.0825 0.6348
1 12 0.0006 0.0002 0.0002 0.0012 0.0007 0.0022 0.0126 0.0334 0.0226 0.0850 0.0500 0.1131 0.0362 0.6417
1 13 0.0006 0.0000 0.0000 0.0002 0.0000 0.0016 0.0057 0.0141 0.0205 0.0898 0.0457 0.0723 0.0949 0.6545
1 14 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009 0.0181 0.0244 0.0679 0.0416 0.0461 0.1492 0.6512
1 15 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0198 0.0259 0.0679 0.0435 0.0466 0.1500 0.6457
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0196 0.0248 0.0664 0.0417 0.0467 0.1513 0.6495
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0172 0.0231 0.0621 0.0381 0.0473 0.1550 0.6573
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0152 0.0204 0.0576 0.0336 0.0479 0.1592 0.6662
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0157 0.0209 0.0607 0.0349 0.0469 0.1554 0.6657
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0165 0.0220 0.0636 0.0370 0.0462 0.1522 0.6624
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0172 0.0230 0.0652 0.0384 0.0461 0.1509 0.6593
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0197 0.0258 0.0700 0.0433 0.0455 0.1466 0.6490
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0209 0.0266 0.0713 0.0454 0.0456 0.1458 0.6443
1 24 0.0000 0.0000 0.0000 0.0007 0.0000 0.0000 0.0000 0.0212 0.0276 0.0731 0.0471 0.0453 0.1441 0.6410
2  1 0.0000 0.0000 0.0000 0.4825 0.0614 0.0493 0.1235 0.1068 0.1415 0.0350 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0000 0.0032 0.4979 0.0675 0.0631 0.1076 0.0929 0.1344 0.0333 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0021 0.0032 0.4922 0.0724 0.0735 0.1081 0.0812 0.1329 0.0344 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0000 0.0027 0.4998 0.0712 0.0587 0.1109 0.0913 0.1311 0.0342 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.4950 0.0651 0.0516 0.1137 0.1001 0.1396 0.0349 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0001 0.4783 0.0628 0.0494 0.1182 0.1080 0.1465 0.0369 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.4878 0.0651 0.0522 0.1172 0.1003 0.1412 0.0362 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0001 0.0000 0.4881 0.0651 0.0521 0.1195 0.0978 0.1413 0.0360 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0001 0.4864 0.0639 0.0482 0.1164 0.1056 0.1436 0.0359 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.5004 0.0657 0.0489 0.1114 0.1014 0.1378 0.0344 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.4920 0.0645 0.0530 0.1164 0.0992 0.1396 0.0353 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.4717 0.0633 0.0524 0.1233 0.1047 0.1475 0.0371 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.4774 0.0607 0.0493 0.1191 0.1118 0.1463 0.0354 0.0000 0.0000 0.0000 0.0000
```

```
2 14 0.0000 0.0000 0.0000 0.4784 0.0601 0.0420 0.1250 0.1147 0.1451 0.0347 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.4864 0.0606 0.0378 0.1240 0.1143 0.1426 0.0343 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.4837 0.0601 0.0371 0.1238 0.1161 0.1442 0.0349 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.4876 0.0606 0.0375 0.1234 0.1138 0.1423 0.0348 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.5074 0.0625 0.0359 0.1198 0.1079 0.1338 0.0327 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.4810 0.0594 0.0351 0.1216 0.1183 0.1469 0.0376 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.4862 0.0603 0.0367 0.1222 0.1141 0.1438 0.0369 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.5307 0.0654 0.0378 0.1184 0.0956 0.1220 0.0300 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.4953 0.0620 0.0402 0.1246 0.1071 0.1373 0.0334 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.4933 0.0619 0.0409 0.1255 0.1073 0.1379 0.0332 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.4827 0.0607 0.0405 0.1263 0.1117 0.1431 0.0349 0.0000 0.0000 0.0000 0.0000
```

2020 VMT by Facility Type (KYFVMT.D)

```
VMT BY FACILITY
    1 0.331 0.277 0.366 0.026
      0.347 0.261 0.368 0.024
      0.357 0.265 0.353 0.025
      0.332 0.271 0.370 0.026
      0.319 0.281 0.373 0.027
      0.322 0.290 0.360 0.029
      0.307 0.293 0.371 0.029
      0.308 0.292 0.370 0.029
      0.321 0.286 0.364 0.028
      0.320 0.278 0.375 0.027
      0.335 0.279 0.359 0.028
      0.361 0.279 0.332 0.028
      0.359 0.274 0.340 0.027
      0.344 0.278 0.352 0.027
      0.332 0.279 0.362 0.027
      0.347 0.275 0.351 0.027
      0.367 0.264 0.343 0.026
      0.387 0.244 0.346 0.023
      0.405 0.253 0.316 0.026
      0.382 0.259 0.334 0.026
      0.327 0.249 0.401 0.023
      0.322 0.275 0.377 0.026
      0.310 0.281 0.383 0.026
      0.310 0.288 0.374 0.028
...
Identical distribution for all veh. types with the exception of diesel
transit buses
    2 0.331 0.277 0.366 0.026
      0.347 0.261 0.368 0.024
      0.357 0.265 0.353 0.025
      0.332 0.271 0.370 0.026
      0.319 0.281 0.373 0.027
      0.322 0.290 0.360 0.029
      0.307 0.293 0.371 0.029
      0.308 0.292 0.370 0.029
      0.321 0.286 0.364 0.028
      0.320 0.278 0.375 0.027
      0.335 0.279 0.359 0.028
      0.361 0.279 0.332 0.028
      0.359 0.274 0.340 0.027
      0.344 0.278 0.352 0.027
      0.332 0.279 0.362 0.027
      0.347 0.275 0.351 0.027
```

```
0.367 0.264 0.343 0.026
0.387 0.244 0.346 0.023
0.405 0.253 0.316 0.026
0.382 0.259 0.334 0.026
0.327 0.249 0.401 0.023
0.322 0.275 0.377 0.026
0.310 0.281 0.383 0.026
0.310 0.288 0.374 0.028
```

2020 MOBILE6.2 Input File (KYSCN.IN)

```
* Mobile6 file for Boone, Campbell and Kenton counties
* post 2005 analysis years, includes annual scenario
* created 4/9/07,AJR, post 2005
************************ Header Section *****************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : KY.RPT
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : kyemiss.tb1
RUN DATA
************************ Run Section *******************
VMT BY HOUR        : KYHVMT.D
SPEED VMT          : KYSVMT.D
VMT BY FACILITY    : KYFVMT.D
STAGE II REFUELING :
99 2 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.30
********************* Summer Scenario Section ***************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 61.0 95.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
********************* Annual Scenario Section ****************
SCENARIO RECORD    : KY EMISSIONS - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
FUEL PROGRAM       : 2 N
PARTICLE SIZE      : 2.5
MIN/MAX TEMP       : 47.0 64.0
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
```

```
DIESEL SULFUR      : 43
************************************ END OF RUN *****************
END OF RUN
```

2020 MOBILE6.2 Output File (KY.RPT)

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: KYSCN.IN (file 2, run 1).                                     *
*****************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: KYHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: KYSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: KYFVMT.D

  Reading User Supplied ROADWAY VMT Factors
  M601 Comment:
               User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.30.
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  61.0 (F)
                Maximum Temperature:  95.0 (F)
                  Absolute Humidity:   75. grains/lb
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                  Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.357     0.448     0.715     0.516     0.461    0.076     0.245     0.344      2.51     0.464
    Composite CO  :      5.89      6.65      8.60      7.15      9.61     0.789     0.570     0.645     19.77     6.366
    Composite NOX :      0.277     0.377     0.663     0.450     0.567    0.072     0.303     1.954      1.17     0.541
 ---------------------------------------------------------------------------------------------------------------------
        Veh. Type:    GasBUS     URBAN    SCHOOL
                      ------    ------    ------
          VMT Mix:    0.0001    0.0010    0.0019
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :     0.989     0.308     0.497
    Composite CO  :    17.32      0.930     1.177
    Composite NOX :     2.073     2.990     4.807
---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* KY EMISSIONS - CY20xx
* File 2, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV
```

```
* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12
  M111 Warning:
                The input dIesel sulfur level of  43.0 ppm exceeds
                the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                     Calendar Year:  2020
                             Month:  July
                          Altitude:  Low
                Minimum Temperature:  47.0 (F)
                Maximum Temperature:  64.0 (F)
                  Absolute Humidity:   75. grains/lb
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                         ATP Program:  No
                   Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
               GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.353     0.452     0.728     0.523     0.425    0.076     0.245     0.344      2.29     0.465
    Composite CO  :      8.64      9.11     11.43      9.70     10.51    0.789     0.570     0.645     16.77     8.658
    Composite NOX :      0.258     0.385     0.683     0.461     0.577    0.072     0.303     1.954      1.37     0.544
 -------------------------------------------------------------------------------------------------------------------------
         Veh. Type:    GasBUS     URBAN    SCHOOL
                       ------    ------    ------
           VMT Mix:    0.0001    0.0010    0.0019
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :     0.925     0.308     0.497
    Composite CO  :    18.93      0.930     1.177
    Composite NOX :     2.110     2.990     4.807
-------------------------------------------------------------------------------------------------------------------------
```

APPENDIX C

MOBILE6.2 Input/Output Files for the OKI's Ohio Portion of Nonattainment Area

VMT By Hour (OHHVMT.D), all analysis years

```
VMT BY HOUR
  0.0478  0.0719  0.0796  0.0666  0.0563  0.0532
  0.0545  0.0543  0.0515  0.0523  0.0560  0.0565
  0.0504  0.0377  0.0266  0.0209  0.0197  0.0171
  0.0142  0.0156  0.0188  0.0224  0.0251  0.0310
```

2005 VMT by Speed Bin (OHSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0245 0.0260 0.0457 0.0369 0.0977 0.0216 0.7471
1  2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0078 0.0159 0.0228 0.0486 0.0272 0.0987 0.0226 0.7556
1  3 0.0000 0.0000 0.0004 0.0005 0.0032 0.0028 0.0114 0.0156 0.0236 0.0401 0.0477 0.1113 0.0925 0.6510
1  4 0.0000 0.0000 0.0000 0.0004 0.0011 0.0036 0.0104 0.0160 0.0278 0.0461 0.0267 0.0984 0.0262 0.7431
1  5 0.0000 0.0000 0.0000 0.0000 0.0002 0.0014 0.0114 0.0169 0.0305 0.0519 0.0281 0.0984 0.0207 0.7404
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0011 0.0106 0.0192 0.0294 0.0551 0.0293 0.0981 0.0206 0.7365
1  7 0.0000 0.0000 0.0000 0.0002 0.0005 0.0039 0.0117 0.0176 0.0328 0.0552 0.0288 0.0979 0.0205 0.7308
1  8 0.0000 0.0000 0.0000 0.0002 0.0009 0.0039 0.0124 0.0173 0.0320 0.0538 0.0285 0.0980 0.0205 0.7323
1  9 0.0000 0.0000 0.0000 0.0000 0.0002 0.0011 0.0119 0.0175 0.0303 0.0524 0.0287 0.0983 0.0207 0.7389
1 10 0.0000 0.0000 0.0000 0.0000 0.0002 0.0011 0.0116 0.0170 0.0299 0.0505 0.0281 0.0985 0.0208 0.7425
1 11 0.0000 0.0000 0.0000 0.0002 0.0004 0.0034 0.0103 0.0154 0.0288 0.0487 0.0264 0.0991 0.0208 0.7465
1 12 0.0000 0.0000 0.0000 0.0002 0.0004 0.0034 0.0098 0.0146 0.0277 0.0463 0.0255 0.0994 0.0225 0.7501
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0059 0.0199 0.0247 0.0465 0.0272 0.0991 0.0215 0.7551
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0251 0.0260 0.0408 0.0355 0.0982 0.0218 0.7525
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0257 0.0278 0.0411 0.0370 0.0980 0.0217 0.7487
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0246 0.0267 0.0395 0.0359 0.0982 0.0218 0.7533
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0221 0.0239 0.0371 0.0336 0.0984 0.0221 0.7628
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0194 0.0210 0.0331 0.0306 0.0988 0.0225 0.7745
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0201 0.0217 0.0356 0.0318 0.0986 0.0223 0.7700
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0213 0.0231 0.0383 0.0334 0.0983 0.0221 0.7636
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0223 0.0241 0.0391 0.0342 0.0983 0.0220 0.7600
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0254 0.0275 0.0433 0.0375 0.0978 0.0216 0.7469
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0266 0.0289 0.0448 0.0387 0.0977 0.0214 0.7419
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0277 0.0300 0.0465 0.0399 0.0975 0.0213 0.7371
2  1 0.0000 0.0000 0.0000 0.1578 0.0620 0.0730 0.2765 0.1939 0.2275 0.0093 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0001 0.0003 0.1663 0.0714 0.1040 0.2602 0.1730 0.2158 0.0090 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0003 0.0015 0.1669 0.0822 0.1318 0.2418 0.1612 0.2066 0.0078 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0001 0.0007 0.1686 0.0757 0.1149 0.2628 0.1640 0.2046 0.0087 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0000 0.1644 0.0669 0.0913 0.2843 0.1791 0.2046 0.0092 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.1562 0.0624 0.0792 0.2941 0.1881 0.2104 0.0096 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0000 0.1608 0.0669 0.0953 0.2868 0.1795 0.2012 0.0095 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0000 0.1612 0.0679 0.0984 0.2857 0.1780 0.1997 0.0089 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0001 0.1606 0.0644 0.0840 0.2924 0.1866 0.2027 0.0094 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0000 0.1679 0.0681 0.0894 0.2873 0.1807 0.1974 0.0091 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0000 0.1627 0.0679 0.0981 0.2850 0.1779 0.1989 0.0093 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0001 0.1531 0.0636 0.0912 0.2932 0.1845 0.2046 0.0096 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.1567 0.0616 0.0752 0.2945 0.1960 0.2068 0.0092 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.1572 0.0614 0.0694 0.2877 0.2041 0.2111 0.0091 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.1613 0.0628 0.0682 0.2897 0.2043 0.2046 0.0090 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.1598 0.0622 0.0672 0.2905 0.2064 0.2047 0.0091 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.1614 0.0628 0.0678 0.2880 0.2032 0.2075 0.0092 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.1722 0.0668 0.0686 0.2881 0.1972 0.1983 0.0088 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.1568 0.0609 0.0645 0.2871 0.2074 0.2135 0.0099 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.1593 0.0619 0.0662 0.2840 0.2024 0.2165 0.0098 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.1847 0.0717 0.0727 0.2813 0.1822 0.1991 0.0083 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.1653 0.0645 0.0708 0.2833 0.1952 0.2120 0.0089 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.1645 0.0642 0.0713 0.2837 0.1955 0.2119 0.0089 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.1587 0.0620 0.0697 0.2843 0.2002 0.2159 0.0092 0.0000 0.0000 0.0000 0.0000
```

2005 VMT by Facility (OHFVMT.D)

