

Louisville Metro Air Pollution Control District

PM_{2.5} Monitoring Report

May 2008

This report summarizes PM_{2.5} data collected by Federal Reference Method (FRM) samplers through May 2008. The data are subject to further quality assurance checks and are not final. Table 1 is a summary of the samples collected in January. Table 2 are monthly averages of PM_{2.5} concentrations from 1999-2008.

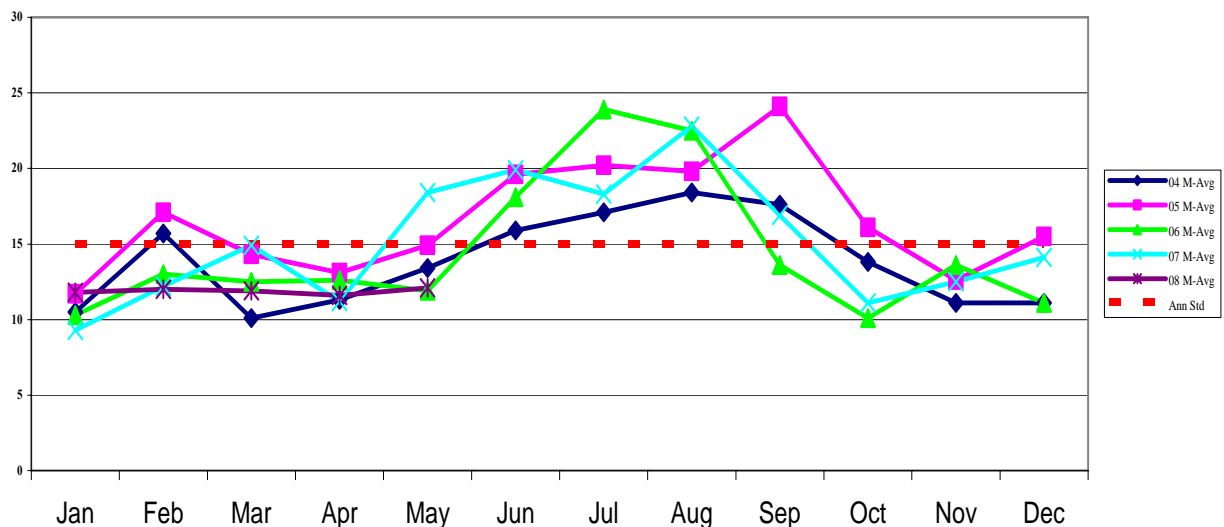
Table 1: PM_{2.5} Monthly Data Summary for May 2008 (µg/m³)

<u>Site Name</u>	<u>Daily Maximum Conc. & Date</u>	<u>Daily Minimum Conc. & Date</u>	<u>Sample Recovery</u>	<u>Monthly Average</u>
Southwick	20.1 (05/30)	6.1 (05/16)	100.0 %	11.4
Wyandotte	21.4 (05/30)	5.4 (05/11)	93.5 %	11.2
Barret	18.8 (05/30)	6.9 (05/12)	100.0 %	11.9
Watson	17.8 (05/30)	8.0 (05/11)	80.0 %	13.9
Overall	21.4 (05/30)	5.4 (05/11)	93.4%	12.1

Table 2: PM_{2.5} Monthly Averages Tracking Table for 1999-2008

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months >15.0 µg/m³
Ann Std	15	15	15	15	15	15	15	15	15	15	15	15	
99 M-Avg	14.7	13.8	12.4	12.7	18.1	23.4	26.6	19.5	15.6	17.4	16.1	12.6	7
00 M-Avg	15.8	16.4	13.4	13.6	17.1	17.7	23.5	21.2	13.3	19.7	15.6	17.1	9
01 M-Avg	21.9	13.9	15.2	13.3	17.7	20.5	24.6	27.4	16.1	13.8	15.8	12.4	8
02 M-Avg	13.1	10	12.3	11.4	15.9	22.3	30.4	23.8	21.7	13.2	11.8	15.6	6
03 M-Avg	12.2	16.3	15	14.6	13.1	18.6	21.7	23	17.3	12.5	12	10.6	5
04 M-Avg	10.5	15.7	10.1	11.3	13.4	15.9	17.1	18.4	17.6	13.8	11.1	11.1	5
05 M-Avg	11.7	17.1	14.3	13.1	14.9	19.6	20.2	19.8	24.1	16.1	12.6	15.5	7
06 M-Avg	10.3	13.0	12.5	12.6	11.9	18.1	23.9	22.5	13.6	10.1	13.6	11.1	3
07 M-Avg	9.3	12.2	14.9	11.2	18.4	19.9	18.3	22.8	16.9	11.1	12.5	14.1	5
08 M-Avg	11.8	12.0	11.9	11.6	12.1								0

