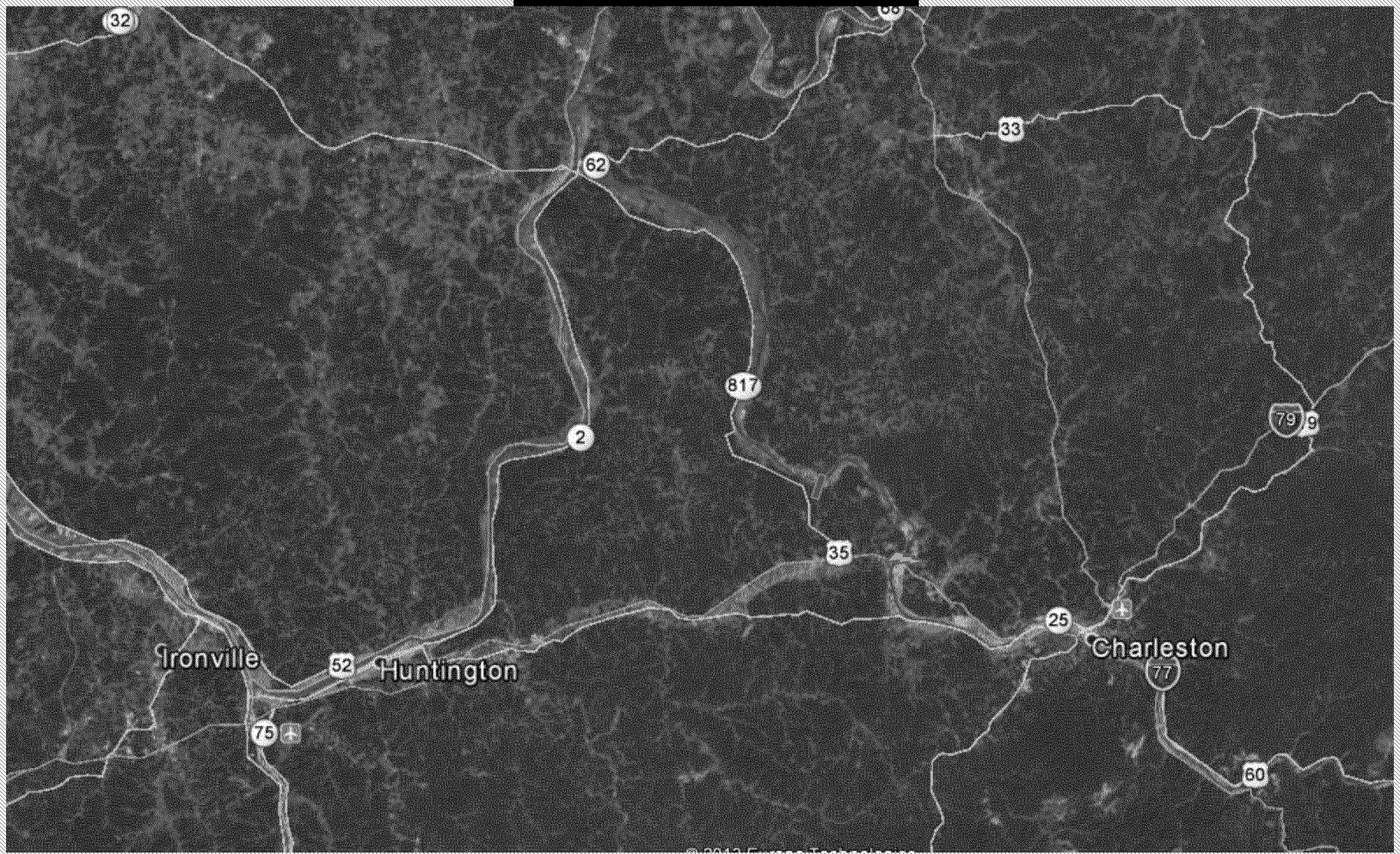
ORSANCO ODS

Tracking MCHM in the Ohio River

Elk River/Freedom Industry Release



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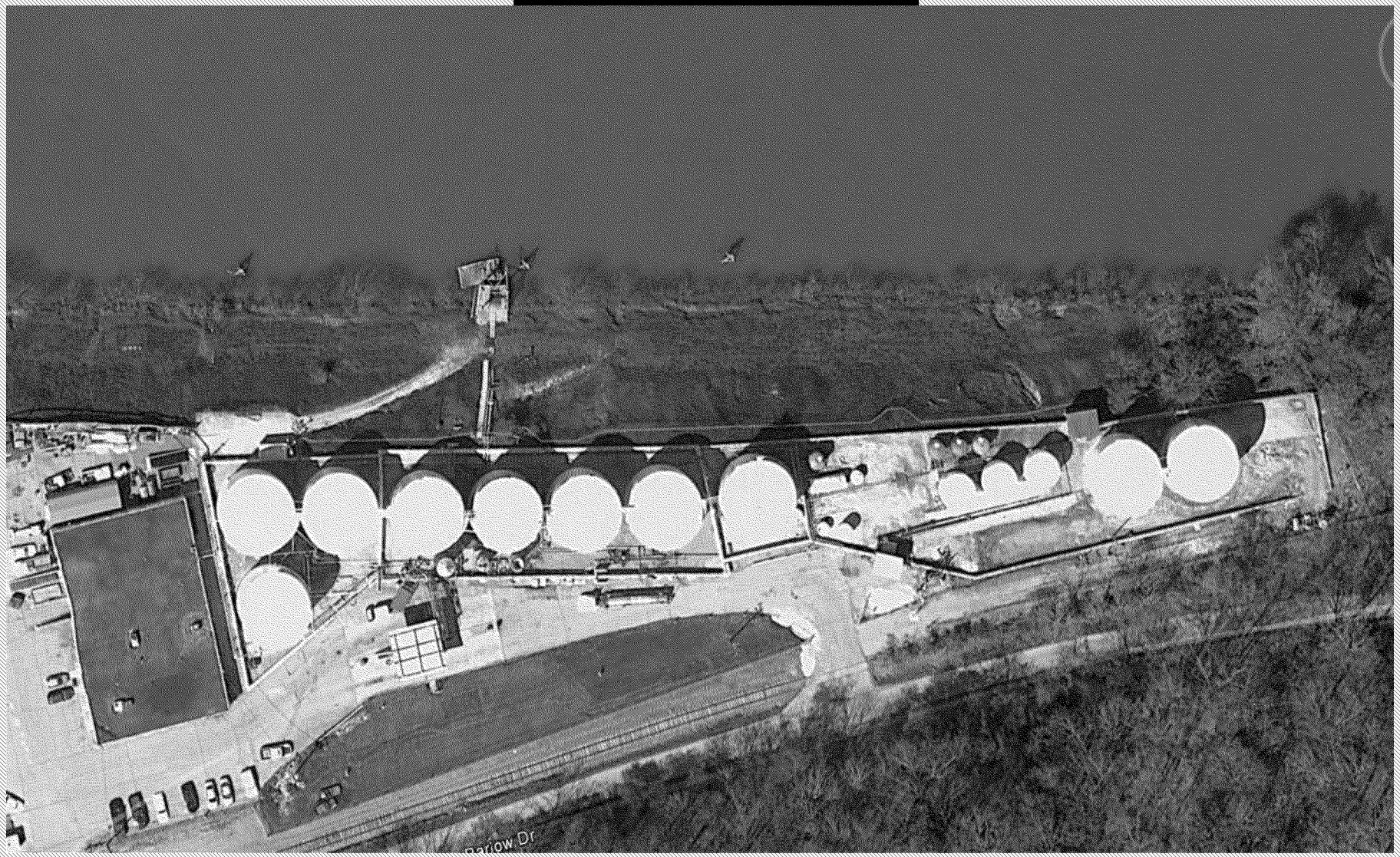
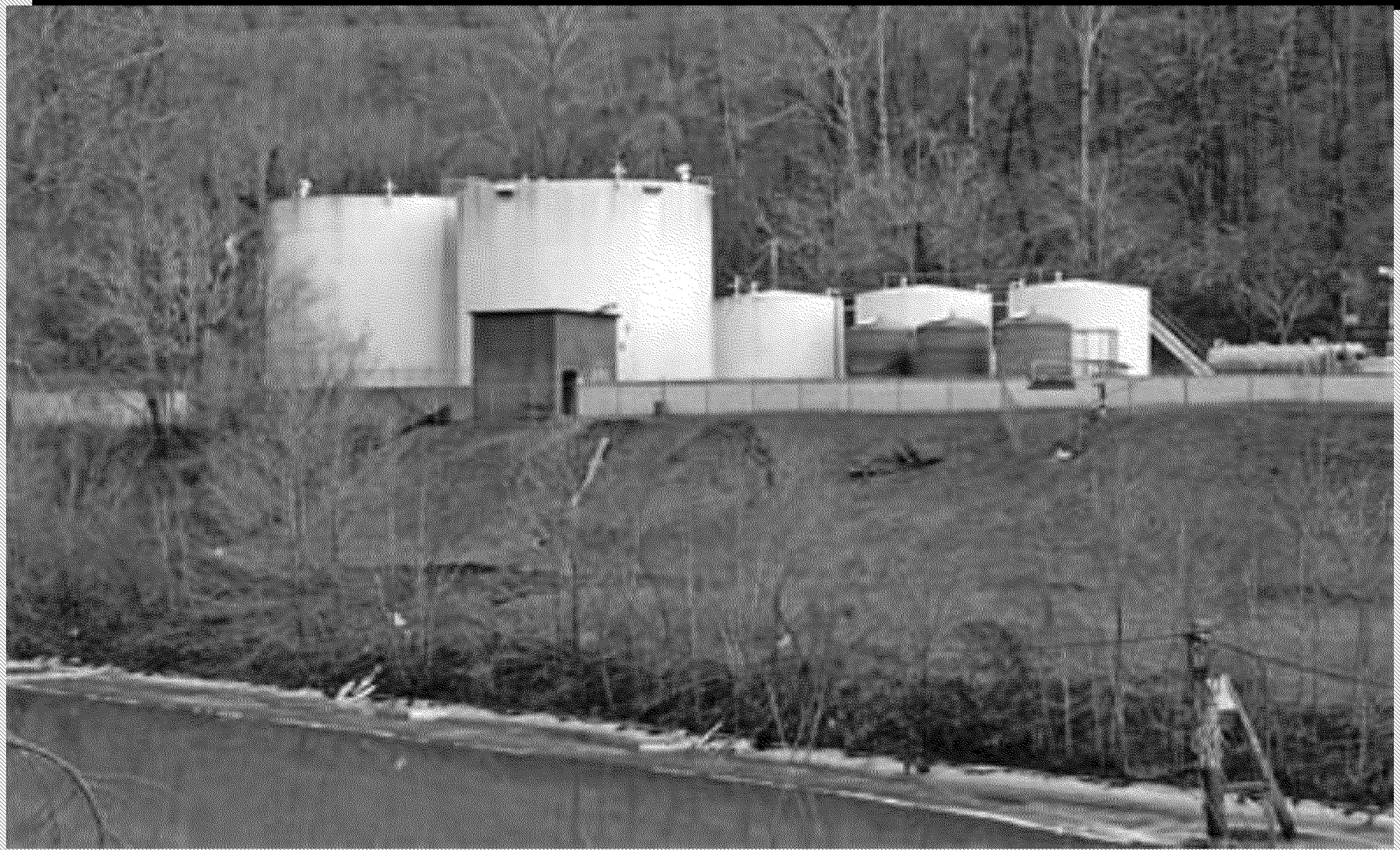


Freedom Industries Storage Tanks



Charleston, WV Elk River Spill Timeline

- 8:15 am, Jan. 9th, West Virginia Department of Environmental Protection officials received air complaints concerning odor around Freedom Industries Storage Tanks
- 10:30 am, Jan. 9th, employees with Freedom Industries discovered coal processing chemical 4-methylcyclohexane methanol (MCHM) has leaked from a steel storage tank through a one-inch hole into the Elk River, just 1.5 miles upstream of the intake for West Virginia American Water
- 12:00 WV DEP personnel arrive on site to investigate
- 12:05 pm, Jan. 9th, Freedom Industries called state hotline to report leak