```
VMT BY FACILITY
    1 0.341 0.451 0.181 0.027
      0.360 0.432 0.184 0.025
      0.372 0.428 0.174 0.026
      0.351 0.440 0.182 0.028
      0.336 0.452 0.183 0.030
      0.335 0.460 0.174 0.031
      0.323 0.466 0.180 0.032
      0.326 0.463 0.179 0.032
      0.339 0.454 0.177 0.031
      0.341 0.446 0.183 0.030
```

```
      0.355 0.441 0.174 0.030
      0.375 0.435 0.160 0.030
      0.376 0.430 0.165 0.029
      0.362 0.438 0.172 0.028
      0.354 0.441 0.176 0.029
      0.368 0.433 0.170 0.029
      0.392 0.415 0.166 0.027
      0.420 0.388 0.167 0.025
      0.425 0.398 0.150 0.027
      0.400 0.413 0.160 0.027
      0.357 0.418 0.200 0.025
      0.340 0.446 0.186 0.028
      0.328 0.454 0.190 0.028
      0.325 0.462 0.184 0.029
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.196 0.753 0.024 0.027
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
      0.038 0.920 0.028 0.014
```

2005 Vehicle Age Distribution File (OHREG.D), all analysis years

```
REG DIST
* OHREG.D
* This file contains the Butler, Clermont, Hamilton and Warren
* vehicle age distribution for LDV,LDT1,LDT2,LDT3,
* and LDT4 vehicles from ODOT/OEPA 2004 VIN decoding project.
* MOBILE6 default distributions are used for the remaining
* vehicle classes.
*
* LDV
 1 0.0286 0.0381 0.0426 0.0379 0.0991 0.1052
   0.0903 0.0968 0.0763 0.0745 0.0590 0.0502
```

```
   0.0414 0.0335 0.0304 0.0232 0.0182 0.0128
   0.0102 0.0066 0.0048 0.0023 0.0013 0.0009 0.0158
* LDT1
 2 0.0278 0.0371 0.0412 0.0210 0.0450 0.0478
   0.0564 0.0525 0.0865 0.0706 0.0922 0.0696
   0.0503 0.0587 0.0469 0.0439 0.0418 0.0360
   0.0280 0.0143 0.0074 0.0038 0.0044 0.0028 0.014
* LDT2
 3 0.0345 0.0460 0.0511 0.0478 0.1204 0.1327
   0.1232 0.1125 0.0802 0.0690 0.0550 0.0412
   0.0269 0.0164 0.0120 0.0080 0.0095 0.0026
   0.0029 0.0016 0.0016 0.0006 0.0005 0.0005 0.0033
* LDT3
 4 0.0287 0.0383 0.0424 0.0398 0.1031 0.1525
   0.0769 0.0740 0.0677 0.0768 0.0578 0.0461
   0.0317 0.0221 0.0252 0.0249 0.0219 0.0136
   0.0124 0.0083 0.0068 0.0030 0.0021 0.0008 0.0231
* LDT4
 5 0.0386 0.0514 0.0569 0.0489 0.1129 0.2054
   0.1223 0.1113 0.0698 0.0629 0.0500 0.0078
   0.0133 0.0043 0.0046 0.0037 0.0039 0.0030
   0.0030 0.0021 0.0018 0.0005 0.0002 0.0000 0.0214
```

2005 MOBILE6.2 Input File (OH.SCN)

```
* Mobile6 file for Butler, Clermont, Hamilton and Warren counties,
* OBD program initiated on 1/5/04
* created 05/30/06 by ajr, new OEPA inputs for ozone, pre 2006
*******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : OH.RPT
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : ohemiss.tb1

RUN DATA
*******************  Run Section  ***************************
VMT BY HOUR        : OHHVMT.D
SPEED VMT          : OHSVMT.D
VMT BY FACILITY    : OHFVMT.D
REG DIST           : OHREG.D
FUEL RVP           : 9.0
EXPRESS HC AS VOC  :
* ANTI-TAMPERING PROGRAM
ANTI-TAMP PROG     :
96 78 50 22222 21111111 1 12 098. 12111112

* I/M PROGRAM(S)
* OBD
I/M PROGRAM        : 1 2004 2005 2 T/O OBD I/M
I/M MODEL YEARS    : 1 1996 2050
```

```
I/M VEHICLES       : 1 22222 21111111 1
I/M STRINGENCY     : 1 30.0
I/M COMPLIANCE     : 1 98.0
I/M WAIVER RATES   : 1 1.0 1.0
I/M EXEMPTION AGE  : 1 25
I/M GRACE PERIOD   : 1 2

* EVAP OBD with no post '07 HDGV
I/M PROGRAM        : 2 2004 2005 2 T/O EVAP OBD & GC
I/M MODEL YEARS    : 2 1996 2007
I/M VEHICLES       : 2 22222 11111111 1
I/M COMPLIANCE     : 2 98.0
I/M WAIVER RATES   : 2 1.0 1.0
I/M EXEMPTION AGE  : 2 25
I/M GRACE PERIOD   : 2 2

* ASM 2525
I/M PROGRAM        : 4 2001 2005 2 T/O ASM 2525 PHASE-IN
I/M MODEL YEARS    : 4 1982 1995
I/M VEHICLES       : 4 22222 21111111 1
I/M STRINGENCY     : 4 30.0
I/M COMPLIANCE     : 4 98.0
I/M WAIVER RATES   : 4 1.0 1.0
I/M EXEMPTION AGE  : 4 25
I/M GRACE PERIOD   : 4 2

* IDLE
I/M PROGRAM        : 5 1998 2000 2 T/O IDLE
I/M MODEL YEARS    : 5 1973 1996
I/M VEHICLES       : 5 22222 21111111 1
I/M STRINGENCY     : 5 30.0
I/M COMPLIANCE     : 5 98.0
I/M WAIVER RATES   : 5 1.0 1.0
I/M EXEMPTION AGE  : 5 25
I/M GRACE PERIOD   : 5 2

* IM 240
I/M PROGRAM        : 6 1996 1997 2 T/O IM240
I/M MODEL YEARS    : 6 1971 1994
I/M VEHICLES       : 6 22222 21111111 1
I/M STRINGENCY     : 6 30.0
I/M COMPLIANCE     : 6 98.0
I/M WAIVER RATES   : 6 1.0 1.0
I/M EXEMPTION AGE  : 6 25
I/M CUTPOINTs      : 6 CUTPOINT.D
I/M GRACE PERIOD   : 6 2

* GC
I/M PROGRAM        : 7 1996 2005 2 T/O GC
I/M MODEL YEARS    : 7 1982 1995
I/M VEHICLES       : 7 22222 21111111 1
I/M COMPLIANCE     : 7 98.0
I/M WAIVER RATES   : 7 1.0 1.0
I/M EXEMPTION AGE  : 7 25
I/M GRACE PERIOD   : 7 2
FUEL PROGRAM       : 1
OXYGENATED FUELS   : .000 .420 .000 .036 2
```

```
STAGE II REFUELING :
93 3 86. 86.
EXPAND BUS EFS     :
********************  Summer Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2005
EVALUATION MONTH   : 7
SEASON             : 1
MIN/MAX TEMP       : 61.0 95.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 317.00
********************  Annual Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2005
EVALUATION MONTH   : 7
MIN/MAX TEMP       : 47.0 64.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 317.00
********************  End of Run  ****************************
END OF RUN
```

2005 MOBILE6.2 Output Report (OH.RPT)

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: OHSCN.IN (file 3, run 1).                                *
************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: OHHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: OHSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: OHFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* Reading Registration Distributions from the following external
* data file: OHREG.D

* Reading ASM I/M Test Credits from ASMDATA.D

* Reading non-default I/M CUTPOINTS from the following external
* data file: CUTPOINT.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.
  M601 Comment:
              User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2005
                         Month:  July
                      Altitude:  Low
             Minimum Temperature:  61.0 (F)
             Maximum Temperature:  95.0 (F)
```

```
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.9 psi
              Fuel Sulfur Content:   92. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4050    0.3396    0.1270              0.0359    0.0006    0.0019    0.0845    0.0057    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.251     1.047     1.216     1.093     1.894    0.644     0.657     0.579      3.53     1.155
     Composite CO  :     12.48     13.44     15.01     13.87     18.13    1.751     1.132     3.410     17.88    12.568
     Composite NOX :      0.915     1.164     1.494     1.254     4.265    1.606     1.480    12.715      1.23     2.194
  ---------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0003    0.0009    0.0016
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     8.840     0.583     0.787
     Composite CO  :   114.81      4.539     2.970
     Composite NOX :     8.411    16.545    13.772
---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2005
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  47.0 (F)
              Maximum Temperature:  64.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   9.5 psi
              Fuel Sulfur Content:   92. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4050    0.3396    0.1270              0.0359    0.0006    0.0019    0.0845    0.0057    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.994     0.913     1.096     0.963     1.414    0.644     0.657     0.579      2.15     0.965
     Composite CO  :     13.81     16.00     17.13     16.31     16.88    1.751     1.132     3.410     15.23    14.185
     Composite NOX :      0.892     1.205     1.546     1.298     4.367    1.606     1.480    12.715      1.45     2.210
  ---------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0003    0.0009    0.0016
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     6.768     0.583     0.787
     Composite CO  :    99.19      4.539     2.970
     Composite NOX :     8.902    16.545    13.772
---------------------------------------------------------------------------------------------------------------------
```

2008 VMT by Speed bin (OHSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0170 0.0245 0.0392 0.0435 0.0977 0.0165 0.7606
1  2 0.0000 0.0000 0.0000 0.0002 0.0000 0.0012 0.0063 0.0104 0.0223 0.0401 0.0340 0.0993 0.0282 0.7579
1  3 0.0000 0.0000 0.0008 0.0019 0.0021 0.0026 0.0075 0.0099 0.0233 0.0378 0.0426 0.1159 0.0909 0.6648
1  4 0.0000 0.0000 0.0000 0.0010 0.0021 0.0028 0.0079 0.0105 0.0250 0.0373 0.0337 0.0979 0.0282 0.7536
1  5 0.0000 0.0000 0.0000 0.0000 0.0006 0.0021 0.0081 0.0127 0.0269 0.0418 0.0349 0.0981 0.0161 0.7588
1  6 0.0000 0.0000 0.0000 0.0000 0.0000 0.0022 0.0082 0.0126 0.0285 0.0434 0.0362 0.0975 0.0165 0.7550
1  7 0.0000 0.0000 0.0000 0.0001 0.0021 0.0024 0.0100 0.0121 0.0307 0.0413 0.0367 0.0979 0.0160 0.7508
```

