

# INTEROFFICE MEMORANDUM

To: Arthur L. Williams, Director  
 From: Larry Garrison, Air Monitoring Section Supervisor  
 Date: November 8, 2007  
 Re: October 2007 FRM PM<sub>2.5</sub> Monitoring Update Report

This report summarizes Federal Reference Method PM<sub>2.5</sub> monthly averages, annual averages, and 3-year annual design values through October 2007. (These data are subject to further quality assurance and are not final.)

## October 2007

**Table 1. PM<sub>2.5</sub> Monthly Data Summary (µg/m<sup>3</sup>)**

	Daily Maximum	Daily Minimum		Monthly
Site Name	Conc. & Date	Conc. & Date	Run Time	Average
Southwick	22.0 (10/08)	3.8 (10/23)	96.8 %	11.6
Wyandotte	22.1 (10/08)	2.3 (10/23)	96.8 %	11.0
Barret	18.3 (10/04)	4.6 (10/24)	100.0 %	10.5
Watson	15.7 (10/03)	7.8 (10/09)	100.0 %	11.3
<b>Overall</b>				<b>11.1</b>

The 24-hour average standard is 35 µg/m<sup>3</sup>. Ref: 40 CFR Part 50, National Ambient Air Quality Standards for Particulate Matter.

**Table 2. PM<sub>2.5</sub> Design Values and Annual Mean Comparisons**

Site Name	Annual Mean (ug/m <sup>3</sup> )							Annual Design Values (2001-2003)	Annual Design Values (2002-2004)	Annual Design Values (2003-2005)	Annual Design Values (2004-2006)	Annual Design Values (2005-2007) <sup>3</sup>
	2007 <sup>3</sup>	2006	2005	2004	2003	2002	2001					
Southwick/ <i>Firearms Trn</i> <sup>1</sup>	14.8	15.0	16.7	14.5	16.0	17.2	17.1/ 18.7 <sup>1</sup>	N/A	15.9 <sup>2</sup>	15.7 <sup>2</sup>	15.4 <sup>2</sup>	15.5 <sup>2</sup>
Wyandotte	14.5	15.2	16.5	14.1	15.4	17.5	17.7	16.9 <sup>2</sup>	15.7	15.3	15.3	15.4
Barret	14.7	14.0	16.8	13.7	15.5	16.4	16.9	16.3	15.2	15.3	14.8	15.2
Watson	15.3	13.7	16.5	12.6	14.9	15.7	16.3	15.6	14.4	14.7	14.3	15.2

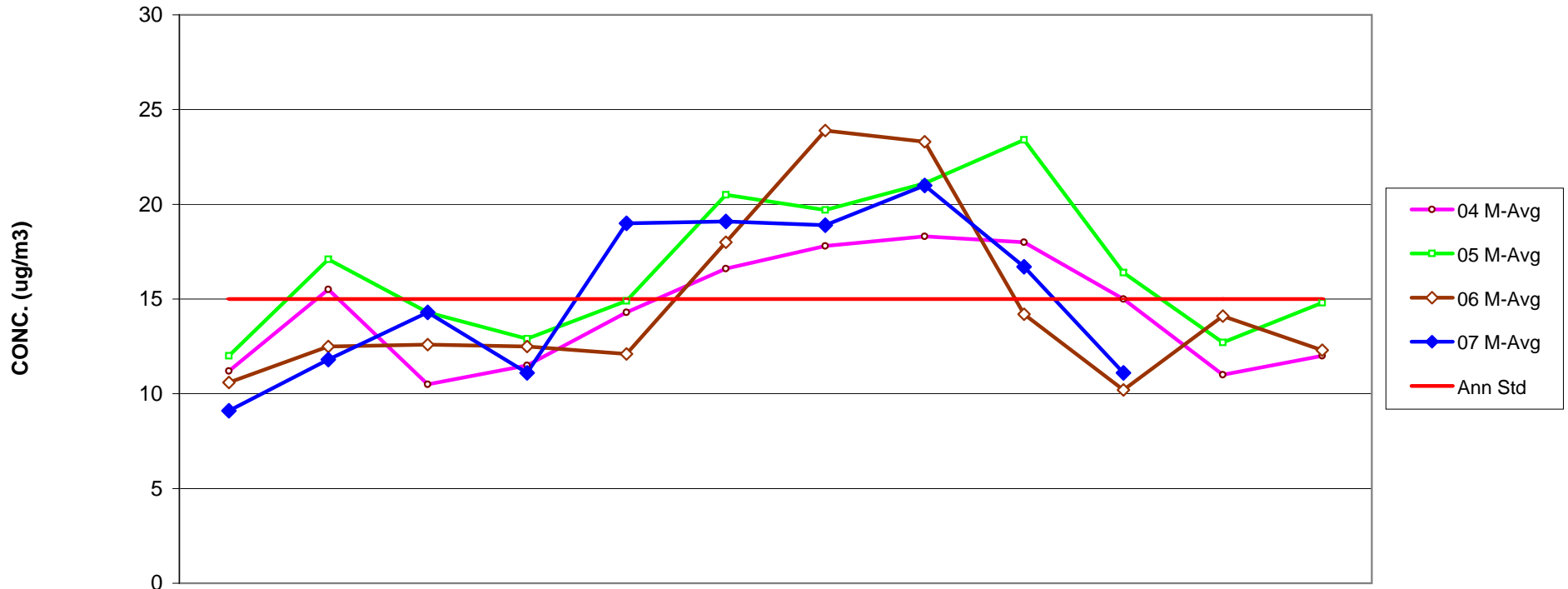
The annual average standard is 15.0 µg/m<sup>3</sup>.