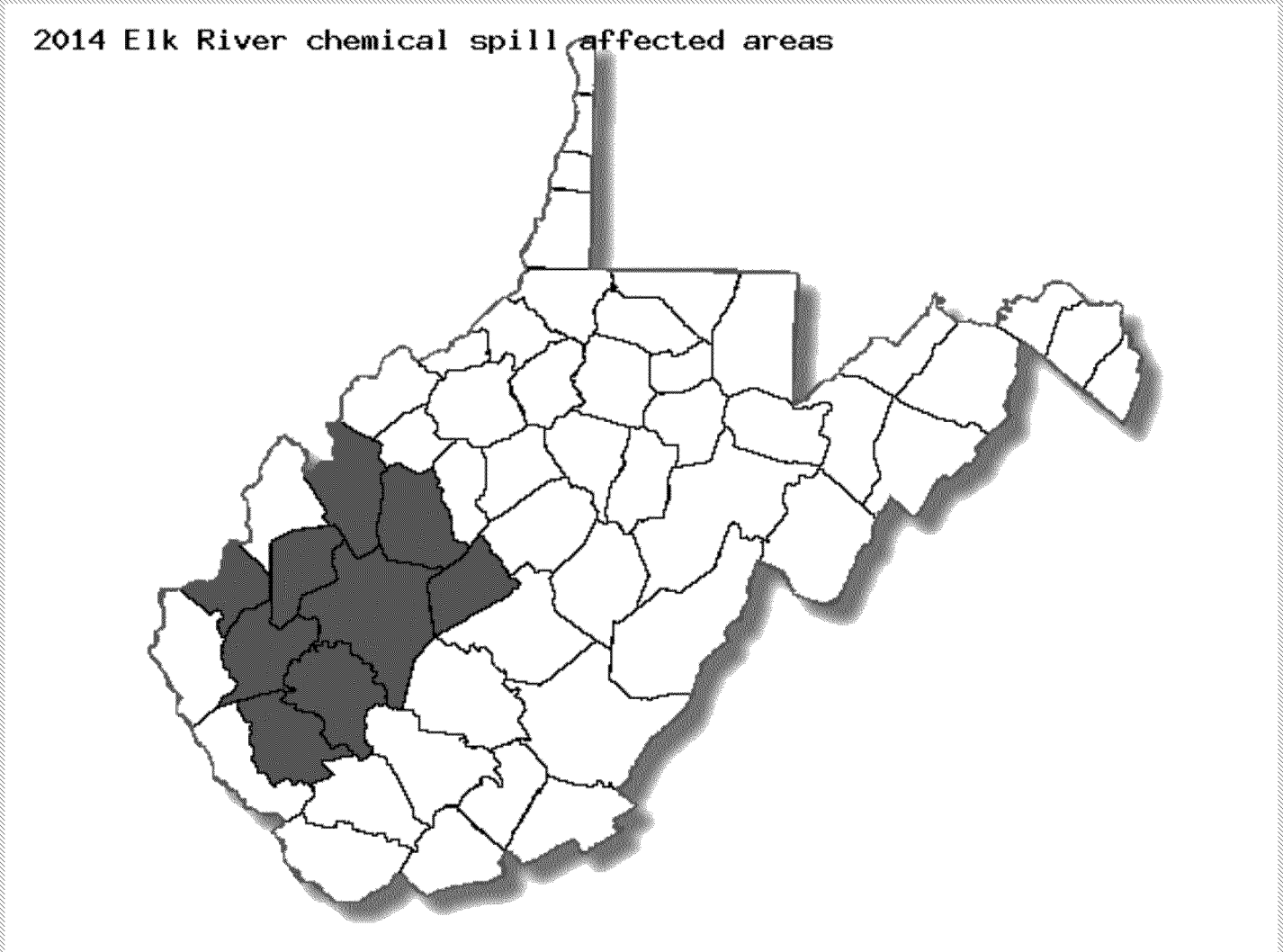
Charleston, WV Elk River Spill Timeline

- By 4 pm, Jan. 9th, West Virginia American Water's carbon filtration system was not able to remove the MCHM
- At 5:45 pm, Jan. 9th, West Virginia American Water issued a "do not use except for toilet flushing and fire fighting" order
- 300,000 people in 9 counties are impacted
- The ban lasts as long as 10 days for some residents
- 10,000 gallons of crude MCHM were released into the Elk River

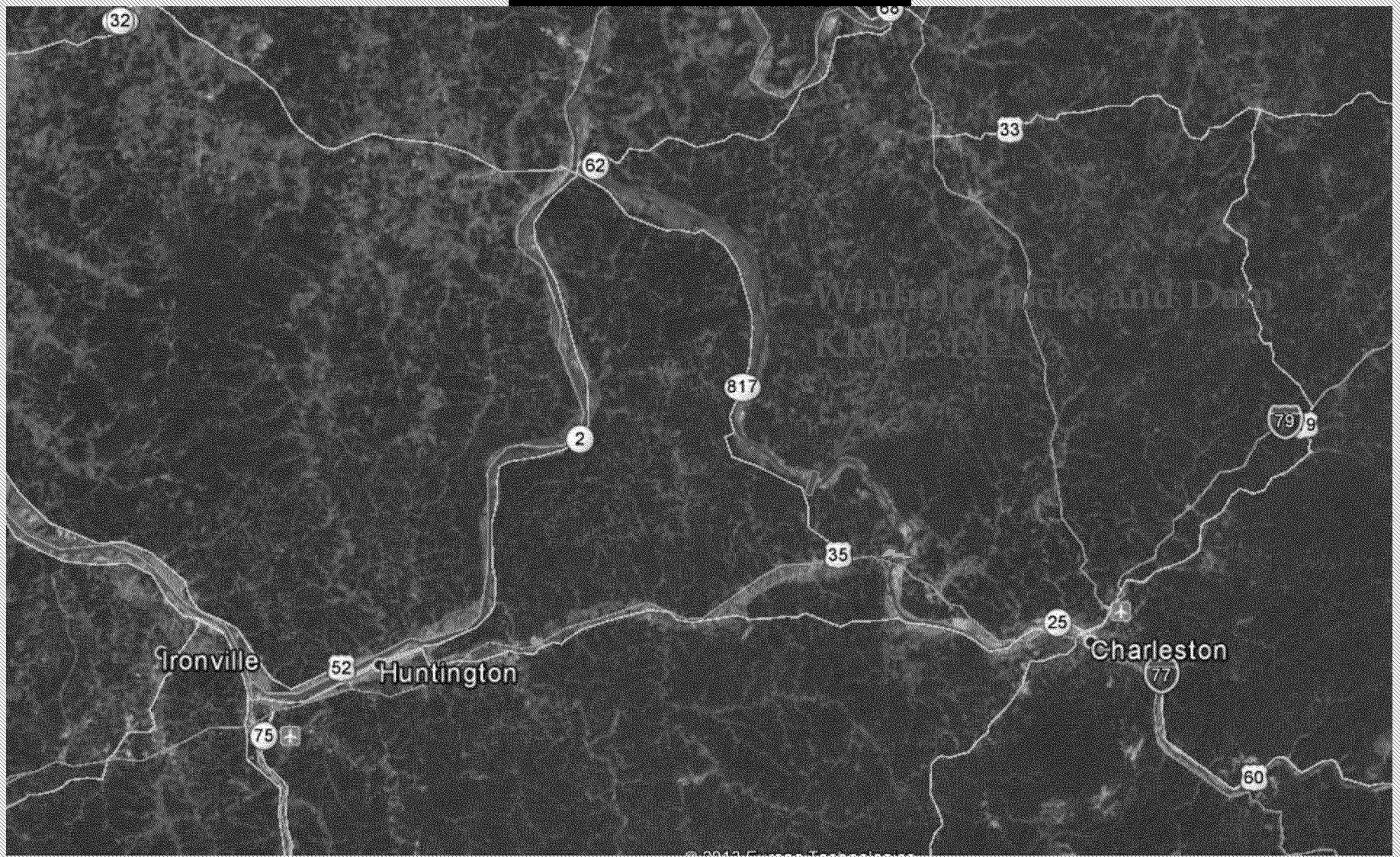
4-methylcyclohexane methanol (MCHM)

- A chemical foam used to wash coal and remove impurities that contribute to pollution during combustion
- Licorice-like odor
- MCHM is not considered a “hazardous chemical”.
- Minimal health and safety data on the chemical