Chart 1: PM_{2.5} Monthly Averages Trends



National Ambient Air Quality Standards (NAAQS):

National Ambient Air Quality Standards consists of Primary and Secondary Standards. The Primary Standards define levels of air quality which EPA judges are necessary, with an adequate margin of safety, to protect the public health. The Secondary Standards define levels of air quality which EPA judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. For PM_{2.5} the levels of the Primary and Secondary Standards are the same.

Annual Standard:

The annual standard is designed to provide an appropriate level of protection from long-term exposures to PM_{2.5}. Table 3 compares data collected from 2002 through year-to-date 2008 to the Annual National Ambient Air Quality Standard for PM_{2.5}. The Annual National Ambient Air Quality Standard for PM_{2.5} is met when the annual design value is less than or equal to 15.0 µg/m³. The design value is based on 3 consecutive, complete years of air quality data and is calculated by taking the 3-year average of annual means.

Table 3: PM_{2.5} Annual Means and Annual Design Values

Site Name	Annual Means µg/m ³							Annual Design Values 2002-2004	Annual Design Values 2003-2005	Annual Design Values 2004-2006	Annual Design Values 2005-2007	Annual Design Values 2006-2008
	2002	2003	2004	2005	2006	2007	2008 ¹					
Southwick	17.2	16.0	14.5	16.6	14.9	15.1	12.0	15.9	15.7	15.3	15.5	14.0
Wyandotte	17.5	15.4	14.0	16.4	15.1	14.9	11.9	15.7	15.3	15.3	15.5	14.0
Barret	16.4	15.5	13.7	16.7	13.9	15.1	11.7	15.2	15.3	14.8	15.2	13.6
Watson	15.7	14.9	12.6	16.4	13.4	15.7	11.8	14.4	14.7	14.1	14.8	13.6

BOLD: Design value site for Jefferson County. ¹Year-to-date data for 2008.

24-Hour Standard:

The 24-Hour standard is designed to provide an appropriate level of protection from short-term exposures to PM_{2.5}. Table 4 compares data collected from 2002 through year-to-date 2008 to the 24-Hour National Ambient Air Quality Standard for PM_{2.5}. In December 2006 the EPA changed the 24-hour standard from 65µg/m³ to 35µg/m³. The standard is met when the 24-Hour design value is less than or equal to 35µg/m³. The design value is based on 3 consecutive, complete years of air quality data and is calculated by taking the average of the 98th percentile value for each of the 3 years. The 98th percentile is the daily value out of a year of PM_{2.5} monitoring data below which 98 percent of all daily values fall.

Table 4: PM_{2.5} Annual 98th Percentiles and 24-Hour Design Values

Site Name	Annual 98 th Percentile Value. µg/m ³							24-Hour Design Values 2002-2004	24-Hour Design Values 2003-2005	24-Hour Design Values 2004-2006	24-Hour Design Values 2005-2007	24-Hour Design Values 2006-2008
	2002	2003	2004	2005	2006	2007	2008 ¹					
Southwick	46.5	36.3	30.6	42.9	36.0	34.1	23.0	37.8	36.6	36.5	37.7	31.0
Wyandotte	45.4	37.9	30.6	40.1	36.3	33.7	22.3	38.0	36.2	35.7	36.7	30.8
Barret	44.7	35.5	28.8	43.2	36.7	37.2	22.7	36.3	35.8	36.2	39.0	32.2
Watson	30.5	33.0	25.8	36.5	28.4	36.3	20.1	29.8	31.8	30.2	33.7	28.3

BOLD: Design Value site for Jefferson County. ¹Year-to-date data for 2008.

In 2007 the District submitted exceptional events demonstrations to EPA indicating that certain monitoring data collected in 2004-2007 were flagged under the exceptional event rule. In May 2008 EPA completed their review of the 2004-2006 exceptional events demonstrations and table 3 and 4 were adjusted based on that review. EPA has not concluded their review of the 2007 exceptional events demonstrations and that data is subject to change.