```
1  8 0.0000 0.0000 0.0000 0.0005 0.0022 0.0024 0.0102 0.0117 0.0310 0.0398 0.0356 0.0976 0.0160 0.7529
1  9 0.0000 0.0000 0.0000 0.0000 0.0003 0.0024 0.0079 0.0129 0.0281 0.0415 0.0342 0.0976 0.0161 0.7589
1 10 0.0000 0.0000 0.0000 0.0000 0.0003 0.0024 0.0079 0.0125 0.0271 0.0405 0.0330 0.0974 0.0162 0.7627
1 11 0.0000 0.0000 0.0000 0.0002 0.0017 0.0022 0.0088 0.0105 0.0269 0.0373 0.0318 0.0979 0.0191 0.7637
1 12 0.0000 0.0000 0.0000 0.0002 0.0017 0.0021 0.0084 0.0099 0.0259 0.0360 0.0300 0.0990 0.0260 0.7608
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0062 0.0120 0.0252 0.0373 0.0299 0.0981 0.0165 0.7746
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0005 0.0170 0.0249 0.0343 0.0378 0.0969 0.0169 0.7717
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0183 0.0260 0.0332 0.0398 0.0963 0.0169 0.7695
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0176 0.0249 0.0322 0.0381 0.0962 0.0170 0.7740
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0158 0.0224 0.0308 0.0358 0.0952 0.0172 0.7827
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0139 0.0197 0.0281 0.0312 0.0946 0.0175 0.7949
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0144 0.0203 0.0302 0.0343 0.0955 0.0173 0.7879
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0153 0.0216 0.0322 0.0375 0.0961 0.0171 0.7802
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0160 0.0225 0.0327 0.0383 0.0964 0.0170 0.7771
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0182 0.0257 0.0353 0.0428 0.0971 0.0167 0.7642
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0191 0.0270 0.0361 0.0443 0.0971 0.0166 0.7598
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0198 0.0280 0.0372 0.0463 0.0974 0.0165 0.7547
2  1 0.0000 0.0000 0.0000 0.2542 0.0514 0.0702 0.2335 0.1911 0.1904 0.0091 0.0000 0.0000 0.0000 0.0000
2  2 0.0001 0.0001 0.0004 0.2669 0.0666 0.1030 0.2050 0.1671 0.1821 0.0088 0.0000 0.0000 0.0000 0.0000
2  3 0.0001 0.0004 0.0029 0.2676 0.0786 0.1230 0.1961 0.1486 0.1736 0.0091 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0001 0.0007 0.2734 0.0676 0.1091 0.2127 0.1617 0.1652 0.0094 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0001 0.2685 0.0580 0.0845 0.2334 0.1818 0.1639 0.0099 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0000 0.2570 0.0536 0.0767 0.2417 0.1915 0.1692 0.0103 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0001 0.2648 0.0578 0.0871 0.2399 0.1785 0.1616 0.0101 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0001 0.2656 0.0588 0.0893 0.2392 0.1771 0.1596 0.0102 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0000 0.2642 0.0561 0.0787 0.2402 0.1894 0.1611 0.0103 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0001 0.2747 0.0590 0.0818 0.2351 0.1837 0.1556 0.0100 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0000 0.0001 0.2673 0.0591 0.0898 0.2373 0.1770 0.1593 0.0100 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0000 0.2537 0.0550 0.0864 0.2455 0.1838 0.1652 0.0104 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2577 0.0527 0.0716 0.2418 0.2005 0.1656 0.0101 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2570 0.0520 0.0636 0.2413 0.2055 0.1706 0.0098 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2642 0.0534 0.0618 0.2415 0.2062 0.1630 0.0099 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2625 0.0531 0.0609 0.2417 0.2090 0.1626 0.0101 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2640 0.0534 0.0613 0.2404 0.2048 0.1662 0.0099 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2796 0.0566 0.0610 0.2394 0.1974 0.1565 0.0096 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2581 0.0522 0.0580 0.2389 0.2104 0.1720 0.0103 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2603 0.0526 0.0596 0.2377 0.2036 0.1762 0.0100 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2941 0.0595 0.0641 0.2359 0.1782 0.1596 0.0086 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2672 0.0540 0.0641 0.2387 0.1940 0.1726 0.0093 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2660 0.0538 0.0648 0.2392 0.1943 0.1726 0.0093 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.2582 0.0522 0.0637 0.2396 0.2003 0.1764 0.0096 0.0000 0.0000 0.0000 0.0000
```

2008 VMT by Facility Type (OHFVMT.D)

```
VMT BY FACILITY
    1 0.322 0.427 0.234 0.017
      0.339 0.409 0.236 0.016
      0.353 0.404 0.226 0.017
      0.332 0.412 0.238 0.018
      0.319 0.422 0.239 0.019
      0.320 0.431 0.229 0.020
      0.308 0.434 0.238 0.020
      0.311 0.431 0.237 0.020
      0.324 0.424 0.233 0.020
      0.325 0.415 0.241 0.019
      0.339 0.412 0.230 0.019
      0.361 0.407 0.213 0.019
      0.360 0.403 0.218 0.018
      0.345 0.411 0.225 0.018
      0.337 0.413 0.232 0.019
      0.352 0.405 0.225 0.019
      0.373 0.391 0.219 0.018
      0.398 0.365 0.220 0.016
      0.407 0.376 0.200 0.017
      0.381 0.390 0.211 0.017
      0.334 0.392 0.259 0.016
      0.321 0.419 0.242 0.018
      0.309 0.426 0.246 0.018
```

```
      0.308 0.434 0.239 0.019
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.215 0.733 0.032 0.019
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
      0.029 0.927 0.037 0.007
```

2008 MOBILE6.2 Input File (OHSCN.IN)

```
* Mobile6 input file for Butler, Clermont, Hamilton and Warren counties,
* low RVP beginning summer 2008
* created 4/9/07 by ajr, includes annual scenario,low RVP,post 2007
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : oh.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : ohemiss.tb1

RUN DATA
******************  Run Section  ***************************
VMT BY HOUR        : OHHVMT.D
SPEED VMT          : OHSVMT.D
VMT BY FACILITY    : OHFVMT.D
REG DIST           : OHREG.D
FUEL PROGRAM       : 1
OXYGENATED FUELS   : .000 .420 .000 .036 2
STAGE II REFUELING :
93 3 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.10
******************  Summer Scenario Section  ***************
```

```
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
SEASON             : 1
MIN/MAX TEMP       : 62.0 91.3
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
DIESEL SULFUR      : 43
********************  Annual Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2008
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
MIN/MAX TEMP       : 47.0 64.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
DIESEL SULFUR      : 43
********************  End of Run  ****************************
END OF RUN
```

2008 MOBILE6.2 Output Report (OH.RPT)

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: OHSCN.IN (file 3, run 1).                                *
************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: OHHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: OHSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: OHFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* Reading Registration Distributions from the following external
* data file: OHREG.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.
  M601 Comment:
              User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2008
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.0 (F)
              Maximum Temperature:  91.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   7.8 psi
                    Weathered RVP:   8.0 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                Reformulated Gas:  No
```

```
   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3623    0.3705    0.1385              0.0357    0.0004    0.0020    0.0851    0.0055    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.923     0.802     1.007     0.858     1.312    0.344     0.566     0.516      2.74     0.878
     Composite CO  :      9.49     10.52     12.46     11.05     14.02    1.351     0.961     2.825     18.05     9.905
     Composite NOX :      0.741     0.965     1.408     1.085     2.929    0.875     1.174    10.042      1.22     1.790
  ------------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0002    0.0009    0.0017
------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     7.094     0.399     0.742
     Composite CO  :    94.69      3.770     2.830
     Composite NOX :     7.696    14.196    12.082
------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
                there are no sales for vehicle class HDGV8b
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2008
                           Month:  July
                        Altitude:  Low
                 Minimum Temperature:  47.0 (F)
                 Maximum Temperature:  64.0 (F)
                   Absolute Humidity:   75. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   9.5 psi
                 Fuel Sulfur Content:   30. ppm

                 Exhaust I/M Program:  No
                    Evap I/M Program:  No
                         ATP Program:  No
                   Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3623    0.3705    0.1385              0.0357    0.0004    0.0020    0.0851    0.0055    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.880     0.817     1.051     0.881     1.177    0.344     0.566     0.516      2.21     0.866
     Composite CO  :     12.77     14.60     16.75     15.18     14.75    1.351     0.961     2.825     16.12    13.214
     Composite NOX :      0.736     1.018     1.487     1.146     2.981    0.875     1.174    10.042      1.42     1.822
  ------------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0002    0.0009    0.0017
------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     6.413     0.399     0.742
     Composite CO  :    91.20      3.770     2.830
     Composite NOX :     8.489    14.196    12.082
------------------------------------------------------------------------------------------------------------------------
```

2015 VMT by Speed Bin (OHSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 0.0166 0.0177 0.0522 0.0350 0.1026 0.0217 0.7531
1  2 0.0000 0.0000 0.0000 0.0000 0.0002 0.0014 0.0060 0.0104 0.0153 0.0512 0.0329 0.0986 0.0326 0.7514
1  3 0.0000 0.0000 0.0005 0.0015 0.0021 0.0023 0.0097 0.0118 0.0280 0.0446 0.0425 0.1089 0.0504 0.6978
1  4 0.0000 0.0000 0.0000 0.0012 0.0010 0.0031 0.0084 0.0118 0.0171 0.0469 0.0333 0.0990 0.0334 0.7449
1  5 0.0000 0.0000 0.0000 0.0000 0.0009 0.0012 0.0074 0.0141 0.0185 0.0523 0.0352 0.0982 0.0227 0.7494
1  6 0.0000 0.0000 0.0000 0.0000 0.0002 0.0016 0.0076 0.0142 0.0199 0.0541 0.0359 0.0982 0.0216 0.7466
1  7 0.0000 0.0000 0.0000 0.0004 0.0013 0.0020 0.0103 0.0146 0.0197 0.0533 0.0363 0.0983 0.0215 0.7422
1  8 0.0000 0.0000 0.0000 0.0004 0.0017 0.0022 0.0104 0.0140 0.0196 0.0521 0.0357 0.0984 0.0216 0.7440
1  9 0.0000 0.0000 0.0000 0.0000 0.0004 0.0014 0.0074 0.0149 0.0191 0.0515 0.0354 0.0983 0.0217 0.7498
1 10 0.0000 0.0000 0.0000 0.0000 0.0004 0.0014 0.0074 0.0143 0.0186 0.0498 0.0347 0.0983 0.0228 0.7523
1 11 0.0000 0.0000 0.0000 0.0004 0.0011 0.0017 0.0090 0.0128 0.0173 0.0465 0.0336 0.0983 0.0230 0.7562
1 12 0.0000 0.0000 0.0000 0.0003 0.0011 0.0021 0.0084 0.0120 0.0165 0.0444 0.0325 0.0995 0.0326 0.7506
```

```
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0007 0.0055 0.0122 0.0174 0.0453 0.0329 0.0985 0.0232 0.7643
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0007 0.0170 0.0178 0.0429 0.0340 0.1035 0.0221 0.7620
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0185 0.0186 0.0430 0.0352 0.1035 0.0221 0.7591
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0177 0.0179 0.0412 0.0341 0.1035 0.0222 0.7633
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0159 0.0160 0.0394 0.0320 0.1032 0.0225 0.7710
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0140 0.0141 0.0346 0.0292 0.1032 0.0229 0.7820
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0144 0.0145 0.0385 0.0303 0.1030 0.0226 0.7766
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0153 0.0154 0.0422 0.0319 0.1029 0.0224 0.7699
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0160 0.0161 0.0428 0.0327 0.1031 0.0223 0.7671
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0183 0.0184 0.0473 0.0357 0.1031 0.0219 0.7553
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0192 0.0193 0.0487 0.0369 0.1032 0.0218 0.7510
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0199 0.0201 0.0508 0.0381 0.1031 0.0216 0.7464
2  1 0.0000 0.0000 0.0000 0.2312 0.0536 0.0672 0.2361 0.1827 0.2125 0.0167 0.0000 0.0000 0.0000 0.0000
2  2 0.0000 0.0003 0.0007 0.2425 0.0638 0.0960 0.2145 0.1665 0.1997 0.0159 0.0000 0.0000 0.0000 0.0000
2  3 0.0000 0.0010 0.0020 0.2432 0.0746 0.1140 0.2082 0.1479 0.1937 0.0153 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0005 0.0006 0.2465 0.0686 0.1025 0.2170 0.1588 0.1885 0.0170 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0000 0.0003 0.2407 0.0592 0.0853 0.2334 0.1750 0.1887 0.0173 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0001 0.2299 0.0541 0.0771 0.2416 0.1843 0.1951 0.0179 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0000 0.0004 0.2363 0.0594 0.0881 0.2359 0.1754 0.1866 0.0179 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0000 0.0004 0.2369 0.0602 0.0901 0.2368 0.1726 0.1850 0.0179 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0002 0.2359 0.0561 0.0798 0.2408 0.1817 0.1876 0.0178 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0000 0.0003 0.2454 0.0596 0.0838 0.2355 0.1760 0.1820 0.0174 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0001 0.0004 0.2388 0.0603 0.0908 0.2336 0.1739 0.1845 0.0176 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0003 0.2263 0.0561 0.0867 0.2408 0.1809 0.1909 0.0181 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2302 0.0536 0.0726 0.2435 0.1904 0.1922 0.0175 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2307 0.0529 0.0627 0.2460 0.1936 0.1970 0.0171 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2364 0.0540 0.0612 0.2468 0.1938 0.1905 0.0171 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2345 0.0536 0.0605 0.2475 0.1959 0.1907 0.0174 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2365 0.0540 0.0609 0.2453 0.1927 0.1933 0.0173 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2508 0.0571 0.0611 0.2438 0.1865 0.1840 0.0167 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2305 0.0525 0.0580 0.2445 0.1969 0.1994 0.0182 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2337 0.0533 0.0595 0.2420 0.1919 0.2018 0.0178 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.2672 0.0608 0.0643 0.2373 0.1717 0.1831 0.0155 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2415 0.0553 0.0634 0.2416 0.1849 0.1968 0.0166 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2404 0.0551 0.0639 0.2421 0.1852 0.1968 0.0165 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.2327 0.0534 0.0627 0.2431 0.1900 0.2010 0.0170 0.0000 0.0000 0.0000 0.0000
```

2015 VMT by Facility Type (OHFVMT.D)

