600 Broadway, Suite 200
Kansas City, Missouri 64105-1659

816/474-4240
816/421-7758 FAX
www.marc.org

MARC
Mid-America Regional Council

2011 Ozone Season Report for the Kansas City Region

Summary

From April 1 – October 31, 2011 in the Kansas City region:

- MARC issued 63 yellow SkyCasts and 9 Orange Ozone Alerts.
- Eight-hour ozone concentrations have exceeded the 75 part-per-billion (ppb) standard on 14 days within our Air Quality Maintenance Area.

Reconsideration of the 2008 Ozone National Ambient Air Quality Standards

On March 12, 2008, the U.S. Environmental Protection Agency issued a final rulemaking revising national standards for ground-level ozone. The new primary, or health-based, standard was designated as 75 ppb averaged over eight hours replacing the previous standard of 84 ppb. The 84-ppb standard was expected to remain in place until mid-2011at which point the new standard would become official. In the meantime, EPA requested that air quality forecasting programs begin to issue forecasts consistent with the 2008 standard.

Under the 2008 rulemaking, EPA provided an updated Air Quality Index (AQI) – a public information tool that associates colors and health messages with ranges of air pollutant concentrations – to reflect the standard. Table 1 shows the ozone concentrations associated with each AQI color under the 2008 standards.

Table 1. Air Quality Index under the 2008 Ozone Standards

Category	AQI Value	2008 8-hour ozone (ppb)
Good (Green)	0 – 50	0 - 59
Moderate (Yellow)	51 – 100	60 - 75
Unhealthy for Sensitive Groups (Orange)	101 – 150	76 - 95
Unhealthy (Red)	151 - 200	96 - 115
Very Unhealthy (Purple)	201 - 300	116 - 374
Hazardous (Maroon)	301 – 500	> 374

In September 2009, the EPA announced reconsideration of the 2008 standard for ground-level ozone and indicated in December 2010 that a new standard between 60-70 ppb would be appropriate. However, on September 2, 2011 President Obama requested that the draft ozone standard be withdrawn. This request was based on concerns that stricter regulatory requirements could pose an economic burden on the currently struggling economy and that the next required review of the ozone standard is already scheduled for 2013.

To ensure consistency with forecasting efforts nationally and comply with the most current recognized standard, MARC will use the 2008 standard of 75 ppb – as issued in EPA's final 2008 rulemaking – and issue Ozone

Alerts this summer whenever ozone concentrations are expected to exceed 75 ppb averaged over eight hours. Eight ozone monitors in the region (including those at Leavenworth and Trimble) are used to verify forecasts in 2011, and forecast verification will be based on the 2008 standard AQI.

2011 Ozone Data & SkyCasts

Table 2, on the next two pages, summarizes SkyCasts and eight-hour monitored ozone readings for the 2011 ozone season. The table lists days that were forecasted to be a yellow or Ozone Alert day *or* had a maximum eight-hour ozone reading greater than or equal to 60 ppb. *Green SkyCast days with maximum eight-hour ozone values less than 60 ppb—days that were accurately forecasted to be green—will not be listed.* The SkyCast categories are defined as follows: green corresponds to eight-hour ozone values less than 60 ppb, yellow is from 60 ppb to 75 ppb, and Ozone Alert is 76 ppb and above (orange is 76 - 95 ppb and red is 96 - 115 ppb).