Louisville Metro Air Pollution Control District

8-Hr Ozone Monitoring Report

May 2008

This report summarizes ozone data measured by Automated Equivalent Method (AEM) samplers located within the Louisville Metropolitan Statistical Area through May 2008. The data are subject to further quality assurance checks and are not final.

Table 1: 2008 8-Hr Ozone Monitoring Summary Report

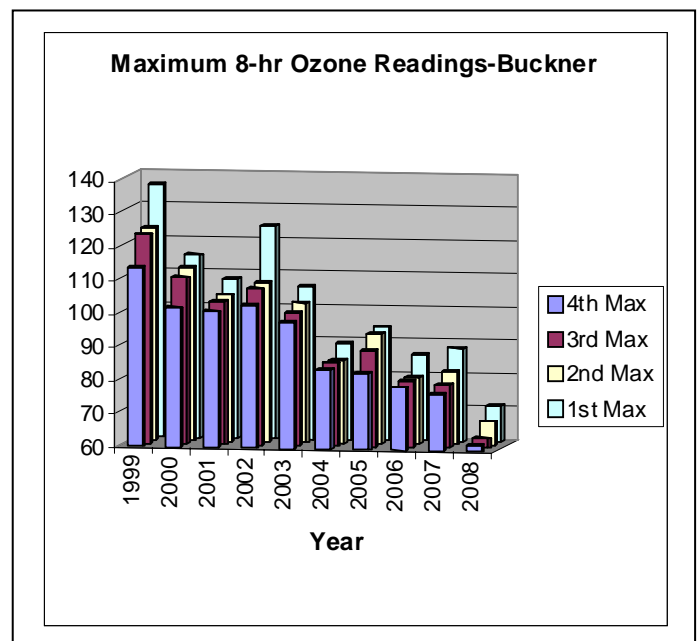
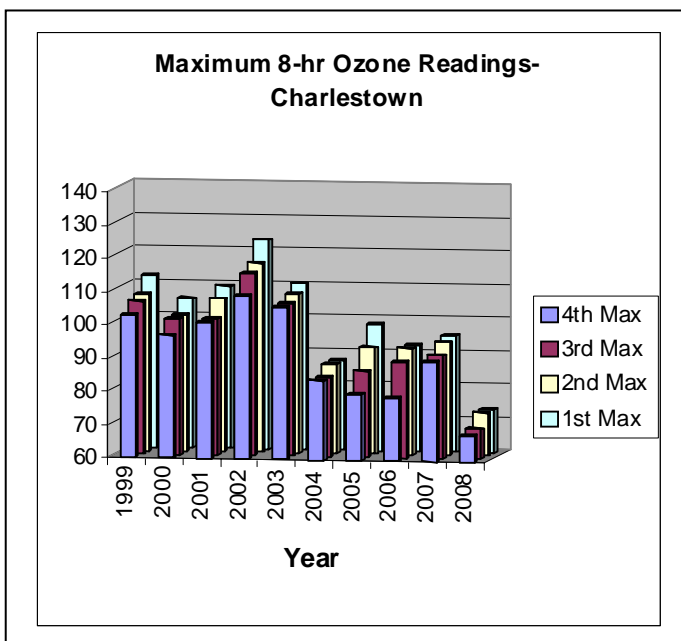
			Charlestown (CH)	New Albany (NA)	Bates (BA)	Watson (WS)	WLKY-TV (WK)	Buckner (BK)	Shepherds- ville (SH)		
Date	# of 8-Hour Exceeds	# of Days with Exceeds	Clark Co. IN	Floyd Co. IN	Jefferson Co. KY	Jefferson Co. KY	Jefferson Co. KY	Oldham Co. KY	Bullitt Co. KY	FCST AQI/ Max. ppb	# AQA
4/16/08	0	0	65	52	62	58	59	58	<u>63</u>	49/65	0
4/17/08	0	0	73	61	71	64	65	67	72	40/73	0
4/18/08	0	0	63	53	ND	56	57	56	61	30/63	0
4/21/08	0	0	60	52	57	58	53	53	55	54/60	0
4/22/08	0	0	<u>68</u>	62	ND	<u>61</u>	63	60	60	58/68	0
4/23/08	0	0	73	64	57	69	61	<u>62</u>	62	54/73	0
4/24/08	0	0	64	48	59	59	55	57	59	51/64	0
5/1/08	0	0	69	59	65	58	<u>63</u>	63	68	54/69	0
5/6/08	0	0	65	<u>62</u>	<u>64</u>	59	61	37	65	52/65	0
5/29/08	1	1	ND	67	67	83	67	71	63	47/83	0
Totals	1	1	0	0	0	1	0	0	0		0