Affected Counties



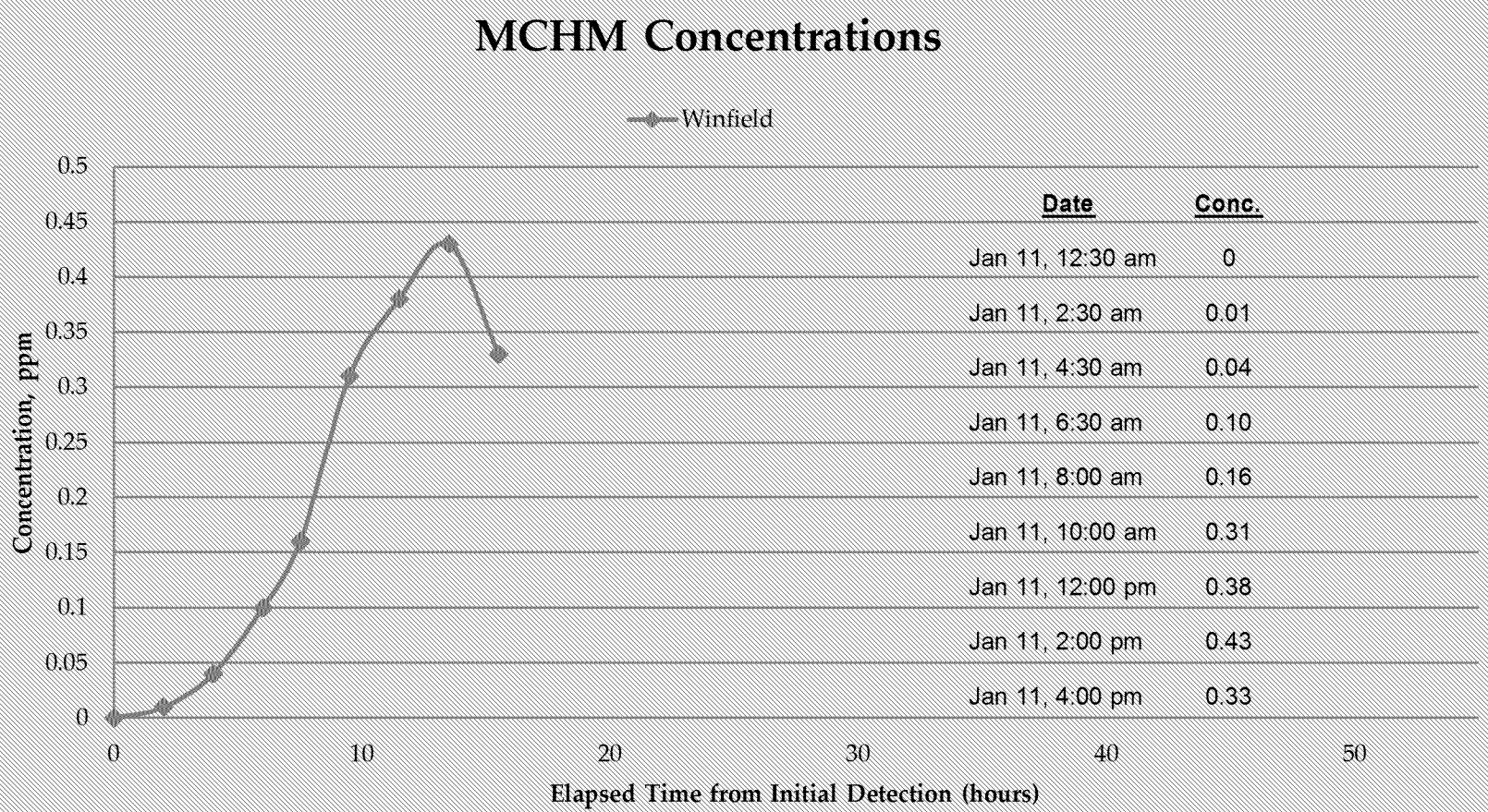
Elk River/Freedom Industry Release



Winfield Locks and Dam

Kanawha River, Winfield L & D

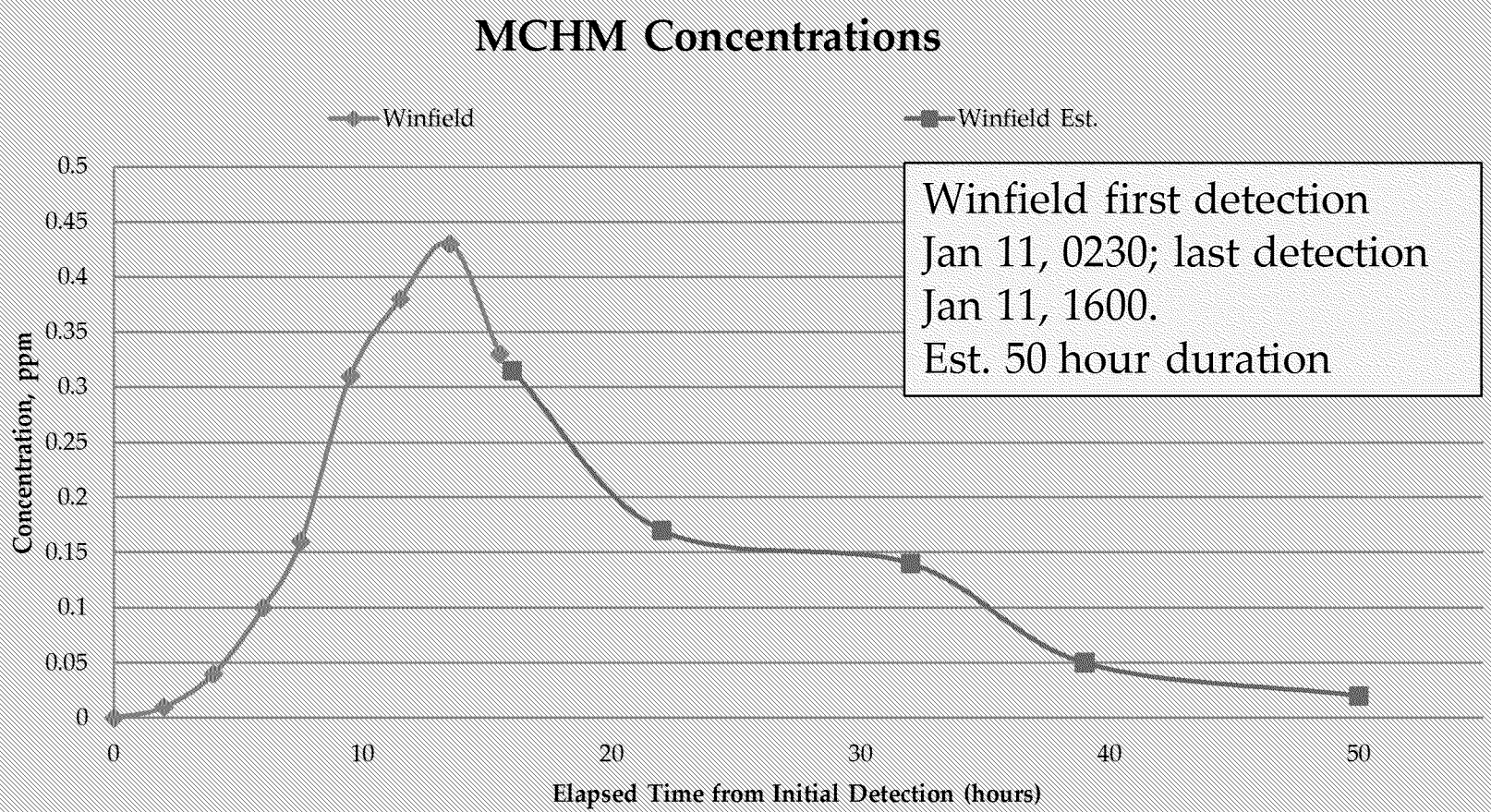
Kanawha River Mile 31 January 11, 2014



Date	Conc.
Jan 11, 12:30 am	0
Jan 11, 2:30 am	0.01
Jan 11, 4:30 am	0.04
Jan 11, 6:30 am	0.10
Jan 11, 8:00 am	0.16
Jan 11, 10:00 am	0.31
Jan 11, 12:00 pm	0.38
Jan 11, 2:00 pm	0.43
Jan 11, 4:00 pm	0.33