Table 2. Summary of 2011 SkyCasts and Daily Maximum Eight-hour Ozone Values

April 1 – October 31, 2011

Date	Daily Max 8-Hr Value (ppb)*	Monitor(s) Recording Max Value	SkyCast	Date	Daily Max 8-Hr Value (ppb)*	Monitor(s) Recording Max Value	SkyCast
4/3	60	Liberty	Yellow	5/22	54	Liberty, Watkins Mill	Yellow
4/6	70	Richards Gebaur	Green	5/30	44	Liberty, Watkins Mill, Rocky Creek	Yellow
4/9	51	Watkins Mill, Rocky Creek	Yellow	6/1	59	Rocky Creek	Yellow
4/12	63	Watkins Mill	Yellow	6/3	63	Liberty	Green
4/13	**76**	Watkins Mill	Yellow	6/4	67	Liberty	Yellow
4/14	69	Watkins Mill	Green	6/5	61	Liberty	Yellow
4/17	61	Richards Gebaur	Yellow	6/6	71	Liberty	Orange
4/29	62	Watkins Mill	Green	6/7	75	Rocky Creek	Yellow
4/30	60	Liberty & Watkins Mill	Green	6/8	72	Liberty, Rocky Creek	Yellow
5/6	53	Heritage Park	Yellow	6/9	60	Rocky Creek	Yellow
5/7	64	Richards Gebaur	Yellow	6/14	49	Richards Gebaur	Yellow
5/8	60	Watkins Mill	Green	6/18	69	Rocky Creek	Green
5/9	58	Watkins Mill	Yellow	6/19	48	Rocky Creek	Yellow
5/10	62	Watkins Mill	Yellow	6/29	62	Rocky Creek	Yellow
5/17	60	Watkins Mill	Green	6/30	67	Watkins Mill, Rocky Creek	Yellow
5/21	56	Rocky Creek	Yellow	7/1	64	Rocky Creek	Yellow

*The 2011 eight-hour monitored ozone readings have not been quality assured and may contain errors. Readings in **bold** represent eight-hour peak concentrations above the 75 ppb standard.

Table 2 (Continued). Summary of 2011 SkyCasts and Daily Maximum Eight-hour Ozone Values

April 1 – October 31, 2011

7/2	72	Heritage Park	Yellow	8/4	65	Liberty	Green
7/4	55	Heritage Park	Yellow	8/5	68	Rocky Creek	Green
7/5	55	Heritage Park	Yellow	8/6	71	Rocky Creek	Yellow
7/7	62	Richards Gebaur, Heritage Park	Green	8/7	63	Liberty	Yellow
7/9	56	Rocky Creek	Yellow	8/9	62	Richards Gebaur	Yellow
7/10	**78**	Liberty	Yellow	8/11	60	Heritage Park	Green
7/11	**78**	Rocky Creek	Orange	8/14	62	Heritage Park	Yellow
7/12	**78**	Liberty	Yellow	8/15	36	Heritage Park	Yellow
7/13	53	Richards Gebaur, Heritage Park	Yellow	8/17	65	Heritage Park	Green
7/15	58	Rocky Creek	Yellow	8/18	61	Rocky Creek	Yellow
7/16	61	Rocky Creek	Yellow	8/19	62	Heritage Park	Green
7/17	71	Rocky Creek	Yellow	8/21	65	Richards Gebaur	Yellow
7/18	**78**	Rocky Creek	Orange	8/22	56	Rocky Creek	Yellow
7/19	71	Liberty	Orange	8/23	68	Rocky Creek	Yellow
7/20	60	Watkins Mill	Yellow	8/24	65	Richards Gebaur	Yellow
7/21	75	Rocky Creek	Yellow	8/26	73	Rocky Creek	Yellow
7/22	**80**	Watkins Mill	Yellow	8/27	**80**	Heritage Park	Yellow
7/23	70	Watkins Mill	Orange	8/28	45	Heritage Park	Yellow
7/24	54	Richards Gebaur, Heritage Park	Yellow	8/31	**92**	Watkins Mill	Orange
7/25	**90**	Heritage Park	Yellow	9/1	**77**	Liberty, Watkins Mill	Yellow
7/26	70	Rocky Creek	Yellow	9/2	**94**	Watkins Mill	Orange
7/27	69	Rocky Creek	Yellow	9/3	57	Liberty	Yellow
7/28	**89**	Liberty	Yellow	9/11	59	Richards Gebaur	Yellow
7/29	73	Heritage park	Yellow	9/12	58	Rocky Creek	Yellow
7/30	73	Rocky Creek	Yellow	10/3	61	Rocky Creek	Green
7/31	71	Heritage Park	Yellow	10/4	73	Watkins Mill Rocky Creek	Yellow
8/1	**79**	Rocky Creek	Orange	10/5	**76**	Watkins Mill	Yellow
8/2	70	Watkins Mill	Orange	10/6	63	Liberty Watkins Mill	Green
8/3	68	Heritage Park	Green	10/23	62	Richards Gebaur	Green

*The 2011 eight-hour monitored ozone readings have not been quality assured and may contain errors. Readings in **bold** represent eight-hour peak concentrations above the 75 ppb standard.