Values in Bold exceed the 2008 ozone standard (values >75 ppb)

Underlined values are the 4th highest values recorded at each site

#AQA is the number of Air Quality Alerts Issued (Air Quality Index in the Unhealthy for Sensitive Groups Range or Higher)

ND=No data available

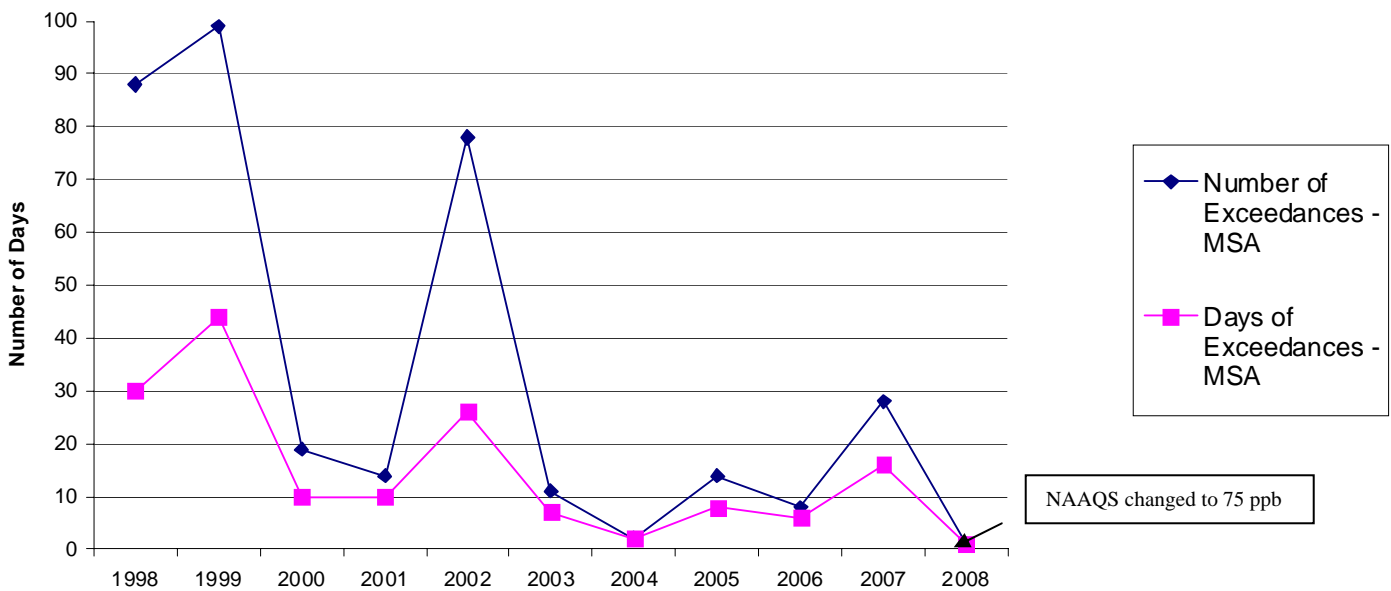


8-Hour Ozone Exceedances: An ozone exceedance occurs when the highest 8-hour average for each day is greater than the National Ambient Air Quality Standard (NAAQS). For 1998-2007 the NAAQS was 85 ppb and the exceedances reported are based on that standard. In 2008 the NAAQS was changed to 75 ppb and the exceedances reported for 2008 are based on the new standard.