```
VMT BY FACILITY
    1 0.328 0.428 0.225 0.019
      0.346 0.409 0.228 0.018
      0.359 0.406 0.217 0.019
      0.337 0.416 0.227 0.020
      0.323 0.427 0.229 0.021
      0.323 0.436 0.219 0.022
      0.311 0.440 0.227 0.022
      0.314 0.438 0.226 0.022
      0.327 0.430 0.222 0.022
      0.328 0.421 0.230 0.021
      0.342 0.418 0.219 0.021
      0.363 0.414 0.202 0.021
      0.364 0.408 0.208 0.020
      0.350 0.415 0.215 0.020
      0.341 0.418 0.221 0.021
      0.356 0.410 0.214 0.020
      0.378 0.394 0.208 0.019
      0.404 0.368 0.210 0.018
      0.412 0.380 0.190 0.019
      0.386 0.393 0.202 0.019
      0.341 0.393 0.249 0.018
      0.327 0.421 0.232 0.019
      0.315 0.429 0.236 0.020
      0.312 0.438 0.229 0.021
...
Identical distribution for all veh. types with the exception of diesel
transit buses
```

```
   26 0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
```

2015 MOBILE6.2 Input File (OHSCN.IN)

```
* Mobile6 input file for Butler, Clermont, Hamilton and Warren
counties,
* low RVP beginning summer 2008
* created 4/9/07 by ajr, includes annual scenario,low RVP,post 2007
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : oh.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : ohemiss.tb1

RUN DATA
******************  Run Section  ***************************
VMT BY HOUR        : OHHVMT.D
SPEED VMT          : OHSVMT.D
VMT BY FACILITY    : OHFVMT.D
REG DIST           : OHREG.D
FUEL PROGRAM       : 1
OXYGENATED FUELS   : .000 .420 .000 .036 2
STAGE II REFUELING :
93 3 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.10
```

```
********************  Summer Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
SEASON             : 1
MIN/MAX TEMP       : 62.0 91.3
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
********************  Annual Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
MIN/MAX TEMP       : 47.0 64.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV
PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
********************  End of Run  ****************************
END OF RUN
```

2015 MOBILE6.2 Output File (OH.RPT)

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: OHSCN.IN (file 3, run 1).                                     *
*****************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: OHHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: OHSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: OHFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* Reading Registration Distributions from the following external
* data file: OHREG.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.
  M601 Comment:
              User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.
  M111 Warning:
              The input dIesel sulfur level of  43.0 ppm exceeds
              the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                   Calendar Year:  2015
                           Month:  July
                        Altitude:  Low
                 Minimum Temperature:  62.0 (F)
                 Maximum Temperature:  91.3 (F)
                   Absolute Humidity:   75. grains/lb
```

```
                Nominal Fuel RVP:   7.8 psi
                   Weathered RVP:   8.0 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2935    0.4202    0.1571              0.0357    0.0003    0.0023    0.0858    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.491     0.462     0.588     0.496     0.674     0.112     0.213     0.340      2.71     0.498
     Composite CO  :      6.84      7.42      8.25      7.65      8.93     0.820     0.479     0.951     17.80     6.917
     Composite NOX :      0.379     0.455     0.622     0.500     1.098    0.173     0.308     3.792      1.23     0.772
  ---------------------------------------------------------------------------------------------------------------------
           Veh. Type:    GasBUS     URBAN    SCHOOL
                         ------    ------    ------
             VMT Mix:    0.0001    0.0009    0.0019
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     2.023     0.284     0.518
     Composite CO  :    16.22      1.696     1.499
     Composite NOX :     4.015     6.477     7.115
---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  47.0 (F)
              Maximum Temperature:  64.0 (F)
                Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   9.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2935    0.4202    0.1571              0.0357    0.0003    0.0023    0.0858    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.483     0.483     0.616     0.519     0.605     0.112     0.213     0.340      2.18     0.504
     Composite CO  :     10.09     10.46     11.35     10.70      9.79     0.820     0.479     0.951     15.90     9.654
     Composite NOX :      0.373     0.476     0.651     0.523     1.104    0.173     0.308     3.792      1.43     0.784
  ---------------------------------------------------------------------------------------------------------------------
           Veh. Type:    GasBUS     URBAN    SCHOOL
                         ------    ------    ------
             VMT Mix:    0.0001    0.0009    0.0019
---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.794     0.284     0.518
     Composite CO  :    17.78      1.696     1.499
     Composite NOX :     4.036     6.477     7.115
---------------------------------------------------------------------------------------------------------------------
```

2020 VMT by Speed Bin (OHSVMT.D)

```
SPEED VMT
1  1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 0.0164 0.0170 0.0526 0.0353 0.1036 0.0214 0.7526
1  2 0.0000 0.0000 0.0002 0.0001 0.0005 0.0008 0.0062 0.0106 0.0166 0.0490 0.0342 0.0987 0.0469 0.7362
1  3 0.0000 0.0000 0.0010 0.0019 0.0018 0.0038 0.0103 0.0195 0.0277 0.0554 0.0287 0.1103 0.0632 0.6766
1  4 0.0000 0.0000 0.0000 0.0013 0.0016 0.0032 0.0081 0.0121 0.0164 0.0478 0.0326 0.1078 0.0460 0.7230
```

```
1  5 0.0000 0.0000 0.0000 0.0000 0.0009 0.0016 0.0086 0.0128 0.0188 0.0511 0.0352 0.0993 0.0223 0.7493
1  6 0.0000 0.0000 0.0000 0.0000 0.0006 0.0011 0.0085 0.0132 0.0202 0.0530 0.0364 0.0992 0.0213 0.7465
1  7 0.0000 0.0000 0.0000 0.0008 0.0013 0.0031 0.0091 0.0149 0.0190 0.0535 0.0355 0.0994 0.0221 0.7413
1  8 0.0000 0.0000 0.0000 0.0010 0.0014 0.0037 0.0096 0.0140 0.0187 0.0518 0.0350 0.0994 0.0222 0.7431
1  9 0.0000 0.0000 0.0000 0.0000 0.0008 0.0018 0.0085 0.0129 0.0198 0.0501 0.0356 0.0994 0.0224 0.7488
1 10 0.0000 0.0000 0.0000 0.0000 0.0007 0.0017 0.0082 0.0125 0.0192 0.0487 0.0348 0.0994 0.0225 0.7522
1 11 0.0000 0.0000 0.0000 0.0007 0.0011 0.0028 0.0080 0.0131 0.0167 0.0466 0.0330 0.1003 0.0293 0.7485
1 12 0.0000 0.0000 0.0000 0.0007 0.0012 0.0025 0.0078 0.0123 0.0166 0.0437 0.0319 0.1006 0.0406 0.7422
1 13 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0058 0.0117 0.0168 0.0451 0.0332 0.0996 0.0228 0.7642
1 14 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0164 0.0173 0.0435 0.0339 0.1045 0.0218 0.7618
1 15 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0181 0.0181 0.0431 0.0355 0.1045 0.0217 0.7590
1 16 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0173 0.0173 0.0413 0.0344 0.1045 0.0219 0.7632
1 17 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0156 0.0156 0.0395 0.0324 0.1041 0.0222 0.7707
1 18 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0137 0.0137 0.0348 0.0296 0.1042 0.0225 0.7816
1 19 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0141 0.0141 0.0387 0.0307 0.1040 0.0223 0.7761
1 20 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0150 0.0149 0.0425 0.0322 0.1039 0.0220 0.7694
1 21 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0157 0.0156 0.0430 0.0330 0.1040 0.0219 0.7667
1 22 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0179 0.0178 0.0476 0.0360 0.1041 0.0215 0.7550
1 23 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0188 0.0187 0.0489 0.0372 0.1041 0.0214 0.7508
1 24 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0195 0.0195 0.0511 0.0383 0.1041 0.0213 0.7462
2  1 0.0000 0.0000 0.0000 0.2688 0.0500 0.0658 0.2243 0.1692 0.2056 0.0162 0.0000 0.0000 0.0000 0.0000
2  2 0.0001 0.0004 0.0006 0.2824 0.0622 0.0970 0.1974 0.1545 0.1910 0.0145 0.0000 0.0000 0.0000 0.0000
2  3 0.0001 0.0010 0.0032 0.2832 0.0763 0.1114 0.1912 0.1380 0.1821 0.0134 0.0000 0.0000 0.0000 0.0000
2  4 0.0000 0.0006 0.0011 0.2864 0.0669 0.1044 0.2008 0.1441 0.1799 0.0158 0.0000 0.0000 0.0000 0.0000
2  5 0.0000 0.0001 0.0005 0.2800 0.0563 0.0875 0.2159 0.1609 0.1819 0.0168 0.0000 0.0000 0.0000 0.0000
2  6 0.0000 0.0000 0.0002 0.2681 0.0522 0.0785 0.2248 0.1703 0.1885 0.0174 0.0000 0.0000 0.0000 0.0000
2  7 0.0000 0.0001 0.0006 0.2754 0.0573 0.0907 0.2186 0.1593 0.1806 0.0174 0.0000 0.0000 0.0000 0.0000
2  8 0.0000 0.0002 0.0005 0.2765 0.0580 0.0922 0.2189 0.1584 0.1780 0.0174 0.0000 0.0000 0.0000 0.0000
2  9 0.0000 0.0000 0.0003 0.2747 0.0542 0.0818 0.2228 0.1682 0.1808 0.0173 0.0000 0.0000 0.0000 0.0000
2 10 0.0000 0.0001 0.0005 0.2853 0.0572 0.0854 0.2166 0.1631 0.1750 0.0168 0.0000 0.0000 0.0000 0.0000
2 11 0.0000 0.0001 0.0006 0.2783 0.0577 0.0923 0.2179 0.1576 0.1785 0.0171 0.0000 0.0000 0.0000 0.0000
2 12 0.0000 0.0000 0.0004 0.2643 0.0540 0.0880 0.2274 0.1638 0.1844 0.0176 0.0000 0.0000 0.0000 0.0000
2 13 0.0000 0.0000 0.0000 0.2684 0.0500 0.0730 0.2302 0.1753 0.1861 0.0170 0.0000 0.0000 0.0000 0.0000
2 14 0.0000 0.0000 0.0000 0.2686 0.0493 0.0605 0.2334 0.1809 0.1908 0.0166 0.0000 0.0000 0.0000 0.0000
2 15 0.0000 0.0000 0.0000 0.2752 0.0503 0.0588 0.2339 0.1810 0.1843 0.0166 0.0000 0.0000 0.0000 0.0000
2 16 0.0000 0.0000 0.0000 0.2731 0.0499 0.0580 0.2346 0.1830 0.1846 0.0169 0.0000 0.0000 0.0000 0.0000
2 17 0.0000 0.0000 0.0000 0.2753 0.0503 0.0584 0.2324 0.1799 0.1870 0.0168 0.0000 0.0000 0.0000 0.0000
2 18 0.0000 0.0000 0.0000 0.2911 0.0530 0.0584 0.2303 0.1736 0.1774 0.0161 0.0000 0.0000 0.0000 0.0000
2 19 0.0000 0.0000 0.0000 0.2688 0.0490 0.0557 0.2318 0.1841 0.1930 0.0177 0.0000 0.0000 0.0000 0.0000
2 20 0.0000 0.0000 0.0000 0.2721 0.0497 0.0571 0.2293 0.1793 0.1952 0.0173 0.0000 0.0000 0.0000 0.0000
2 21 0.0000 0.0000 0.0000 0.3086 0.0562 0.0612 0.2237 0.1594 0.1759 0.0150 0.0000 0.0000 0.0000 0.0000
2 22 0.0000 0.0000 0.0000 0.2804 0.0514 0.0608 0.2289 0.1724 0.1901 0.0161 0.0000 0.0000 0.0000 0.0000
2 23 0.0000 0.0000 0.0000 0.2792 0.0512 0.0613 0.2294 0.1728 0.1902 0.0160 0.0000 0.0000 0.0000 0.0000
2 24 0.0000 0.0000 0.0000 0.2707 0.0497 0.0603 0.2307 0.1775 0.1946 0.0166 0.0000 0.0000 0.0000 0.0000
```

2020 VMT by Facility Type (OHFVMT.D)

```
VMT BY FACILITY
    1 0.319 0.414 0.249 0.018
      0.336 0.395 0.252 0.017
      0.349 0.393 0.241 0.018
      0.328 0.401 0.253 0.019
      0.314 0.412 0.254 0.020
      0.315 0.421 0.244 0.021
      0.303 0.424 0.252 0.021
      0.306 0.422 0.251 0.021
      0.318 0.414 0.247 0.021
      0.319 0.405 0.256 0.020
      0.333 0.403 0.244 0.020
      0.355 0.400 0.225 0.020
      0.354 0.395 0.232 0.019
      0.340 0.402 0.239 0.019
      0.331 0.403 0.246 0.019
      0.346 0.396 0.238 0.019
      0.368 0.381 0.232 0.018
      0.393 0.355 0.235 0.017
      0.402 0.368 0.212 0.018
      0.376 0.380 0.225 0.018
      0.330 0.377 0.276 0.017
```

```
      0.317 0.406 0.258 0.018
      0.305 0.414 0.262 0.019
      0.304 0.423 0.254 0.020
...
Identical distribution for all veh. types with the exception of diesel
transit buses
   26 0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.179 0.747 0.054 0.020
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
      0.024 0.925 0.042 0.009
```