<sup>1</sup> *Firearms Training* temporarily replaced Southwick Community Center monitoring during 2001, due to renovation. Twelve quarters of contiguous data are unavailable. <sup>2</sup> Design value site for Louisville. <sup>3</sup> Year-to-date data for 2007.

**Table 3. Louisville Metro FRM PM<sub>2.5</sub> Monthly Averages Tracking Table for 1999-2007**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months > 15.0 ug/m <sup>3</sup>
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	11.2	15.5	10.5	11.5	14.3	16.6	17.8	18.3	18	15	11	12	5
05 M-Avg	12	17.1	14.3	12.9	14.9	20.5	19.7	21.1	23.4	16.4	12.7	14.8	6
06 M-Avg	10.6	12.5	12.6	12.5	12.1	18	23.9	23.3	14.2	10.2	14.1	12.3	3
07 M-Avg	9.1	11.8	14.2	11.1	19	19.1	18.9	21.0	16.7	11.1			5

LOUISVILLE METRO FRM PM<sub>2.5</sub> MONTHLY AVERAGES TRENDS FOR 2004- 2007



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
○ 04 M-Avg	11.2	15.5	10.5	11.5	14.3	16.6	17.8	18.3	18	15	11	12
□ 05 M-Avg	12	17.1	14.3	12.9	14.9	20.5	19.7	21.1	23.4	16.4	12.7	14.8
◇ 06 M-Avg	10.6	12.5	12.6	12.5	12.1	18	23.9	23.3	14.2	10.2	14.1	12.3
◆ 07 M-Avg	9.1	11.8	14.3	11.1	19	19.1	18.9	21	16.7	11.1		
— Ann Std	15	15	15	15	15	15	15	15	15	15	15	15

MONTH

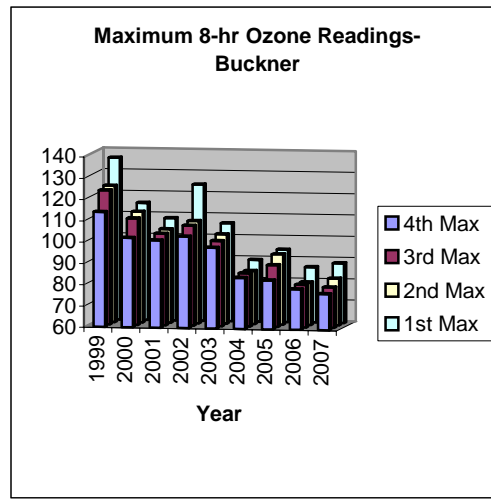
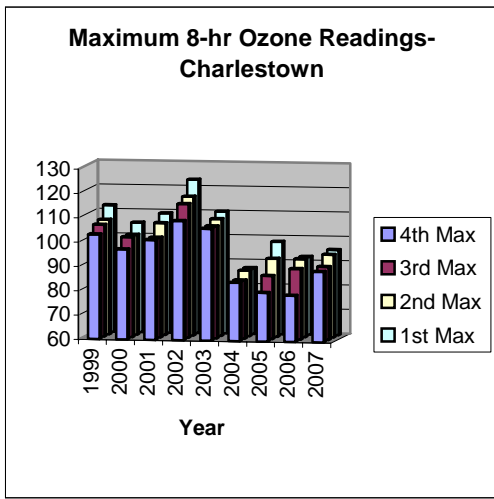
# 8-Hr Ozone Monitoring Report For Louisville MSA November 2007