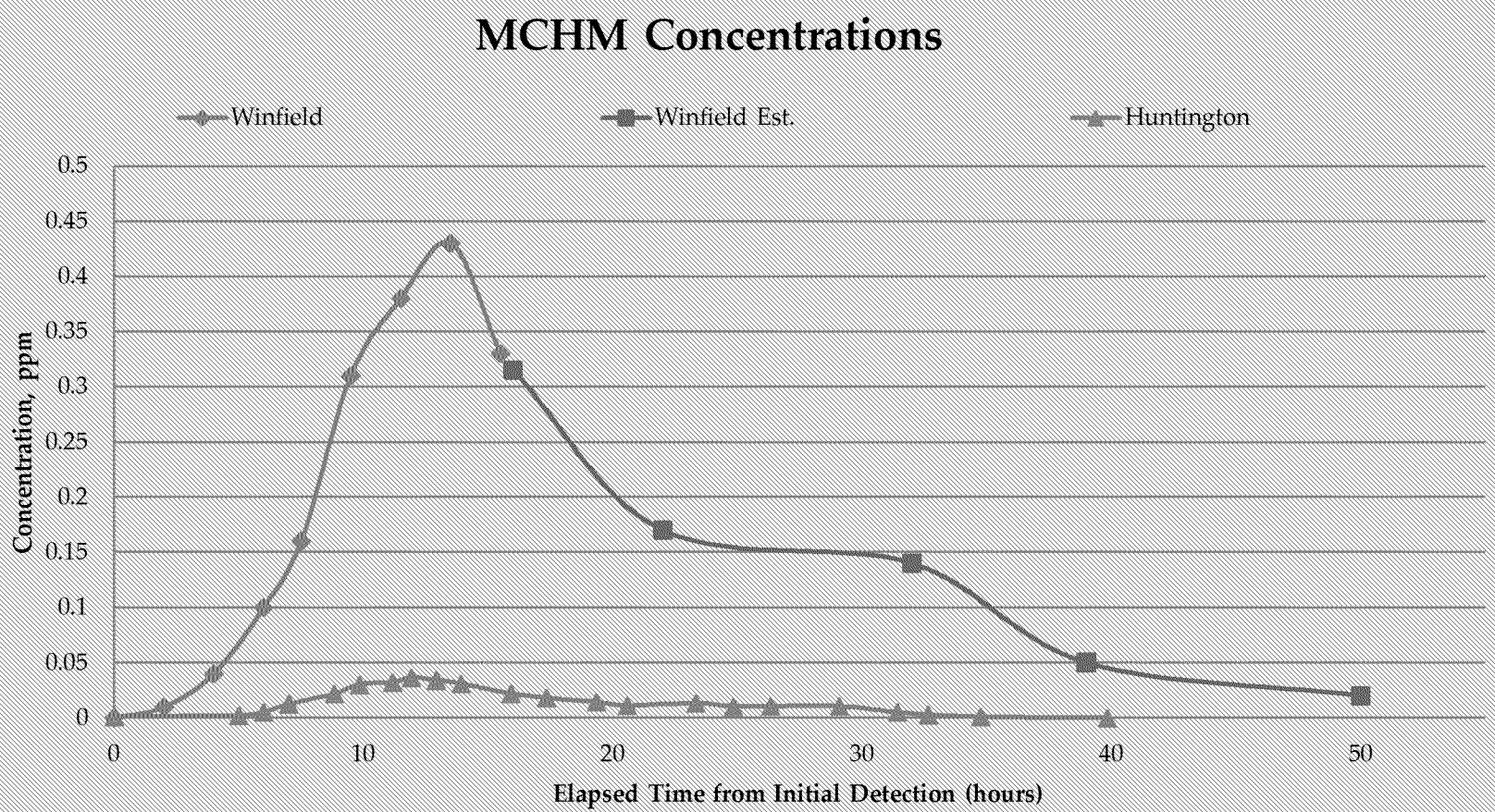
Kanawha River, Winfield L & D

Kanawha River Mile 31 = 29 river miles



Winfield – Huntington Comparison

KRM 31 ORM 304 = 99 river miles



Winfield – Huntington Comparison