2020 MOBILE6.2 Input File (OHSCN.IN)

```
* Mobile6 input file for Butler, Clermont, Hamilton and Warren counties,
* low RVP beginning summer 2008
* created 4/9/07 by ajr, includes annual scenario,low RVP,post 2007
******************  Header Section  ************************
MOBILE6 INPUT FILE :
POLLUTANTS         : HC NOx CO
PARTICULATES       :
* PARTICULATES REPORTED IN *.PM FILE
REPORT FILE        : oh.rpt
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE EMISSIONS : 2211 1111 22
DAILY OUTPUT       :
EMISSIONS TABLE    : ohemiss.tb1

RUN DATA
******************  Run Section  ***************************
VMT BY HOUR        : OHHVMT.D
SPEED VMT          : OHSVMT.D
VMT BY FACILITY    : OHFVMT.D
REG DIST           : OHREG.D
FUEL PROGRAM       : 1
OXYGENATED FUELS   : .000 .420 .000 .036 2
STAGE II REFUELING :
93 3 86. 86.
EXPAND BUS EFS     :
REBUILD EFFECTS    : 0.10
******************  Summer Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
FUEL RVP           : 7.8
SEASON             : 1
MIN/MAX TEMP       : 62.0 91.3
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
******************  Annual Scenario Section  ***************
SCENARIO RECORD    : Ohio Emissions - CY20xx
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
FUEL RVP           : 9.0
MIN/MAX TEMP       : 47.0 64.0
PARTICLE SIZE      : 2.5
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR      : 43
******************  End of Run  ****************************
```

```
END OF RUN
```

2020 MOBILE6.2 Output File (OH.RPT)

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: OHSCN.IN (file 3, run 1).                                 *
*************************************************************************

* Reading Hourly VMT distribution from the following external
* data file: OHHVMT.D

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: OHSVMT.D

* Reading Hourly Roadway VMT distribution from the following external
* data file: OHFVMT.D

  Reading User Supplied ROADWAY VMT Factors

* Reading Registration Distributions from the following external
* data file: OHREG.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.
  M601 Comment:
               User has enabled STAGE II REFUELING.


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12
 HDDV DEFEAT DEVICE EFFECTS ARE PRESENT. THE REBUILD FRACTION IS 0.10.
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  62.0 (F)
               Maximum Temperature:  91.3 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   7.8 psi
                     Weathered RVP:   8.0 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2697    0.4367    0.1632              0.0361    0.0002    0.0024    0.0866    0.0051    1.0000
  -----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.406     0.411     0.498     0.435     0.483     0.071     0.150     0.311      2.74     0.429
     Composite CO  :       6.26      6.92      7.62      7.11      8.96     0.738     0.426     0.572     18.16     6.420
     Composite NOX :      0.282     0.365     0.489     0.399     0.586     0.066     0.188     1.946      1.22     0.512
  -----------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                       ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     1.010     0.275     0.449
     Composite CO  :    16.27      0.806     1.044
     Composite NOX :     2.141     2.876     4.709
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Ohio Emissions - CY20xx
* File 3, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
  M111 Warning:
               The input dIesel sulfur level of  43.0 ppm exceeds
               the 2007 HDD Rule diesel sulfur limit of 15 ppm.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  47.0 (F)
                Maximum Temperature:  64.0 (F)
                  Absolute Humidity:   75. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   9.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                         ATP Program:  No
                  Reformulated Gas:  No