*(Data are not quality assured)*

**Table 1: 2007 8-Hr Ozone Monitoring Summary Report**

8-Hour				Charlestown (CH)	New Albany (NA)	Bates (BA)	Watson (WS)	WLKY-TV (WK)	Buckner (BK)	Shepherdsville (SH)	
FCST AQI / Max. ppb	# 8-Hour Exceedances	# of Days with Exceedances	Date	Clark Co. IN	Floyd Co. IN	Jefferson Co. KY	Jefferson Co. KY	Jefferson Co. KY	Oldham Co. KY	Bullitt Co. KY	# AQA
	1	1	5/21/07	<b>90</b>	76	78	76	78	83	77	
111 / 85	1	1	5/22/07	<b>85</b>	76	76	79	77	77	78	1
111 / 78			5/23/07	78	66	70	65	66	73	69	2
105 / 73			5/24/07	73	60	70	65	63	73	69	3
106 / 68			5/30/07	68	59	59	62	63	67	59	4
	2	1	6/12/07	<b>87</b>	84	77	<b>85</b>	78	<u>84</u>	76	
103 / 84			6/13/07	84	78	76	82	75	82	76	5
103 / 73			6/14/07	69	63	57	73	61	67	55	6
127/88	2	1	6/17/07	82	79	<b>85</b>	75	<u>79</u>	<b>88</b>	78	7
105/72			6/18/07	70	58	64	57	59	72	58	8
	1	1	7/3/07	<b>94</b>	77	69	65	76	78	67	
111/71			7/7/07	63	60	69	71	66	64	64	9
114/86	1	1	7/8/07	67	62	<b>86</b>	72	69	72	64	10
104/78			7/9/07	74	66	69	61	62	78	62	11
104/89	1	1	8/1/07	72	74	70	<b>89</b>	71	67	65	12
135/98	3	1	8/2/07	68	<b>95</b>	<b>93</b>	72	<b>98</b>	73	63	13
120/82			8/3/07	59	64	81	74	74	69	82	14
119/86	1	1	8/4/07	<b>86</b>	73	72	64	71	79	62	15
	1	1	8/12/07	*	*	75	<b>88</b>	74	64	<u>78</u>	
109/68			8/13/07	67	65	67	42	60	66	68	16
			8/14/07	*	72	72	84	64	60	67	
	2	1	8/15/07	*	74	<b>85</b>	71	75	<b>86</b>	69	
	1	1	8/28/07	<b>95</b>	68	78	70	83	80	64	
103/70			8/29/07	68	61	61	64	53	70	53	17
	1	1	9/3/07	74	72	<b>85</b>	74	72	70	64	
107/95	4	1	9/4/07	<b>89</b>	<b>95</b>	<b>87</b>	83	<b>87</b>	80	68	18
109/83			9/5/07	83	74	73	74	74	73	60	19
	2	1	9/19/07	*	77	<b>86</b>	65	78	<b>86</b>	61	
104/87	2	1	9/20/07	*	<u>80</u>	<b>87</b>	<b>85</b>	74	81	72	20
101/77			9/22/07	*	60	58	53	61	77	45	21
106/61			9/23/07	*	61	50	50	55	61	40	22
Totals	26	16		7	2	8	4	2	3	0	

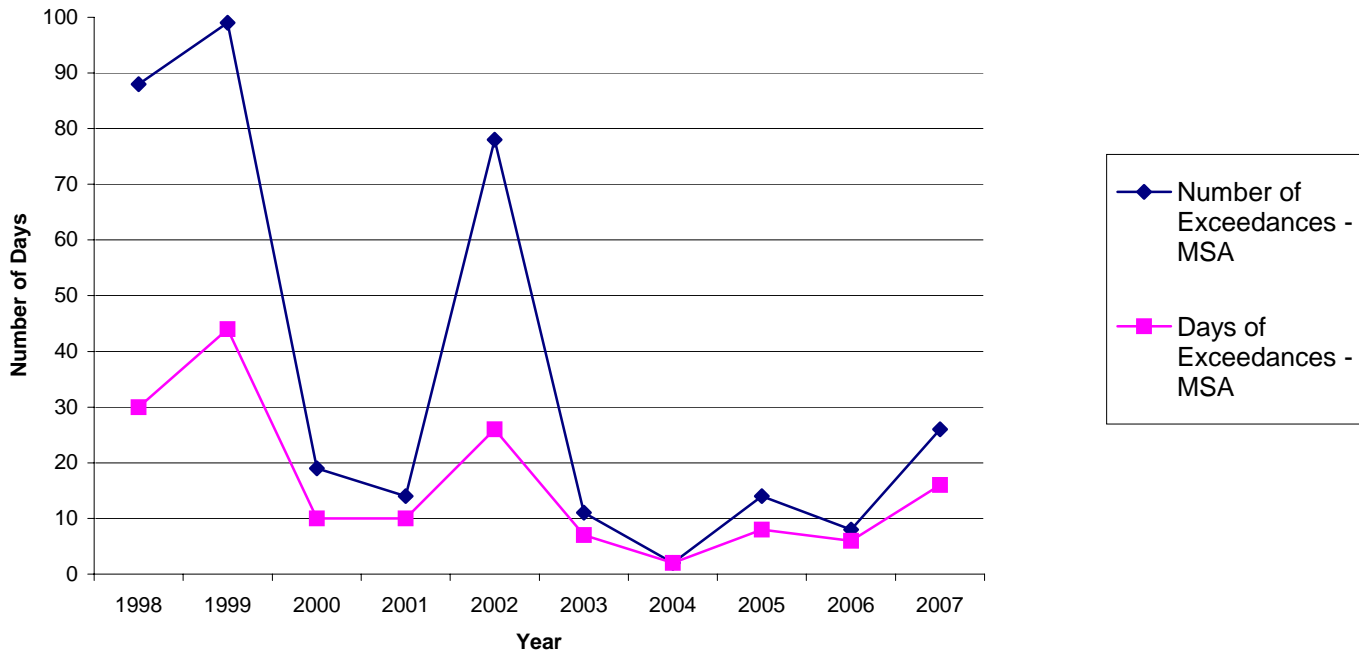
Notes: An 8-hour average of 85 ppb or greater exceeds the new ozone standard. AQA: Air Quality Alert. FCST – Forecast. Bold –greater than 84 ppb. Underline-4<sup>th</sup> max. \*Have not received data.



