

Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, Kentucky 40204

- Subject: Exceptional Event Flagging
- Parameter: PM_{2.5}
- Dates: November 11-12, 2005
- Reason: Smoke from a fire at the Fort Knox Military Reservation. The fire was caused by tracer rounds that ignited a brush pile. The fire was allowed to burn because unexploded ordinance in the area prevented fire crews from moving in. See the included Courier Journal Article dated November 13, 2005 for details. The Fort Knox Military Reservation is approximately 20 miles southwest of the Louisville Metro Area.
- Data: Table 1 shows daily FRM averages prior to, during, and after the event. Table 2 contains the annual and multi-year 95th percentiles which statistically provide an estimate of expected maximum values for the Louisville Metro Area. Table 3 contains the 95th percentile values for each year if data flagged due to exceptional events is excluded from the calculations. Background concentrations for the Louisville Metro area are estimated to be in the 12.1 µg/m³ range and are based on multi-year annual averages from background rural sites located at Mammoth Cave in Kentucky and the Henry County transport site located in Southern Indiana.
- Strip charts from the continuous PM_{2.5} sampler located at Southwick clearly show peak values far exceeding normal levels and of such magnitude and duration that the 24-hour averages were significantly biased high. The charts indicate that the plume moved into the area at around 0700 on the 11th and began to dissipate at around 2300 on the 12th. Note that the lower levels flagged for the 11th were specifically flagged due to the weight of evidence of impact shown on the strip charts. The estimated values without the peaks would have been in the 15 µg/m³ range.
- Pollution roses are included to show that the maximum concentration of PM_{2.5} recorded correspond with wind direction data.
- Maps: Images of maps from NOAA Satellite and Information Services show the smoke plume over the Louisville Metro Area on November 11-12.
- AQA: No official air quality alert was issued for the Louisville Metro Area during this episode. At the time the breakpoint for PM_{2.5} for the Unhealthy for Sensitive Groups range was 40.4µg/m³.

Courier-Journal newspaper article/weblink

Fort Knox fire sends smoke into Louisville

Sunday, November 13, 2005

Fort Knox fire sends smoke into Louisville

No buildings at post threatened

By Michael A. Lindemberger

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The Courier-Journal

A brush fire has been burning on Fort Knox's main firing range since Thursday evening, but officials said yesterday that the flames posed no threat to buildings or people on the post.

A haze caused by the fire that became visible in parts of Louisville, Southern Indiana and Hardin County yesterday prompted a handful of calls to area fire departments, officials in Elizabethtown and Louisville said.

Sgt. Tim Marsh of the Radcliff Fire Department said range fires happen several times a year and pose no threat to the surrounding property or residents.

Fort Knox spokeswoman Connie Shaffery said the fire began Thursday when tracer rounds ignited dry brush on the range, located south of the Salt River and west of the Rolling Fork.

Shaffery said the fire would be allowed to burn itself out since firefighters cannot reach the area because of unexploded ordnance in the range's four-mile-long impact zone. Shaffery said a range officer continued to monitor the fire and that if it appeared likely to spread beyond the area, firefighters on the 109,000-acre post would contain it.

"It's supposed to rain this evening, and we expect that will put it out," she said.

Dispatcher Pat Riordan of Louisville Fire & Rescue said several residents had called to complain about the smoke.

"It's not particularly worrisome," Riordan added. "But if you have respiratory problems, you'd likely find it to be irritating."

Riordan said winds blowing 9 to 15 mph out of the south carried smoke into the Louisville area.

Because of strong winds and low humidity, the National Weather Service issued a "red flag warning" for increased fire danger yesterday afternoon for Central and Western Kentucky and Southern Indiana. The warning expired at 7 last night.

Table 1
FRM PM_{2.5} 24-hour Averages
Values in **BOLD** have been flagged in AQS

Date	21-111-0048 Barret	21-111-0043 Southwick	21-111-0043 Southwick Collocated	21-111-0051 Watson	21-111-0044 Wyandotte
11-09-05	11.2	11.3	12.1	No sample	11.6
11-10-05	No sample	4.1	4.4	No sample	No sample
11-11-05	No sample	21.3	21.2	No sample	28.8
11-12-05	21.2	36.4	35.6	No sample	29.6
11-13-05	No sample	12.4	12.4	No sample	19.5
11-14-05	No sample	6.6	6.3	No sample	6.5

Table 2
Multi-Year 95th Percentiles

Date	21-111-0048 Barret	21-111-0043 Southwick	21-111-0051 Watson	21-111-0044 Wyandotte
2004	27.4	27.0	24.2	26.6
2005	35.2	36.4	30.0	32.1
2006	33.4	29.4	28.4	30.8
Average	32.0	30.9	27.5	29.8

Table 3
Multi-Year 95th Percentiles Excluding Flagged Data

Date	21-111-0048 Barret	21-111-0043 Southwick	21-111-0051 Watson	21-111-0044 Wyandotte
2004	26.1	26.7	24.2	25.4
2005	32.2	32.1	29.2	31.2
2006	26.4	28.2	26.2	28.5
Average	28.2	29.0	26.5	28.3