   Ether Blend Market Share: 0.000       Alcohol Blend Market Share: 0.420
   Ether Blend Oxygen Content: 0.000     Alcohol Blend Oxygen Content: 0.036
                                          Alcohol Blend RVP Waiver: Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2697    0.4367    0.1632              0.0361    0.0002    0.0024    0.0866    0.0051    1.0000
 -----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.401     0.431     0.523     0.456     0.439     0.071     0.150     0.311      2.22     0.436
     Composite CO  :      9.45      9.73     10.46      9.93      9.83     0.738     0.426     0.572     16.22     8.991
     Composite NOX :      0.271     0.378     0.506     0.413     0.589     0.066     0.188     1.946      1.41     0.518
  -----------------------------------------------------------------------------------------------------------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0001    0.0010    0.0019
-------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     0.939     0.275     0.449
     Composite CO  :    17.83      0.806     1.044
     Composite NOX :     2.152     2.876     4.709
-------------------------------------------------------------------------------------------------------------------------
```

APPENDIX D

Air Quality Impact Summary for the OKI Portion of the Nonattainment Area and Emissions by State/County

2005 Output Report (R7803)

DAILY AIR QUALITY IMPACT FOR OKI REGION SUMMARY 10-OCT-08

County or Township	Network Road Miles	Network Lane Miles	Vehicle Miles	VOC (Tons/Day)	CO (Tons/Day)	NOX (Tons/Day)	PM (Tons/Day)	Summer VMT
Boone County	233.66	613.11	3900873.	4.304	46.921	10.214	0.176	4162762.
Butler County	580.75	1441.60	7421978.	9.898	102.823	18.802	0.332	7774168.
Campbell County	198.42	509.82	2276611.	2.511	27.384	5.958	0.103	2428092.
Clermont County	427.95	983.82	5051723.	6.824	69.986	12.963	0.226	5359970.
Dearborn County	147.07	348.94	1323712.	2.360	20.456	3.399	0.060	1412377.
Hamilton County	1061.67	3076.64	21783578.	29.404	301.786	55.854	0.975	23094892.
Kenton County	239.03	592.36	3908394.	4.304	47.012	10.214	0.176	4162693.
Warren County	397.32	979.42	5853879.	7.935	81.099	15.074	0.262	6232673.
Montgomery Cnty	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Greene County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Miami County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clark County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Preble County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clinton County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Lawrenceburg Twp	25.15	69.78	575202.	0.997	8.889	1.435	0.026	596322.
State								
IN Not AQ Region	147.07	348.94	1323712.	2.360	20.456	3.399	0.060	1412377.
KY - OKI Only	671.11	1715.29	10085878.	11.119	121.317	26.386	0.455	10753546.
OH - OKI Only	2467.69	6481.48	40111160.	54.061	555.693	102.692	1.795	42461700.
OH - MVRPC Only	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
OH - Other	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
IN NonAttainment	25.15	69.78	575202.	0.997	8.889	1.435	0.026	596322.
Region	3311.01	8615.49	52095952.	68.536	706.355	133.912	2.335	55223952.
OKI OH+IN AQ Reg	2492.84	6551.26	40686360.	55.057	564.582	104.127	1.821	43058024.

Intra-Zonal VMT

Boone County	23244.	0.024	0.280	0.057	0.001
Butler County	30308.	0.039	0.420	0.073	0.001
Campbell County	9606.	0.010	0.116	0.024	0.000
Clermont County	31608.	0.040	0.438	0.076	0.001
Dearborn County	16428.	0.027	0.254	0.040	0.001
Hamilton County	46049.	0.059	0.638	0.111	0.002
Kenton County	11183.	0.012	0.135	0.027	0.001
Warren County	30337.	0.039	0.420	0.073	0.001
Montgomery Cnty	0.	0.000	0.000	0.000	0.000
Greene County	0.	0.000	0.000	0.000	0.000
Miami County	0.	0.000	0.000	0.000	0.000
Clark County	0.	0.000	0.000	0.000	0.000
Preble County	0.	0.000	0.000	0.000	0.000
Clinton County	0.	0.000	0.000	0.000	0.000
Lawrenceburg Twp	3439.	0.004	0.048	0.008	0.000
Total Intra-Zonal	202202.	0.253	2.747	0.490	0.009
OKI OH+IN AQ Region IZ	141741.	0.180	1.964	0.343	0.006

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

Transit VMT

IN Not AQ Region	0.	0.000	0.000	0.000	0.000
KY - OKI Only	8166.	0.005	0.040	0.148	0.005
OH - OKI Only	29825.	0.009	0.149	0.544	0.019
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	0.	0.000	0.000	0.000	0.000
Total Transit	37992.	0.014	0.190	0.692	0.024
OKI OH+IN AQ Region	29825.	0.009	0.149	0.544	0.019

Grand Totals

IN Not AQ Region	1340140.	2.388	20.710	3.438	0.060
KY - OKI Only	10138077.	11.170	121.887	26.643	0.462
OH - OKI Only	40279288.	54.246	557.758	103.571	1.820
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	578641.	1.001	8.936	1.443	0.026
Grand Total	52133944.	68.550	706.544	134.604	2.360
OKI OH+IN AQ Region	40857928.	55.247	566.695	105.014	1.846

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

2008 Output Report (R7803)

DAILY AIR QUALITY IMPACT FOR OKI REGION SUMMARY 30-SEP-09

County or Township	Network Road Miles	Network Lane Miles	Vehicle Miles	VOC (Tons/Day)	CO (Tons/Day)	NOX (Tons/Day)	PM (Tons/Day)	Summer VMT
Boone County	236.45	639.31	4051620.	3.981	44.192	8.478	0.138	4330563.
Butler County	567.07	1473.35	7714861.	7.842	84.234	15.988	0.260	8102730.
Campbell County	191.02	506.98	2329601.	2.285	25.410	4.865	0.079	2485233.
Clermont County	416.74	972.04	5230069.	5.388	57.104	10.985	0.176	5567110.
Dearborn County	144.53	342.91	1334278.	1.749	15.804	2.655	0.045	1423366.
Hamilton County	1019.54	3042.53	22044516.	22.649	240.691	46.174	0.744	23401434.
Kenton County	223.19	587.32	3904860.	3.838	42.592	8.173	0.133	4174555.
Warren County	387.13	987.90	6025856.	6.226	65.793	12.693	0.203	6432735.
Montgomery Cnty	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Greene County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Miami County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clark County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Preble County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clinton County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Lawrenceburg Twp	24.16	68.73	584186.	0.749	6.919	1.137	0.020	609631.
State								
IN Not AQ Region	144.53	342.91	1334278.	1.749	15.804	2.655	0.045	1423366.
KY - OKI Only	650.65	1733.61	10286081.	10.104	112.194	21.516	0.349	10990352.
OH - OKI Only	2390.48	6475.82	41015308.	42.104	447.821	85.839	1.383	43504008.
OH - MVRPC Only	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
OH - Other	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
IN NonAttainment	24.16	68.73	584186.	0.749	6.919	1.137	0.020	609631.
Region	3209.81	8621.07	53219848.	54.707	582.738	111.147	1.798	56527368.
OKI OH+IN AQ Reg	2414.64	6544.55	41599492.	42.854	454.740	86.976	1.403	44113640.

Intra-Zonal VMT

Boone County	24964.	0.023	0.272	0.049	0.001
Butler County	30824.	0.030	0.337	0.061	0.001
Campbell County	9941.	0.009	0.108	0.019	0.000
Clermont County	32420.	0.031	0.354	0.064	0.001
Dearborn County	16853.	0.021	0.200	0.031	0.001
Hamilton County	46026.	0.045	0.503	0.091	0.002
Kenton County	11097.	0.010	0.121	0.022	0.000
Warren County	31482.	0.030	0.344	0.062	0.001
Montgomery Cnty	0.	0.000	0.000	0.000	0.000
Greene County	0.	0.000	0.000	0.000	0.000
Miami County	0.	0.000	0.000	0.000	0.000
Clark County	0.	0.000	0.000	0.000	0.000
Preble County	0.	0.000	0.000	0.000	0.000
Clinton County	0.	0.000	0.000	0.000	0.000
Lawrenceburg Twp	3396.	0.003	0.037	0.007	0.000
Total Intra-Zonal	207003.	0.203	2.275	0.406	0.007
OKI OH+IN AQ Region IZ	144148.	0.140	1.574	0.284	0.005

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

Transit VMT

IN Not AQ Region	0.	0.000	0.000	0.000	0.000
KY - OKI Only	11375.	0.005	0.045	0.176	0.004
OH - OKI Only	33961.	0.007	0.141	0.531	0.011
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	0.	0.000	0.000	0.000	0.000
Total Transit	45336.	0.011	0.186	0.708	0.014
OKI OH+IN AQ Region	33961.	0.007	0.141	0.531	0.011

Grand Totals

IN Not AQ Region	1351131.	1.770	16.003	2.686	0.046
KY - OKI Only	10343458.	10.151	112.741	21.782	0.354
OH - OKI Only	41190020.	42.247	449.499	86.648	1.399
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	587582.	0.753	6.956	1.144	0.020
Grand Total	53265184.	54.718	582.924	111.855	1.812
OKI OH+IN AQ Region	41777604.	43.000	456.455	87.792	1.419

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

2015 Output Report (R7803)

DAILY AIR QUALITY IMPACT FOR OKI REGION SUMMARY 15-SEP-09

County or Township	Network Road Miles	Network Lane Miles	Vehicle Miles	VOC (Tons/Day)	CO (Tons/Day)	NOX (Tons/Day)	PM (Tons/Day)	Summer VMT
Boone County	243.53	743.15	4798837.	3.152	37.193	4.609	0.092	5105800.
Butler County	586.21	1539.89	8425674.	4.851	64.243	7.520	0.160	8836953.
Campbell County	197.16	550.67	2620037.	1.728	20.306	2.527	0.050	2798785.
Clermont County	424.04	989.87	5618901.	3.272	42.842	5.072	0.107	5960298.
Dearborn County	152.37	367.83	1488387.	1.177	12.543	1.408	0.028	1588928.
Hamilton County	1041.80	3193.63	23005940.	13.411	175.413	20.789	0.436	24429772.
Kenton County	232.28	631.62	4330736.	2.841	33.565	4.154	0.083	4601830.
Warren County	393.28	1024.31	6849283.	4.000	52.224	6.201	0.130	7286355.
Montgomery Cnty	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Greene County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Miami County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clark County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Preble County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clinton County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Lawrenceburg Twp	24.82	70.88	644037.	0.496	5.427	0.594	0.012	670198.

State

IN Not AQ Region	152.37	367.83	1488387.	1.177	12.543	1.408	0.028	1588928.
KY - OKI Only	672.96	1925.44	11749610.	7.720	91.063	11.291	0.224	12506415.
OH - OKI Only	2445.33	6747.70	43899792.	25.534	334.722	39.582	0.832	46513372.
OH - MVRPC Only	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
OH - Other	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
IN NonAttainment	24.82	70.88	644037.	0.496	5.427	0.594	0.012	670198.
Region	3295.48	9111.85	57781832.	34.927	443.756	52.875	1.097	61278912.
OKI OH+IN AQ Reg	2470.15	6818.58	44543828.	26.030	340.149	40.176	0.845	47183568.

Intra-Zonal VMT

Boone County	27656.	0.017	0.214	0.025	0.001
Butler County	32853.	0.018	0.250	0.028	0.001
Campbell County	11141.	0.007	0.086	0.010	0.000
Clermont County	35240.	0.019	0.269	0.030	0.001
Dearborn County	18309.	0.014	0.154	0.016	0.000
Hamilton County	46800.	0.026	0.357	0.040	0.001
Kenton County	12048.	0.007	0.093	0.011	0.000
Warren County	37749.	0.021	0.288	0.032	0.001
Montgomery Cnty	0.	0.000	0.000	0.000	0.000
Greene County	0.	0.000	0.000	0.000	0.000
Miami County	0.	0.000	0.000	0.000	0.000
Clark County	0.	0.000	0.000	0.000	0.000
Preble County	0.	0.000	0.000	0.000	0.000
Clinton County	0.	0.000	0.000	0.000	0.000
Lawrenceburg Twp	3434.	0.002	0.026	0.003	0.000
Total Intra-Zonal	225230.	0.131	1.738	0.195	0.004
OKI OH+IN AQ Region IZ	156076.	0.086	1.190	0.133	0.003

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

Transit VMT

IN Not AQ Region	0.	0.000	0.000	0.000	0.000
KY - OKI Only	9160.	0.003	0.019	0.067	0.001
OH - OKI Only	39966.	0.006	0.075	0.285	0.004
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	0.	0.000	0.000	0.000	0.000
Total Transit	49127.	0.009	0.094	0.352	0.005
OKI OH+IN AQ Region	39966.	0.006	0.075	0.285	0.004

Grand Totals

IN Not AQ Region	1506696.	1.191	12.697	1.424	0.029
KY - OKI Only	11809615.	7.755	91.476	11.404	0.226
OH - OKI Only	44092400.	25.623	335.960	39.997	0.839
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	647471.	0.498	5.454	0.597	0.012
Grand Total	57830960.	34.936	443.849	53.227	1.102
OKI OH+IN AQ Region	44739872.	26.122	341.414	40.594	0.852

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

2020 Output Report (R7803)

DAILY AIR QUALITY IMPACT FOR OKI REGION SUMMARY 16-SEP-09

County or Township	Network Road Miles	Network Lane Miles	Vehicle Miles	VOC (Tons/Day)	CO (Tons/Day)	NOX (Tons/Day)	PM (Tons/Day)	Summer VMT
Boone County	243.53	743.15	5412408.	2.945	37.981	3.434	0.085	5757894.
Butler County	586.21	1539.89	9042376.	4.486	63.991	5.354	0.143	9485722.
Campbell County	197.16	550.67	2833751.	1.548	19.885	1.805	0.045	3027410.
Clermont County	424.04	989.87	6030235.	3.025	42.675	3.611	0.095	6397591.
Dearborn County	152.37	367.83	1640862.	1.026	12.473	1.031	0.026	1752277.
Hamilton County	1041.80	3193.63	23837298.	11.974	168.692	14.290	0.376	25320182.
Kenton County	232.28	631.62	4683779.	2.545	32.868	2.967	0.074	4976098.
Warren County	393.28	1024.31	7672745.	3.862	54.299	4.609	0.121	8165845.
Montgomery Cnty	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Greene County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Miami County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clark County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Preble County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Clinton County	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
Lawrenceburg Twp	24.82	70.88	683890.	0.417	5.199	0.419	0.011	712313.
State								
IN Not AQ Region	152.37	367.83	1640862.	1.026	12.473	1.031	0.026	1752277.
KY - OKI Only	672.96	1925.44	12929937.	7.039	90.733	8.207	0.204	13761400.
OH - OKI Only	2445.33	6747.70	46582656.	23.346	329.658	27.863	0.734	49369340.
OH - MVRPC Only	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
OH - Other	0.00	0.00	0.	0.000	0.000	0.000	0.000	0.
IN NonAttainment	24.82	70.88	683890.	0.417	5.199	0.419	0.011	712313.
Region	3295.48	9111.85	61837348.	31.827	438.063	37.521	0.975	65595328.
OKI OH+IN AQ Reg	2470.15	6818.58	47266544.	23.763	334.856	28.283	0.745	50081652.

Intra-Zonal VMT

Boone County	32337.	0.017	0.227	0.019	0.001
Butler County	35277.	0.017	0.250	0.020	0.001
Campbell County	11864.	0.006	0.083	0.007	0.000
Clermont County	36963.	0.017	0.262	0.021	0.001
Dearborn County	19281.	0.011	0.147	0.011	0.000
Hamilton County	47824.	0.023	0.338	0.027	0.001
Kenton County	12926.	0.007	0.091	0.008	0.000
Warren County	43391.	0.021	0.307	0.024	0.001
Montgomery Cnty	0.	0.000	0.000	0.000	0.000
Greene County	0.	0.000	0.000	0.000	0.000
Miami County	0.	0.000	0.000	0.000	0.000
Clark County	0.	0.000	0.000	0.000	0.000
Preble County	0.	0.000	0.000	0.000	0.000
Clinton County	0.	0.000	0.000	0.000	0.000
Lawrenceburg Twp	3610.	0.002	0.026	0.002	0.000
Total Intra-Zonal	243473.	0.120	1.730	0.140	0.004
OKI OH+IN AQ Region IZ	167065.	0.079	1.182	0.094	0.003

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

Transit VMT

IN Not AQ Region	0.	0.000	0.000	0.000	0.000
KY - OKI Only	9160.	0.003	0.009	0.030	0.000
OH - OKI Only	39966.	0.006	0.036	0.127	0.002
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	0.	0.000	0.000	0.000	0.000
Total Transit	49127.	0.009	0.045	0.157	0.003
OKI OH+IN AQ Region	39966.	0.006	0.036	0.127	0.002

Grand Totals

IN Not AQ Region	1660143.	1.037	12.620	1.043	0.026
KY - OKI Only	12996224.	7.071	91.144	8.271	0.205
OH - OKI Only	46786076.	23.429	330.850	28.082	0.739
OH - MVRPC Only	0.	0.000	0.000	0.000	0.000
OH - Other	0.	0.000	0.000	0.000	0.000
IN NonAttainment	687500.	0.419	5.224	0.421	0.011
Grand Total	61886476.	31.836	438.107	37.677	0.977
OKI OH+IN AQ Region	47473576.	23.848	336.074	28.504	0.750

* Note: VMT reflects yearly average daily VMT. Emissions for CO are based on yearly average daily VMT.
Emissions for VOC and NOX include a factor to represent summer travel.

Appendix E
Clinton County Air Quality Analyis (provided by ODOT)

	Clinton County OZONE	YEAR	2005					
	FUNCTIONAL CLASSIFICATION	**HPMS 2005 VMT**	**ANNUAL GROWTH FACTOR**	**2005 VMT**	**2005 VOC EF GM/MI**	**VOC POLLUTANT BURDEN TONS/DAY**	**2005 NOX EF GM/MI**	**NOX POLLUTANT BURDEN TONS/DAY**
	RURAL							
01	INTERSTATE	554,300	1.000	554,300	1.418	0.865	3.156	1.924
02	PRINCIPAL ARTERIAL	0	1.000	0	1.461	0.000	2.452	0.000
06	MINOR ARTERIAL	322,000	1.000	322,000	1.461	0.517	2.452	0.868
07	MAJOR ARTERIAL	339,140	1.000	339,140	1.552	0.579	2.223	0.829
08	MINOR COLLECTOR	5,400	1.000	5,400	1.552	0.009	2.223	0.013
09	LOCAL	393,470	1.000	393,470	1.552	0.672	2.223	0.962
	URBAN							
11	INTERSTATE	0	1.000	0	1.418	0.000	3.156	0.000
12	FREEWAY/EXPRESSWAY	0	1.000	0	1.418	0.000	3.156	0.000
14	PRINCIPAL ARTERIAL	140,870	1.000	140,870	1.753	0.272	2.174	0.337
16	MINOR ARTERIAL	21,980	1.000	21,980	1.753	0.042	2.174	0.053
17	COLLECTOR	23,940	1.000	23,940	1.753	0.046	2.175	0.057
19	LOCAL	8,500	1.000	8,500	1.753	0.016	2.269	0.021
	2005 TOTAL	1,809,600		1,809,600		3.019		5.065

	Clinton County OZONE	YEAR	2008					
	FUNCTIONAL CLASSIFICATION	**HPMS 2008 VMT**	**ANNUAL GROWTH FACTOR**	**2008 VMT**	**2008 VOC EF GM/MI**	**VOC POLLUTANT BURDEN TONS/DAY**	**2008 NOX EF GM/MI**	**NOX POLLUTANT BURDEN TONS/DAY**
	RURAL							
01	INTERSTATE	553,330	1.000	553,330	1.108	0.674	2.414	1.469
02	PRINCIPAL ARTERIAL	0	1.000	0	1.139	0.000	1.899	0.000
06	MINOR ARTERIAL	314,550	1.000	314,550	1.139	0.394	1.899	0.657
07	MAJOR ARTERIAL	360,620	1.000	360,620	1.204	0.478	1.721	0.683
08	MINOR COLLECTOR	5,200	1.000	5,200	1.204	0.007	1.721	0.010
09	LOCAL	369,170	1.000	369,170	1.204	0.489	1.721	0.699
	URBAN							
11	INTERSTATE	0	1.000	0	1.108	0.000	2.414	0.000
12	FREEWAY/EXPRESSWAY	0	1.000	0	1.108	0.000	2.414	0.000
14	PRINCIPAL ARTERIAL	134,360	1.000	134,360	1.349	0.199	1.682	0.249
16	MINOR ARTERIAL	22,620	1.000	22,620	1.349	0.034	1.682	0.042
17	COLLECTOR	25,240	1.000	25,240	1.350	0.037	1.684	0.047
19	LOCAL	8,490	1.000	8,490	1.450	0.014	1.757	0.016
	2005 TOTAL	1,793,580		1,793,580		2.326		3.871

	Clinton County OZONE	**YEAR**	**2015**					
	FUNCTIONAL CLASSIFICATION	**HPMS 2008 VMT**	**ANNUAL GROWTH FACTOR**	**2015 VMT**	**2015 VOC EF GM/MI**	**VOC POLLUTANT BURDEN TONS/DAY**	**2015 NOX EF GM/MI**	**NOX POLLUTANT BURDEN TONS/DAY**
	RURAL							
01	INTERSTATE	553,330	1.014	607,786	0.622	0.416	1.072	0.717
02	PRINCIPAL ARTERIAL*	0	1.013	104,288	0.632	0.073	0.873	0.100
06	MINOR ARTERIAL	314,550	1.008	331,901	0.632	0.231	0.873	0.319
07	MAJOR ARTERIAL	360,620	1.014	396,110	0.662	0.288	0.799	0.348
08	MINOR COLLECTOR	5,200	1.009	5,540	0.662	0.004	0.799	0.005
09	LOCAL	369,170	1.012	401,319	0.662	0.292	0.799	0.353
	URBAN							
11	INTERSTATE	0	0.000	0	0.622	0.000	1.072	0.000