Table 2: 1998 – 2008 8-Hour Ozone Exceedance Summary

Year	Charlestown (CH)	New Albany (NA)	Bates (BA)	Watson (WS)	WLKY-TV (WK)	Buckner (BK)	Shepherds-ville (SH)	Louisville MSA Total		Jefferson County Total	
								Exceedances	Days	Exceedances	Days
1998	22	14	10	11	7	12	12	88	30	28	15
1999	11	10	16	13	4	34	11	99	44	33	22
2000	4	0	5	1	3	4	2	19	10	9	6
2001	4	0	2	1	1	4	2	14	10	4	3
2002	17	13	4	15	7	12	10	78	26	26	19
2003	4	4	1	0	0	2	0	11	7	1	1
2004	0	0	1	0	0	0	1	2	2	1	1
2005	3	2	0	4	1	4	0	14	8	5	4
2006	3	1	0	1	0	3	0	8	6	1	1
2007	8	3	8	4	2	3	0	28	16	14	11
2008	0	0	0	1	0	0	0	1	1	1	1

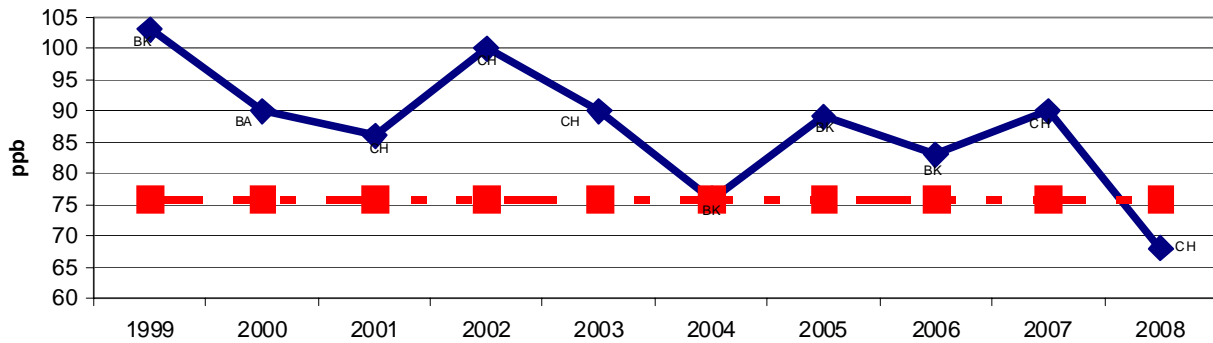
Historical Graph of 8-Hour Ozone Exceedances



**Table 3: 1999-2008
8-Hour Ozone 4th Maximums**

Year	Louisville MSA	Charlestown (CH)	New Albany (NA)	Bates (BA)	Watson (WS)	WLKY-TV (WK)	Buckner (BK)	Shepherdsville (SH)
1999	103	89	94	97	100	86	103	93
2000	90	85	77	90	76	84	85	82
2001	86	86	76	81	81	77	86	82
2002	100	100	97	85	96	88	91	91
2003	90	90	86	72	75	73	82	72
2004	76	74	71	70	70	68	76	68
2005	89	80	80	79	85	74	89	80
2006	83	79	76	74	77	67	83	71
2007	90	90	82	86	85	79	84	78
2008	68	68	62	64	61	63	62	63

**8-Hour Ozone Annual 4th Maximum Readings
for Louisville MSA**



8-Hr NAAQS: Attainment of the new 8-Hour Ozone National Ambient Air Quality Standard at an individual monitor is achieved when the three-year average of the annual fourth-highest daily maximum (4th maximum) 8-hr average ozone concentration is less than 76 ppb. This three-year average is the design value for that monitor.

**Table 4: 8-Hour
Ozone Design Value Summary**

Year	Louisville MSA	Charlestown (CH)	New Albany (NA)	Bates (BA)	Watson (WS)	WLKY-TV (WK)	Buckner (BK)	Shepherdsville (SH)
99-01 Avg.	91 BK	86	82	89	85	82	91	85
00-02 Avg.	90 CH	90	83	85	84	83	87	85
01-03 Avg.	92 CH	92	86	77	84	79	86	81
02-04 Avg.	88 CH	88	84	74	80	76	82	77
03-05 Avg.	82 BK	81	79	73	76	71	82	73
04-06 Avg.	82 BK	77	75	72	77	69	82	73
05-07 Avg.	85 BK	83	79	79	82	73	85	76
06-08 Avg.	79 CH	79	73	74	74	69	76	70

Bold –Design Value Sites for respective periods.

**8-Hour Ozone Design Value Trend Chart
for Louisville MSA
Using the 2008 Standard as the Trend Line**