Table 3 lists area monitors that have recorded eight-hour peak values exceeding the 75 ppb standard and the dates on which the exceedances occurred.

Table 3. Eight-Hour Ozone Exceedances

April 1 – October 31, 2011

Daily Maximum 8-Hour Value (ppb)								
Date	**Liberty**	**JFK**	**Rocky Creek**	**Richards-Gebaur**	**Watkins Mill**	**Heritage Park**	**Trimble***	**Leavenworth***
4/13					76			
6/7							79	
7/10	78		77					
7/11			78					
7/12	78							
7/18	77		78				76	
7/22	79				80		76	
7/25				76		90		
7/28	89		76	78	88	78		
7/31								84
8/1			79				83	80
8/27						80		
8/31	85		88		92		89	84
9/1	77				77			
9/2	92		84		94		85	
10/4							78	
10/5					76		79	

*The Trimble and Leavenworth monitors are outside the maintenance area boundary but are used to verify SkyCast ozone forecasts due to their proximity to the boundary.

Kansas City Ozone Design Values, 2006 – 2011

An exceedance of the eight-hour ozone standard at a monitored location does not necessarily result in a violating monitor. Compliance with the eight-hour ozone standard is based on the *three-year average of the fourth-highest ozone reading* from each monitor.

Under the 2008 eight-hour standard, ***violations*** will occur when the three-year average is 76 ppb or higher. Table 4 displays both the fourth-high eight-hour readings for 2006 – 2011 as well as the design values, or three-year averages of the fourth-high eight-hour readings, for 2006 through 2011.

Table 4. Fourth-High Readings and Design Values, 2006-2011

	Fourth-High Eight-Hour Values							**Design Values**			
Missouri	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**		**06-08**	**07-09**	**08-10**	**09-11***
Liberty	93	81	66	72	70	79		**80**	73	69	73
Watkins Mill	91	73	69	74	73	80		**77**	72	72	75
Rocky Creek	87	89	69	72	76	78		**81**	**76**	72	75
Richards-Gebauer	78	72	66	64	67	71		72	67	65	67
Trimble	85	83	70	75	76	79		**79**	**76**	73	**76**
Kansas											
JFK (KCK)	81	73	63	62	58	62		72	66	61	60
Heritage Park	76	71	62	63	71	73		69	65	65	69
Leavenworth	74	80	64	63	70	74		72	69	65	69

*The 2011 eight-hour monitored ozone readings have not been quality assured and may contain errors. Readings in **bold** represent design values above the 75 ppb standard.

Table 5 shows the 2011 fourth-high eight-hour readings that would cause a violation of the design value. Although the EPA is no longer actively reconsidering the ozone standard, additional columns indicate how the critical 2011 values change depending upon more stringent design values.

Table 5. 2011 Fourth-High Values That Would Trigger a Violation
(75-ppb is the current standard)

Missouri	**8-Hr Value (ppb)**				**Kansas**	**8-Hr Value (ppb)**		
Design Value Level	**75***	**70**	**65**		*NAAQS Level*	**75***	**70**	**65**
Liberty	86	**71**	**56**		JFK (KCK)	108	93	78
Watkins Mill	81	**66**	**51**		Heritage Park	94	79	**64**
Rocky Creek	80	**65**	**50**		Leavenworth	95	80	**65**
Richards Gebauer	97	82	**67**					
Trimble	**77**	**62**	**47**					

*This is the current NAAQS level under the 2008 eight-hour standard