12	FREEWAY/EXPRESSWAY	0	0.000	0	0.622	0.000	1.072	0.000
14	PRINCIPAL ARTERIAL	134,360	1.008	142,462	0.735	0.115	0.784	0.123
16	MINOR ARTERIAL	22,620	1.010	24,201	0.735	0.020	0.784	0.021
17	COLLECTOR	25,240	1.009	26,874	0.735	0.022	0.785	0.023
19	LOCAL	8,490	1.009	9,014	0.789	0.008	0.819	0.008
	2005 TOTAL	1,793,580		2,049,496		1.468		2.016

	Clinton County OZONE	YEAR	2020					
	FUNCTIONAL CLASSIFICATION	**HPMS 2008 VMT**	**ANNUAL GROWTH FACTOR**	**2020 VMT**	**2020 VOC EF GM/MI**	**VOC POLLUTANT BURDEN TONS/DAY**	**2020 NOX EF GM/MI**	**NOX POLLUTANT BURDEN TONS/DAY**
	RURAL							
01	INTERSTATE	553,330	1.014	649,934	0.486	0.347	0.687	0.491
02	PRINCIPAL ARTERIAL*	0	1.013	111,269	0.493	0.060	0.578	0.071
06	MINOR ARTERIAL	314,550	1.008	344,877	0.493	0.187	0.578	0.219
07	MAJOR ARTERIAL	360,620	1.014	423,579	0.517	0.241	0.535	0.249
08	MINOR COLLECTOR	5,200	1.009	5,797	0.517	0.003	0.535	0.003
09	LOCAL	369,170	1.012	425,983	0.517	0.242	0.535	0.251
	URBAN							
11	INTERSTATE	0	0.000	0	0.486	0.000	0.687	0.000
12	FREEWAY/EXPRESSWAY	0	0.000	0	0.486	0.000	0.687	0.000
14	PRINCIPAL ARTERIAL	134,360	1.008	148,547	0.577	0.094	0.527	0.086
16	MINOR ARTERIAL	22,620	1.010	25,398	0.577	0.016	0.527	0.015
17	COLLECTOR	25,240	1.009	28,105	0.578	0.018	0.528	0.016
19	LOCAL	8,490	1.009	9,409	0.622	0.006	0.551	0.006
	2005 TOTAL	1,793,580		2,172,899		1.216		1.407

*VMT due to new facilities estimated with the Ohio Statewide Travel Demand Model

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APPENDIX G

Indiana Department of Environmental Management (IDEM) – Area Source Inventory Standard Operating Procedure

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Area Source Inventory
S-006-OAQ-R-MO-08-S-R1

Standard Operating Procedure

Office: Office of Air Quality
Branch: Air Programs Branch
Section: Technical Support and Modeling Section

Revised: 02/27/2008 **Revision *Cycle:*** 2 years
Effective date: 02/15/07

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

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

Authorized Signatures

I approve and authorize this Standard Operating Procedure:

Branch Chief
Scott Deloney
Typed/Printed
Signature
3/12/08
Date

Section Chief
Ken Ritter
Typed/Printed
Signature
3/10/08
Date

Section QA Contact
Michele Boner
Typed/Printed
Signature
3/10/08
Date

Branch QA Coordinator
Chris Pedersen
Typed/Printed
Signature
3-10-08
Date

Author
Michele Boner
Typed/Printed
Signature
3/10/08
Date

This Standard Operating Procedure is consistent with agency requirements.

Indiana Department of Environmental Management
Quality Assurance Program
Planning and Assessment
3-17-08
Date

Table of Contents

1. Overview work flow chart

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

2. Definitions

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

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

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

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

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

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

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

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

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

3. Roles

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

Responsibilities:

Senior Environmental Manager

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

Environmental Manager

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

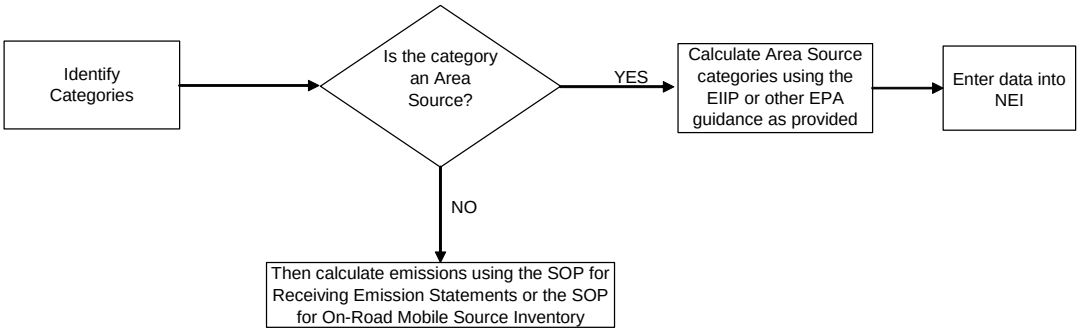
4. Description of equipment, forms, and/or software to be used

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

5. Procedure

5.1 Procedural Flowchart

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



5.2 Procedure

Category 1: Stationary Fuel Combustion

Sub-Category 1.1: Industrial Fuel Combustion

SCC: 2102002000, 210200400, 2102005000, 2102006000, 2102007000

Follow these steps when calculating emissions from industrial fuel combustion:

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

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

   a. Go to http://www.eia.doe.gov/
   b. Click on link for the various types of fuel consumption
   c. Click on consumption tab for state totals

2. To avoid double calculating the various fuel combustions, subtract reported source totals from the total statewide fuel consumption by querying the total process rates for the various SCC codes using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. The remaining number is the area source fuel consumption for the state.

3. To distribute the remaining fuel to the county level, calculate the ratio of county to state employment for the manufacturing sector by dividing the number of Manufacturing Employees for each county by the number of manufacturing employees statewide. Use the County Business Patterns website at http://www.census.gov/ to find the number of manufacturing employees for each county.

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

   a. Go to http://www.census.gov/
   b. Click on Economic Census
   c. Under 2002 Reports by State, use the down arrow key to select Indiana
   d. Now, select each of the counties to find the county manufacturing employees
   e. Use the total of employees for manufacturing under the paid employees' column

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

Sub-Category 1.2: Commercial/Institutional Fuel Combustion

SCC: 2103004000, 2103005000, 2103006000, 2103007000

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

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

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

2. To avoid double calculating the various fuel combustions, subtract reported source totals from the total statewide fuel consumption by querying the total process rates for the various fuels using the SIC codes greater than 4999 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. These are the SIC codes that identify all the commercial/institutional area sources.

3. To distribute the remaining fuel to the county level, calculate the ratio of county to state employment for the commercial/institutional sector by dividing the number of commercial/institutional employees for each county by the number of commercial/institutional employees statewide. Use the County Business Patterns website at http://www.census.gov/ to find the number of commercial/institutional employees for each county.

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

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

Sub-Category 1.3: Residential Fuel Combustion

SCC: 2104002000, 2104004000, 2104006000, 2104007000

Follow these steps when calculating emissions from residential fuel combustion:

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

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

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

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

   a. Go to http://www.census.gov/
   b. On the left hand side click on "American Fact Finder"
   c. Using the drop down menu, click on Indiana
   d. Scroll to "Housing Characteristics" and select "show more"
   e. On the left hand side, select "change geography (state, county, place…)"
   f. Using the drop down menu, select county, state, and each county name to obtain housing information

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

Sub-Category 1.4: Residential Heating Using Wood

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

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

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

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

   a. Go to http://www.eia.doe.gov/
   b. Click on Households, Buildings & Industry
   c. Under Consumption Summaries, click on "Annual"
   d. Now, over to the right click on "State Energy"
   e. Using the drop down menu at the bottom, select "Indiana"
   f. Under "Consumption" click on the "Residential" document

2. Using the ratio estimates provided by EPA found in the "Documentation For The Final 2002 NONPOINT SECTOR (FEB 06 version) NATIONAL EMISSIONS INVENTORY FOR CRITERIA AND HAZARDOUS AIR POLLUTANTS" at http://www.epa.gov/ttn/chief/net/2002inventory.html#documentaiton the number calculated above in step 1 is broken out into three categories (fireplace without inserts, fireplaces with inserts and woodstoves).

3. To distribute to the county level for the three categories above, calculate a ratio of county to state using the statewide total of households and the county total of households that burn wood found at the U.S. Census Bureau website http://www.census.gov/. The remaining number is the process rate for each county. Multiply the process rate by the appropriate EPA emission factors for each of the categories using the EIIP, Volume 3, Chapter 2, Residential Wood Combustion at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii02_apr2001.pdf.

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

Category 2: Industrial Processes

Sub-Category 2.1: Bakeries

SCC: 2302050000

Follow these steps when calculating emissions from bakeries:

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

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

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

2. Multiply the per capita consumption factor calculated above in step 1 by the Indiana population found at the U.S. Census Bureau at http://www.census.gov.
   Note: As of the date of this SOP, the following steps will lead to Indiana population data.

   a. Go to http://www.census.gov
   b. Under Population Finder, use the drop down menu to select Indiana

3. To avoid double calculating the amount consumed for the state, subtract the reported process rate for both the straight-dough and sponge-dough by querying the total process rates for the SCC 30203202 (straight-dough) and SCC 30203201 (sponge-dough) using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.

4. Multiply the remaining process rate by the straight-dough emission factor of .5 lbs VOC/1,000 pounds baked found in the EIIP, Volume 3, Area Source Method Abstracts: Baked Goods at Commercial/Retail Bakeries at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/index.html.

5. Calculate a per capita factor by dividing the Indiana population found in step 2 by the remaining process rate. Now multiply the per capita factor by each of the county populations to calculate the VOC emissions for each county.

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

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

Category 3: Solvent Utilization

Sub-Category 3.1: Architectural Coatings

SCC: 2401001000

Follow these steps when calculating emissions from architectural coatings:

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

Table 1
National Solvent Coating Sales

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

Table 2
National Water Based Coating Sales

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

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

a. Go to http://www.census.gov
b. Under Business & Industry, select more
c. Now select Current Industrial Reports (CIR)
d. Select CIRs by Subject
e. Tab down to find the report "Paints and Allied Products"

2. Now multiply the total national number for solvent-based paints by the average solvent-based coating content number (3.87 lbs VOC/gallon) and the total national number for water-based paints by the average water-based coating content number (0.74 lbs VOC/gal) found in the EIIP, Volume 3, Chapter 3: Architectural Surface Coating at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/archsfc.pdf.

3. Add the total solvent-based coatings and the water-based paints together for a total national VOC emission factor from architectural surface coating. Then divide this number by the total national population using the U.S. Census Bureau's website http://www.census.gov.

4. Multiply the number calculated above in step 3 by each of the county populations to calculate the total emissions per county.

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

Sub-Category 3.2: Automobile Refinishing

SCC: 2401005000

Follow these steps when calculating emissions from automobile refinishing:

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

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

   a. Go to http://www.census.gov
   b. Under Business & Industry, select more
   c. Now select the County Business Patterns report for county
   d. Select Indiana
   e. Select each of the counties to find the number of employees for the corresponding SIC or NAICS code

2. Multiply the emission factor 3,519 lbs VOC/employee found in the EIIP, Volume 3, Chapter 13 Auto Body Refinishing at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/archsfc.pdf and the county employment found above in step 1 to calculate the VOC emissions for each county.

Sub-Category 3.3: Traffic Markings

SCC: 2401008000

Follow these steps when calculating for traffic markings:

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

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

a. Go to http://www.census.gov
b. Under Business & Industry, select more
c. Now select Current Industrial Reports (CIR)
d. Select CIRs by Subject
e. Tab down to find the report "Paints and Allied Products"
f. Use the quantity amount in 1000/gallons under "Traffic marking paints (all types: shelf goods and highway department)

2. Allocate the national emissions calculated above in step 1 to the state level by dividing the amount of money spent in Indiana by the money spent nationally on highway maintenance using the category "Total Disbursements" at the Federal Highway Administration's website http://www.fhwa.dot.gov/policy/ohim/hs04/htm/sf2.htm.

3. Calculate the emission factor for Indiana by dividing the state level emissions by the total number of roadway miles in Indiana, given by contacting the Program Development Division, Highway Statistics, Indiana Department of Transportation or the Office of Air Quality, Technical Support and Modeling Section's mobile inventory preparer.

4. Multiply the emission factor by the total number of roadway miles in each county using the information supplied from above in step 3.

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

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

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

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

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

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

2. Divide the reported VOC emissions for each of the SIC's by the reported employment for each SIC. Use this number for the emission factor.

3. Subtract the number of reported employees found in step 1 from each of the SIC county totals using the U.S. Census Bureau's website http://www.census.gov. Use the remaining number for the process rate for each of the counties.

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

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

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

SCC: 2401090000, 2401100000, 2401200000

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

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

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

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

Sub-Category 3.6: Degreasing

SCC: 2415230000, 2415245000, 2415345000, 2415360000

Follow these steps when calculating emissions from degreasing activities:

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

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

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

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

2. Run a query to find reported employment numbers for each of the categories in the table above using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.

3. Subtract the reported employment from the U.S Census Bureau's numbers to find the process rates for each of the counties.

4 Calculate the VOC emissions by multiplying the default emission factor in the EIIP, Volume 3, Chapter 6, Solvent Cleaning at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii06fin.pdf and the process rate for each of the counties found in step 3.

Sub-Category 3.7: Dry Cleaners

SCC: 2420010370

Follow these steps when calculating emissions from dry cleaners:

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

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

2. Take the sum of the employment from the counties, multiply by 2000, and divide by the statewide total found in step 1. Use this number for the emission factor.

3. Calculate the process rate by running a query to find the number of reported employees for SIC 7216 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract this number from the county total.

4. Multiply the process rate for each of the counties above by the emission factor to calculate for VOC emissions.

Sub-Category 3.8: Graphic Arts

SCC: 2425000000

Follow these steps when calculating emissions from graphic arts activities:

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

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

2. Develop an emission factor by subtracting point source emissions from the total emissions and dividing by the state population found in step 1.

3. Distribute to the counties by multiplying the emission factor by the population for each county.

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

Sub-Category 3.9: Rubber and Plastics

SCC: 2430000000

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

1. Run a query to find the total of reported emissions and number of reported employees for all SIC's beginning with 30 using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb.

2. Calculate the emission factor by dividing the point source emissions by the reported employees.

3. Subtract the reported employment for SIC's beginning with 30 from total employment for each of the counties.