**Table 2: 1998 – 2007 8-Hour Ozone Exceedance Summary**

Year	Charlestown	New Albany	Bates	Watson	WLKY-TV	Buckner	Shep.	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	7	2	8	4	2	3	0	26	16	14	11

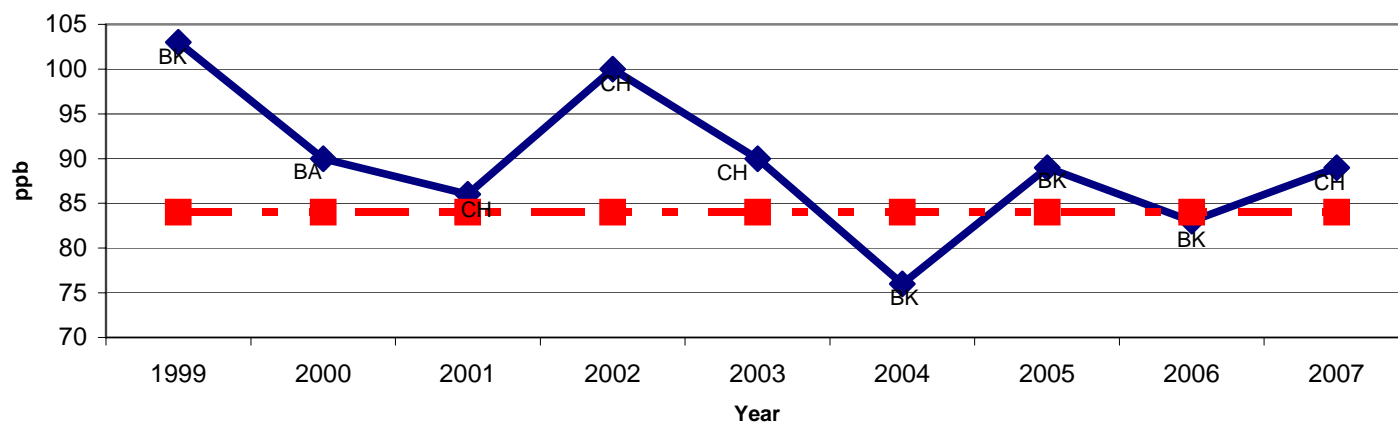
**Historical Graph of 8-Hour Ozone Exceedances**



**Table 3: 1999-2007 8-Hour Ozone 4<sup>th</sup> Maximum**

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

**8-Hour Ozone Annual 4<sup>th</sup> Maximum Reading for Louisville MSA**



**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)
05-07 Avg.	<b>85 BK</b>	82	78	79	82	73	<b>85</b>	76
04-06 Avg.	<b>82 BK</b>	77	75	72	77	69	82	73
03-05 Avg.	<b>82 BK</b>	81	79	73	76	71	82	73
02-04 Avg.	<b>88 CH</b>	88	84	74	80	76	82	77
01-03 Avg.	<b>92 CH</b>	92	86	77	84	79	86	81
00-02 Avg.	<b>90 CH</b>	90	83	85	84	83	87	85
99-01 Avg.	<b>91 BK</b>	86	82	89	85	82	91	85

Bold –Design Value Sites for respective periods.

**8-Hr NAAQS:** Attainment of the 8-Hr Ozone National Ambient Air Quality Standard (NAAQS) at an individual monitor is achieved when the three-year average of the annual fourth-highest daily maximum (4<sup>th</sup> maximum) 8-hr average ozone concentration is less than or equal to 84 ppb. This three-year average is the design value for that monitor.

## 8-Hour Ozone Design Value Trend for Louisville MSA