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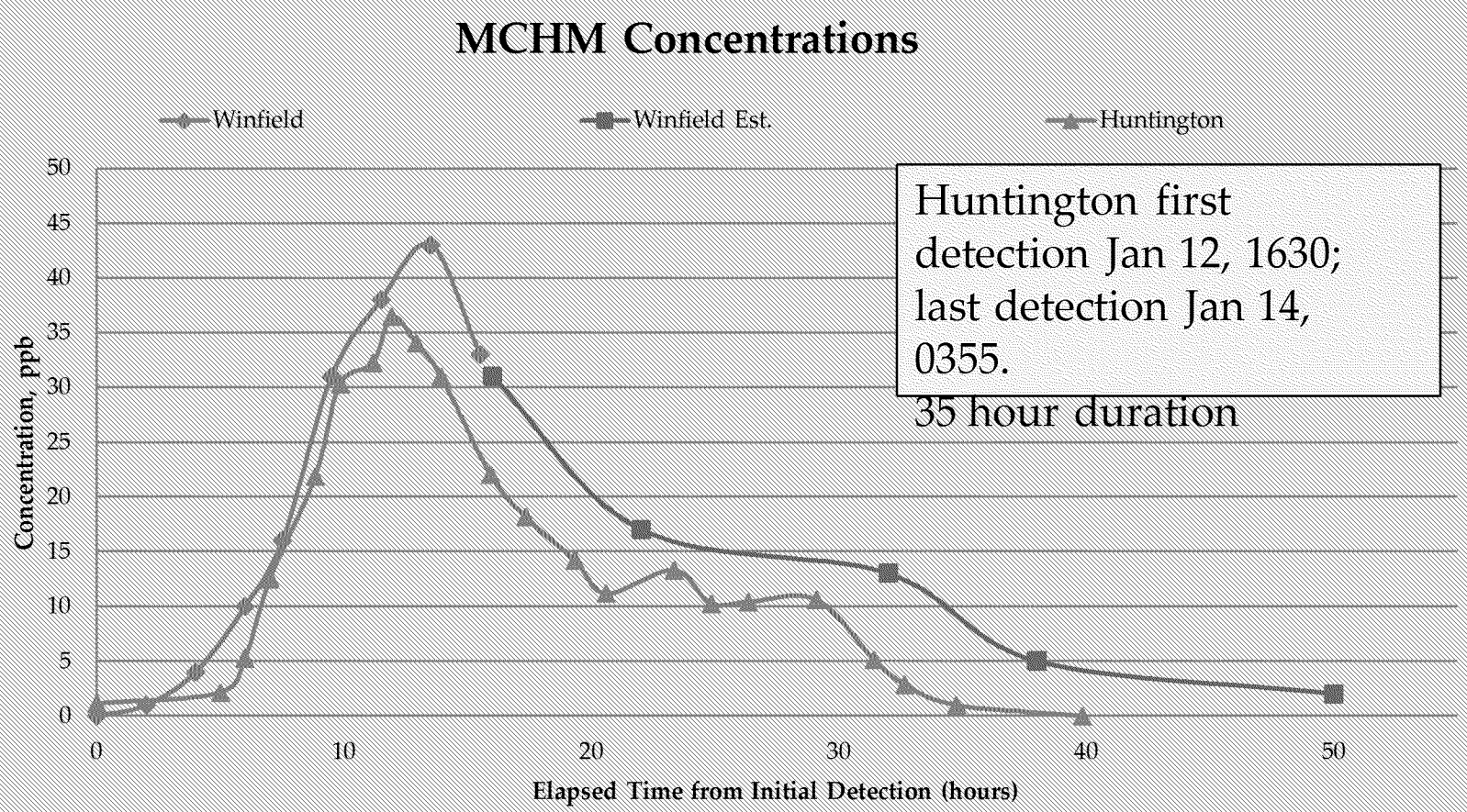
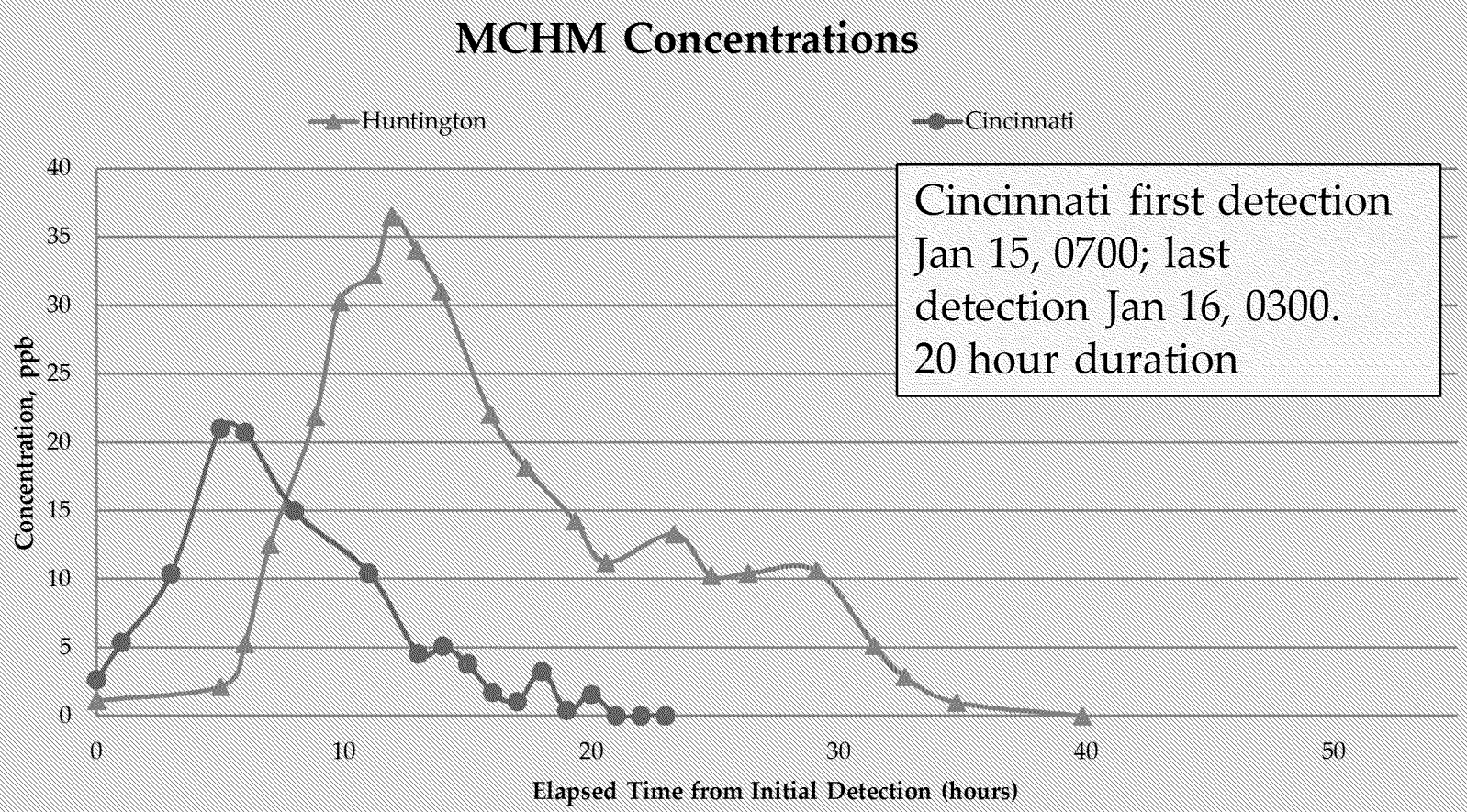


Huntington first detection Jan 12, 1630; last detection Jan 14, 0355.