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

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

Sub-Category 3.10: Miscellaneous Industrial Adhesives

SCC: 2440020000

Follow these steps when calculating emissions from industrial adhesives activities:

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

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

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

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

   a. Go to http://www.census.gov

b. Select Economic Census
c. Now select “Businesses with paid employees”
d. Use the manufacturing number under “paid employees”

2. To avoid double calculating, run a query collecting sources reporting adhesives using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb. Subtract the reported employment from the total amount of manufacturing employment. The remaining number is the process rate.

Sub-Category 3.11: Commercial/Consumer Solvents

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

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

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

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

Emission Factors for Commercial/Consumer Solvents

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

Sub-Category 3.12: Asphalt Emulsions

SCC: 2461022000

Follow these steps when calculating emissions from asphalt emulsions:

1. To calculate the process rate, find the number of barrels of asphalt used for the state found at the State Energy Data website at http://www.eia.doe.gov/emeu/states/_seds_updates.html.

2. Obtain the amount of roadway miles for the state and county from the Indiana Department of Transportation’s, Division of Roadway Management Section.

3. Divide the county roadway miles by the state roadway miles and multiply by the total asphalt usage for the state found above in step 1.

4. Multiply the process rate by the default emission factor in the EIIP, Volume 3, Chapter 17, Asphalt Paving http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii17_apr2001.pdf.

Sub-Category 3.13: Pesticide Usage

SCC: 2461800000

Follow these steps when calculating emissions from pesticide usage:

1. Calculate pesticide usage by using a state specific emission factor. Develop the factor using a methodology that includes the retrieval of information of pesticides used, an emission factor for each pesticide used, a calculation about the inert ingredients in each pesticide, and an estimate of the amount of crop oil concentrate (an adjuvant used for the application of herbicides) used in the state of Indiana.

2. Find the amount of active ingredients for herbicides and insecticides applied to Indiana fields at the Indiana Agricultural Statistics Service at http://www.usda.gov/nass/pubs/agr02/acro02.htm.

3. Insert the numbers for both corn and soybeans to the Excel pesticide table found at K:OAQ_INV\Inv\pesticide.

4. Calculate the emission factor by adding the emissions from crop oil concentrates obtained in the pesticide Excel table, pesticides, and solvent carriers and then divide by the total number of acres of corn and soybeans in Indiana found at the National Agricultural Statistics Services, United States Department of Agriculture http://www.nass.usda.gov/QuickStats/.

5. Multiply the emission factor by the county-specific acreage for both corn and soybeans found at the National Agricultural Statistics Services, United States Department of Agriculture http://www.nass.usda.gov/QuickStats/.

Category 4: Petroleum Marketing

Follow these steps when calculating emissions for bulk terminals:

Sub-Category 4.1: Bulk Terminals

SCC: 2501050120

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and by county using, the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Run a query to find the amount of point source reported gasoline using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract from the amount sold statewide. Use this to allocate to each county.

4. Allocate the amount gasoline sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

5. EPA guidance suggests that only 25% of all gasoline consumed goes through bulk plants. To calculate process rate, multiply each county by 25% to estimate the amount of fuel transferred through bulk terminals.

6. Multiply process rate by the emission factors in the table below:

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

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

Sub-Category 4.2: Portable Fuel Containers

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

Follow these steps when calculating emissions for portable fuel containers:

1. Calculate the emissions for Commercial and Residential gas cans by using the method developed by the California Environmental Protection Agency's document Public Meeting to Consider Approval of California's Portable Gasoline-Container Emissions Inventory. Use the excel spreadsheet found at K:\OAQ_INV\Inv\Area Source\Gasoline.zip to calculate the emissions for permeation, diurnal, and transport. Both the Spillage and Vapor losses are estimated in the nonroad emissions inventory by EPA models.

2. Using the survey results below in Table 1, estimate the number of fuel containers in the state for residential categories. The calculations are set up in an excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls, insert the number of occupied housing, from the U.S. Census Bureau's website at http://www.census.gov/, in the space marked "households".

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

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

Table 1

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

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

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

Table 2

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

Table 3

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

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

5. Calculate diurnal emissions by inserting the numbers for both residential and commercial into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls.

6. Calculate transport spillage emissions by inserting the numbers for both residential and commercial into the excel spreadsheet at K:\OAQ_INV\Inv\Area Source\ Gasoline.zip\250101\GasCans.xls

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

SCC: 2501060052 (uncontrolled), 2501060053 (controlled)

Follow these steps when calculating emissions from tank loading and unloading

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and county wide by using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Run a query to find the amount of point source reported gasoline using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb and subtract from the amount sold statewide. Use this to allocate to each county.

4. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

5. Find the amount of gasoline tanks from the Underground Storage Tank data files from the Office of Land Quality, Indiana Department of Environmental Management http://www.in.gov/idem/programs/land/ust/ust.html.

6. Now copy the data into an Excel spreadsheet. Filter finding the tanks that have only gasoline. Also filter out the tanks that are "permanently out of service", "suspended per inspection", and "unregulated".

7. Using the Petroleum Sources Applicability Rule 326 IAC 8-4-1, filter out the tanks that are located in Clark, Boone, Dearborn, Elkhart, Floyd, Hamilton, Hancock, Harrison, Hendricks, Johnson, Lake, Marion, Morgan, Porter, Saint Joseph, and Shelby counties.

8. To find the amount of balanced tanks in Indiana, use the total of gasoline tanks found in step 7 and divide by the number of tanks that constructed after 1985 through current year. Use the spreadsheet created in step 7 and filter out the tanks that constructed prior to 1985.

9. Now apply the percentage found in step 8 to the amount of gasoline found in each county.

10. Apply the controlled emission factor to only those counties identified in 326 IAC 8-4, i.e. Boone, Clark, Dearborn, Elkhart, Hamilton, Hancock, Harrison, Hendricks, Johnson, Lake, Marion, Morgan, Porter, Saint Joseph, and Shelby. Use the emission factors for stage 1 controlled and uncontrolled in the EIIP, Volume 3, Chapter 11, Gasoline Marketing (Stage 1 and Stage 2) http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii11_apr2001.pdf.

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

SCC: 2501060101 (uncontrolled), 2501060102 (controlled)

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

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

4. Calculate an emission factor using the input files supplied from the mobile model. Table 1 and Table 2 show examples of how the emission factors for January and July for the Southern Counties were calculated. By using these two months, the other months are distributed. Use the average of all months for the emission factor for the Southern counties. Use the same methodology for the Northern counties, Central Counties, Clark/Floyd, and Lake/Porter.

Table 1

January Run for Southern Counties

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

Table 2
July Run for Southern Counties

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

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

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

SCC: 2501060103

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

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

4. Apply the emission factor 0.7 lb VOC/1000 gallons in AP-42, Fifth Edition, Volume 1, Chapter 5, Petroleum Industry, Transportation, and Marketing of Petroleum Liquids http://www.epa.gov/ttn/chief/ap42/ch05/final/c05s02.pdf to the process rate found in step 4.

Sub-Category 4.6: Underground Tank Breathing

SCC: 2501060200

Follow these steps when calculating emissions from underground tank breathing:

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

4. Apply the emission factor 1.0 lb VOC/1000 gallons in AP-42, Fifth Edition, Volume 1, Chapter 5, Petroleum Industry, Transportation, and Marketing of Petroleum Liquids http://www.epa.gov/ttn/chief/ap42/ch05/final/c05s02.pdf to the process rate found in step 4.

Sub-Category 4.7: Tank Trucks in Transit

SCC: 2505030120

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

1. Find the amount of gasoline sold in Indiana at the Federal Highway Administration, U.S. Department of Transportation http://www.fhwa.dot.gov/policy/ohim/hs04/htm/mf21.htm.

2. Find the amount of gasoline sold statewide and by county using the NAICS code 447-Gasoline Service Station from the U.S. Census Bureau's, Economic Census at http://www.census.gov/econ/census02/data/in/IN000_44.HTM#N447.

3. Allocate the amount sold to each of the counties by dividing the amount of sales in each county by statewide sales and multiplying by the number of gallons sold statewide found above in step 1.

4. Using the guidance in the EIIP, Volume 3, Chapter 11, Gasoline Marketing (Stage I and State II) at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/iii11_apr2001.pdf), multiply the activity rate 1.25 by the amount sold per county found in step 4.

5. Now multiply the process rate found in step 5 by the emission factor .06 lb VOC/gallon transported using the EIIP guidance above.

Category 5: Waste Management Practices

Sub-Category 5.1: Solid Waste Incineration

5.1.1: Industrial Solid Waste Incineration

SCC: 2601010000

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

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

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

2. Multiply the county manufacturing employment by the default fuel-loading factor 420 tons / 1,000 manufacturing employees.

3. Multiply the process rate in step 2 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at http://www.epa.gov/ttn/chief/ap42/ch02/index.html.

5.1.2: Commercial Solid Waste Incineration

SCC: 2601020000

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

1. Find the population for each county at the U.S. Census Bureau's website http://www.census.gov/.

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

2. Next find the default factor of .65lb/person/day from U.S. EPA Municipal Solid Waste Report http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm.

3. Find the percent of commercial solid waste from the U.S. EPA Municipal Solid Waste Report above.

4. Now, calculate the process rate for commercial solid waste incineration by multiplying population by the default factor of .65lb/person/day by the percent of commercial solid waste and number of days in a year.

5. Multiply the process rate in step 4 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at http://www.epa.gov/ttn/chief/ap42/ch02/index.html.

5.1.3: Residential Solid Waste Incineration

SCC: 2601030000

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

1. Find the population for each county at the U.S. Census Bureau's website http://www.census.gov/.

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

2. Next find the default factor of .65lb/person/day from U.S. EPA Municipal Solid Waste Report http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm.

3. Find the percent of residential solid waste from the U.S. EPA Municipal Solid Waste Report above.

4. Now, calculate the process rate for residential solid waste incineration by multiplying population by the default factor of .65lb/person/day by the percent of commercial solid waste and number of days in a year.

5. Multiply the process rate in step 4 by AP-42, Fifth Edition, Volume 1, Chapter 2-1.12, Solid Waste Disposal at http://www.epa.gov/ttn/chief/ap42/ch02/index.html.

Sub-Category 5.2: Residential Open Burning

5.2.1: Leaf and Brush Burning

SCC: 2610000100 and 2610000400

Follow theses step when calculating emissions from leaf and brush burning:

1. Find a per capita factor for leaf burning and a per capita for brush burning by using the U.S. EPA's Solid Waste Report at http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm.

2. Allocate the amount burned by adjusting the per capita factor for leaves at 25% and for brush at 25%. Of the total waste generated only 28% burns.

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

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

   a. Go to http://www.census.gov/
   b. On the left hand side, select American Fact Finder
   c. Select data sets
   d. Detailed tables
   e. County
   f. Indiana
   g. All counties

4 Use the table below to adjust the amount of waste generated to account for the percentage of forest in each county. The percentages come from a document from the United States Department of Agriculture at http://ncrs.fs.fed.us/pubs/rb/rb_nc253b.pdf.

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

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

5.2.2: Residential Waste Incineration

SCC: 2610030000

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

1. Find a per capita factor for residential waste incineration by using the U.S. EPA's Solid Waste Report at http://www.epa.gov/epaoswer/non-hw/muncpl/pubs/mswchar05.pdf.

2. Using the Solid Waste Report above, subtract the percentage of recycled and composted material from the per capita factor above.

3. Now, subtract the percentages of combustibles i.e. glass, metal, yard trimmings, and other waste.

4. Using a document from EPA, it states that only 28% of waste generated by rural population burns and of that percent, 49% is actually combusted. Using this information multiply the per capita factor by 0.28 and then multiply that number by 0.49 actually burned in rural counties.

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

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

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

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

SCC: 2630020000

Follow these steps when calculating emissions from POTW's:

1. To calculate the amount of annual flow for public owned treatment works, obtain the amount of monthly flow rate for each county. This is data is supplied by the Office of Water Quality. To calculate for annual flow multiply the monthly flow by the default of 0.16 that represents the amount of industrial flow.

2. Calculate the process rate above by the emission factors in FIRE 6.25 using the SCC code 2630020000.

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

SCC: 2640000004

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

1. Obtain a list of treatment facilities and the amount of ignitable waste from each facility from IDEM's Office of Land Quality.

2. Using the list of facilities from step 1, run a query using the ACCESS data tables at K:\OAQ_INV\Steptool\Stptl_02.mdb to obtain the amount of ignitable waste reported to IDEM's Office of Air Quality.

3. Compare the two lists obtained in step 1 and step 2, for each facility subtract any quantity reported to OAQ from the quantity reported to OLQ. Do this in order to avoid double counting quantities reported to both offices. Combine the quantities reported from facilities within the same counties. Use these quantities as the process rate for each county.

4. Multiply the process rate above with the combined emission factor in the table below:

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

Category 6: Submit Data to EPA

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

6. Standards and checklists

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

7. Records Management

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

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

8. Quality Assurance / Quality Control
Comparisons are made against the emissions estimates made by The U.S. EPA in the NEI.

9. Continuous Improvement Cycle
A periodic review will be completed per updates and changes made to the EIIP.

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

11. History of Revisions

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

12. Appendices
None