35 hour duration

Huntington - Cincinnati

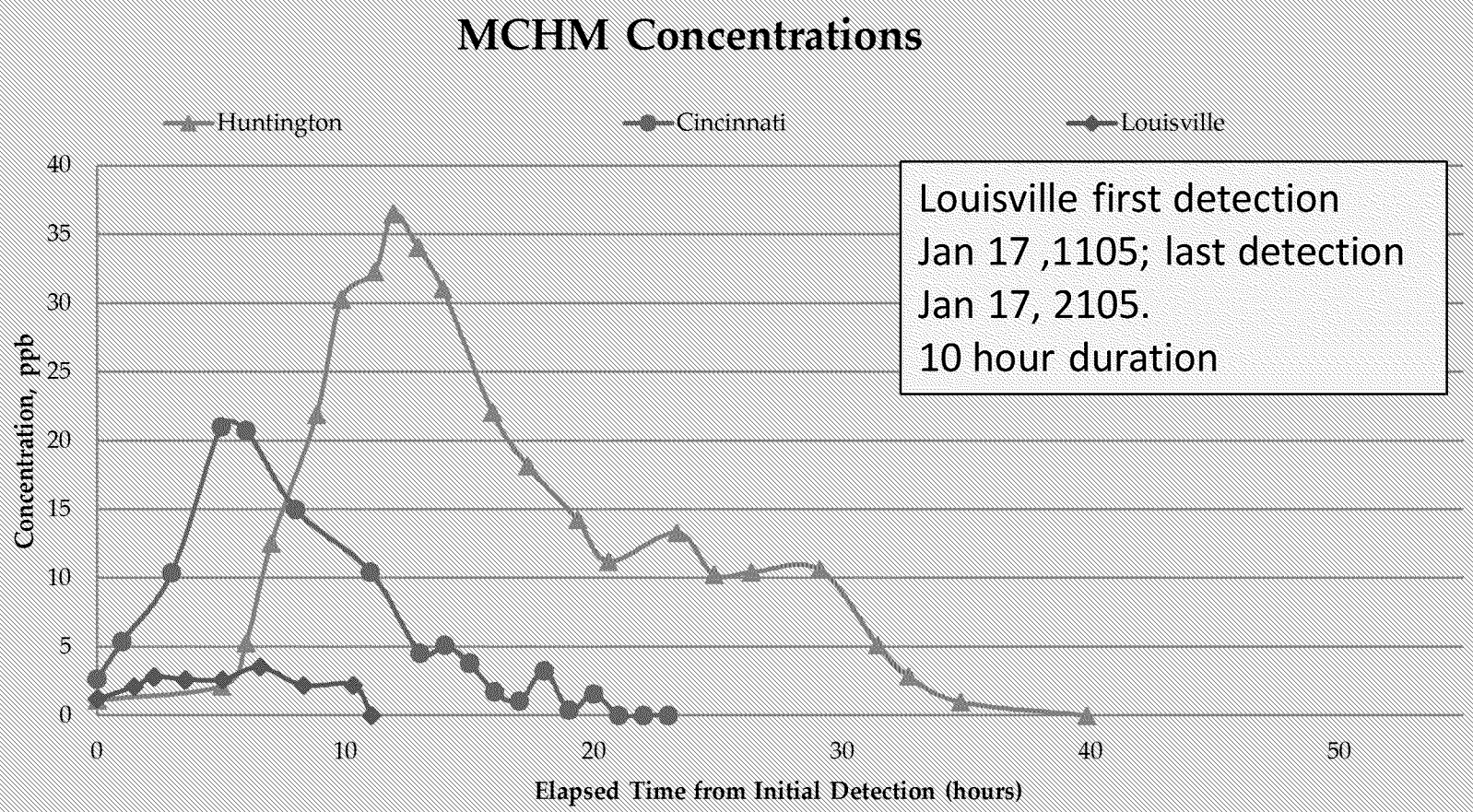
ORM 304 ORM 463 = 159 river miles



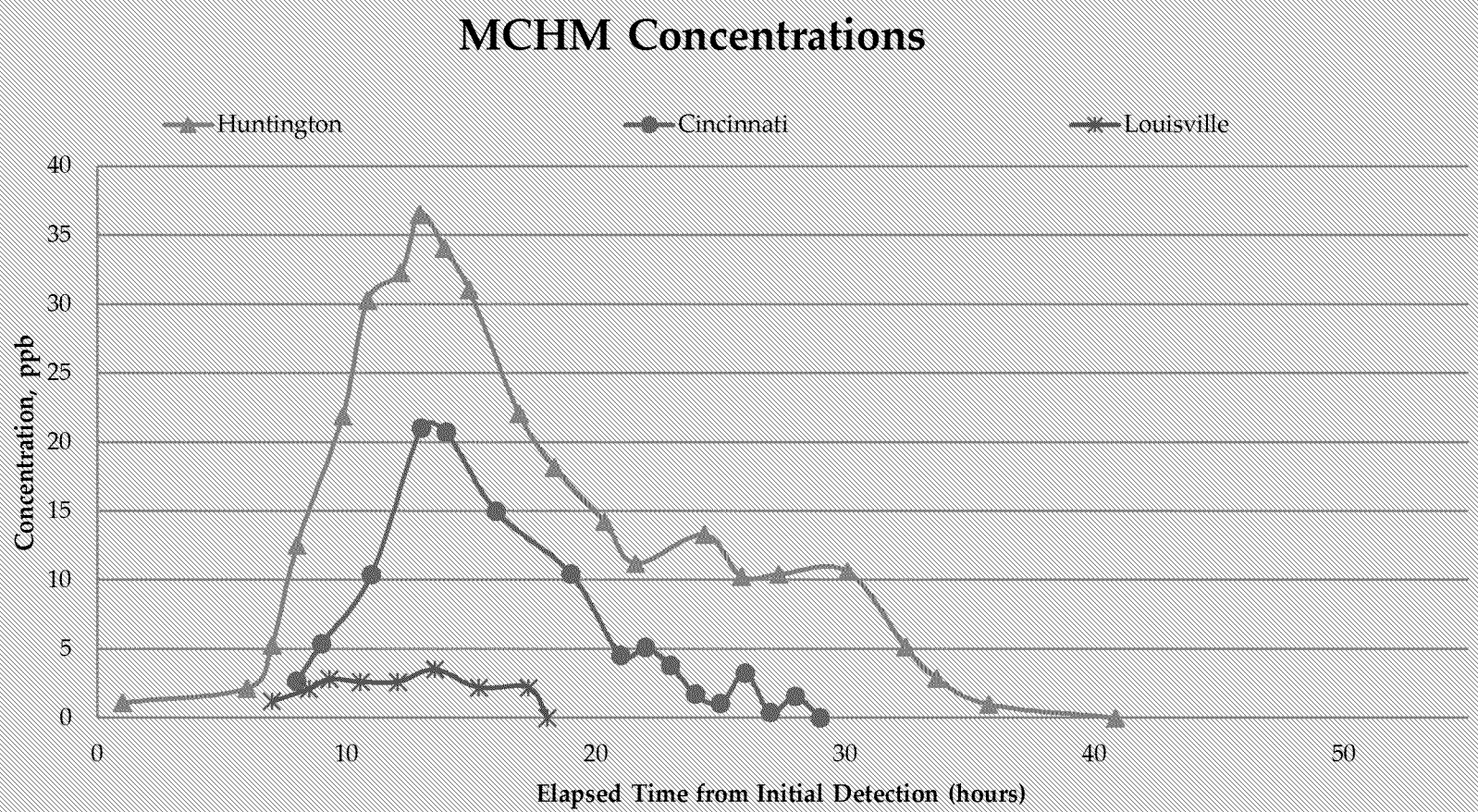
Cincinnati first detection Jan 15, 0700; last detection Jan 16, 0300. 20 hour duration

Huntington - Cincinnati – Louisville

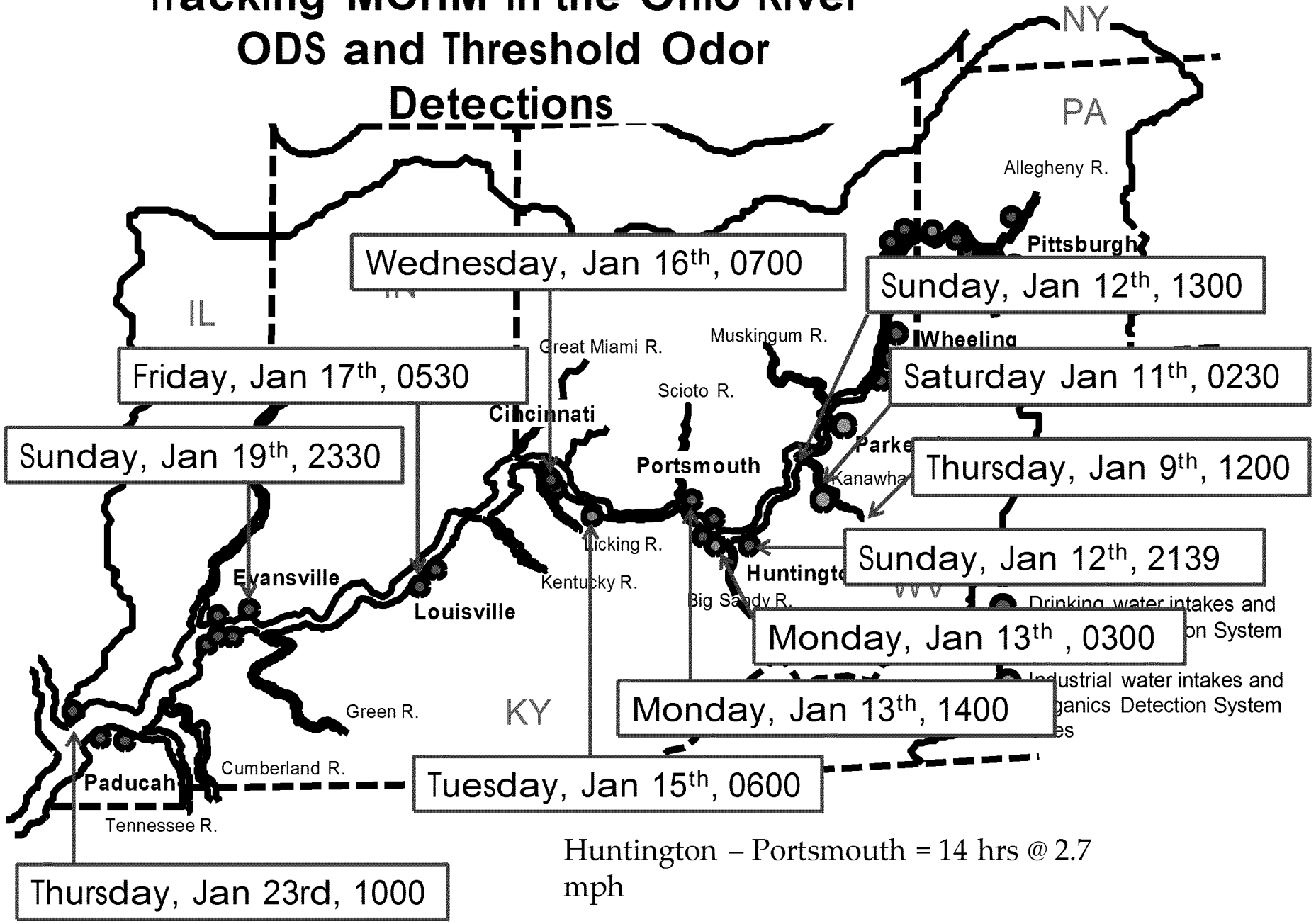
ORM 304 ORM 463 ORM 600 = 296 river miles

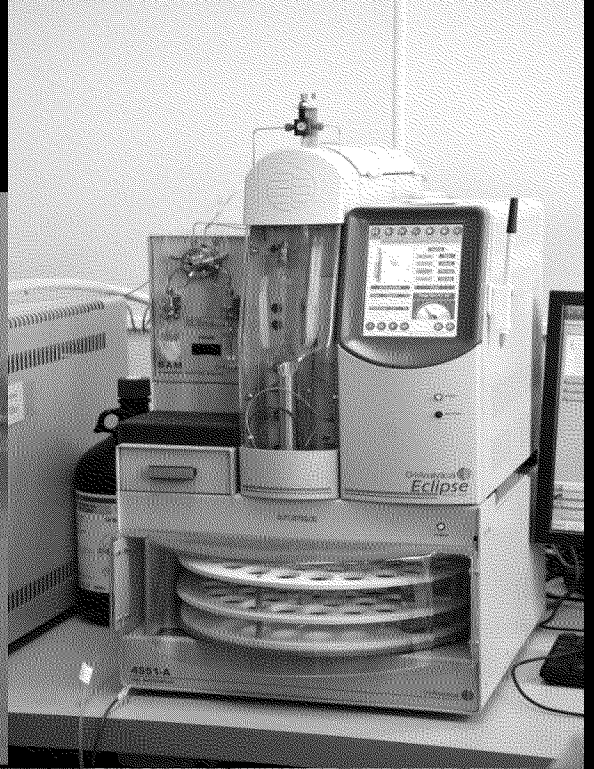
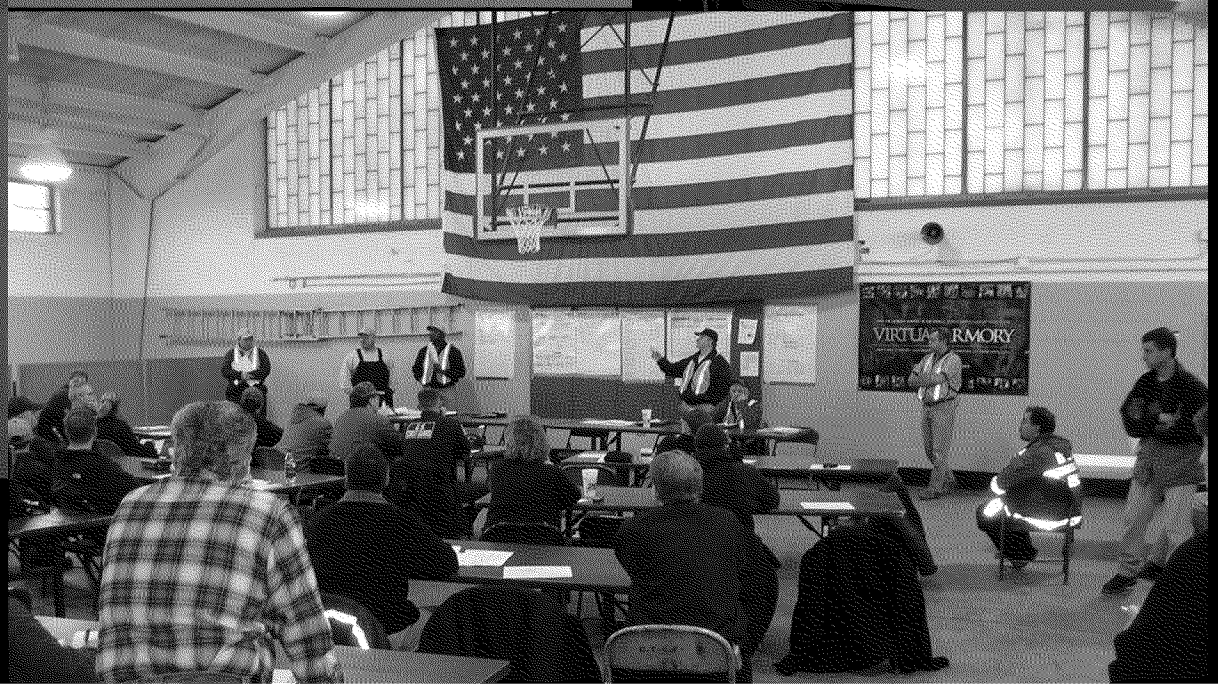


MCHM Plume Behavior



Tracking MCHM in the Ohio River ODS and Threshold Odor Detections



Huntington – Portsmouth = 14 hrs @ 2.7 mph

ORSANCO Emergency Response