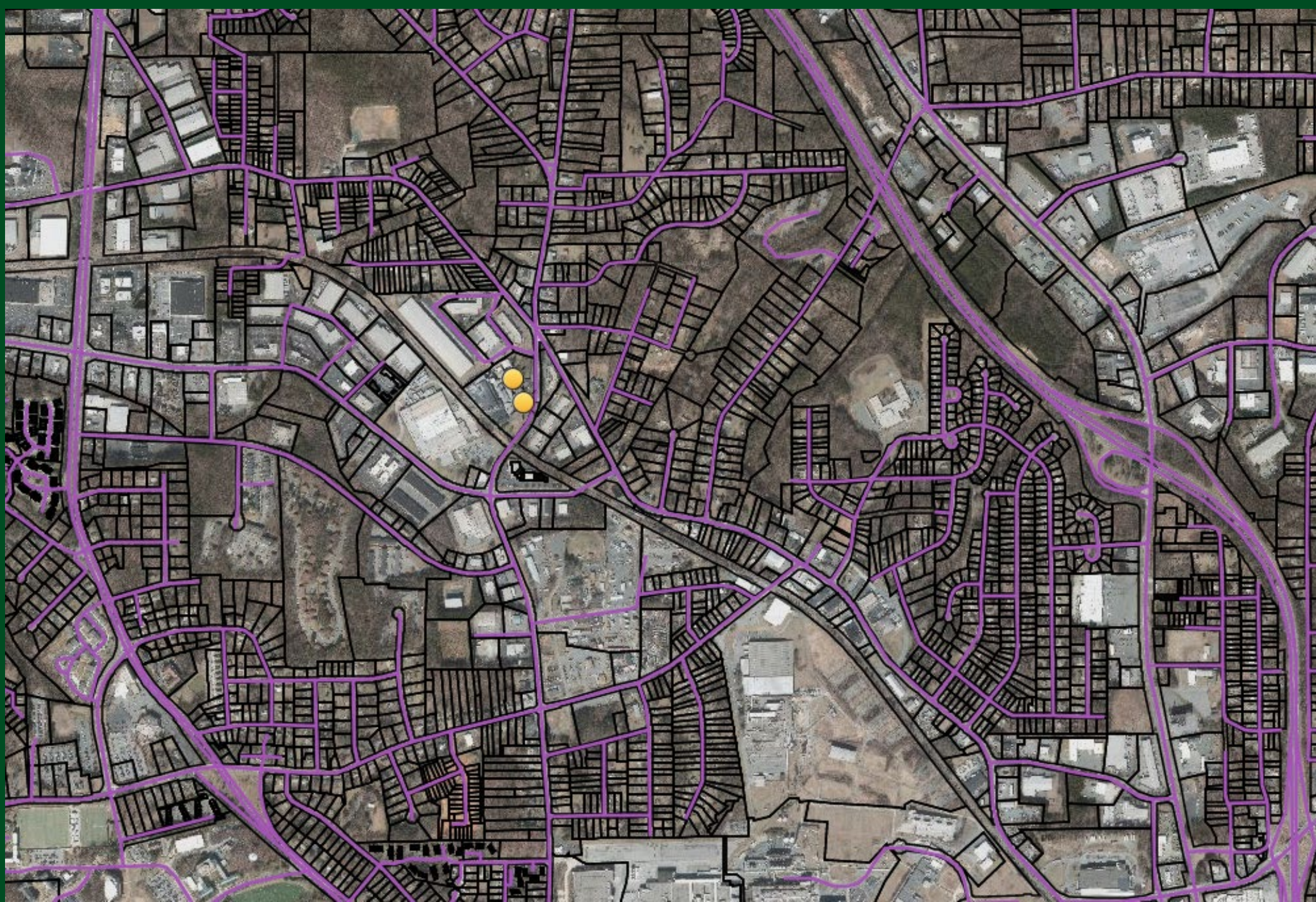


Fertilizer Facility Fire

Air Quality Impacts
January 31-February 6, 2022



TIMELINE

Jan 31, 6:45 pm: First call reporting fire at fertilizer facility.

Jan 31, 9 pm: Evacuation of one mile radius around facility, including firefighters and equipment, approximately 6,500 residents.

Feb 1 afternoon: Eight-member EPA emergency response team arrived in Winston-Salem, set up four mobile air monitoring sites around and within perimeter of evacuation zone.

Feb 2, 12:00 am: Enhanced air monitoring data collection and recording had begun.

Feb 2-5, 8:15 am : NCDAQ, FCEAP meet virtually with EPA onsite coordinators for updates on the fire and air monitoring.

Feb 2 pm: Fire suppression activities resume.

Feb 2-6: FCEAP sent out daily media releases advising citizens to exercise precautions, avoid smoke.

Photo courtesy of the Winston-Salem Journal



Photos courtesy of the Winston-Salem Journal








Photo courtesy of the Winston-Salem Journal

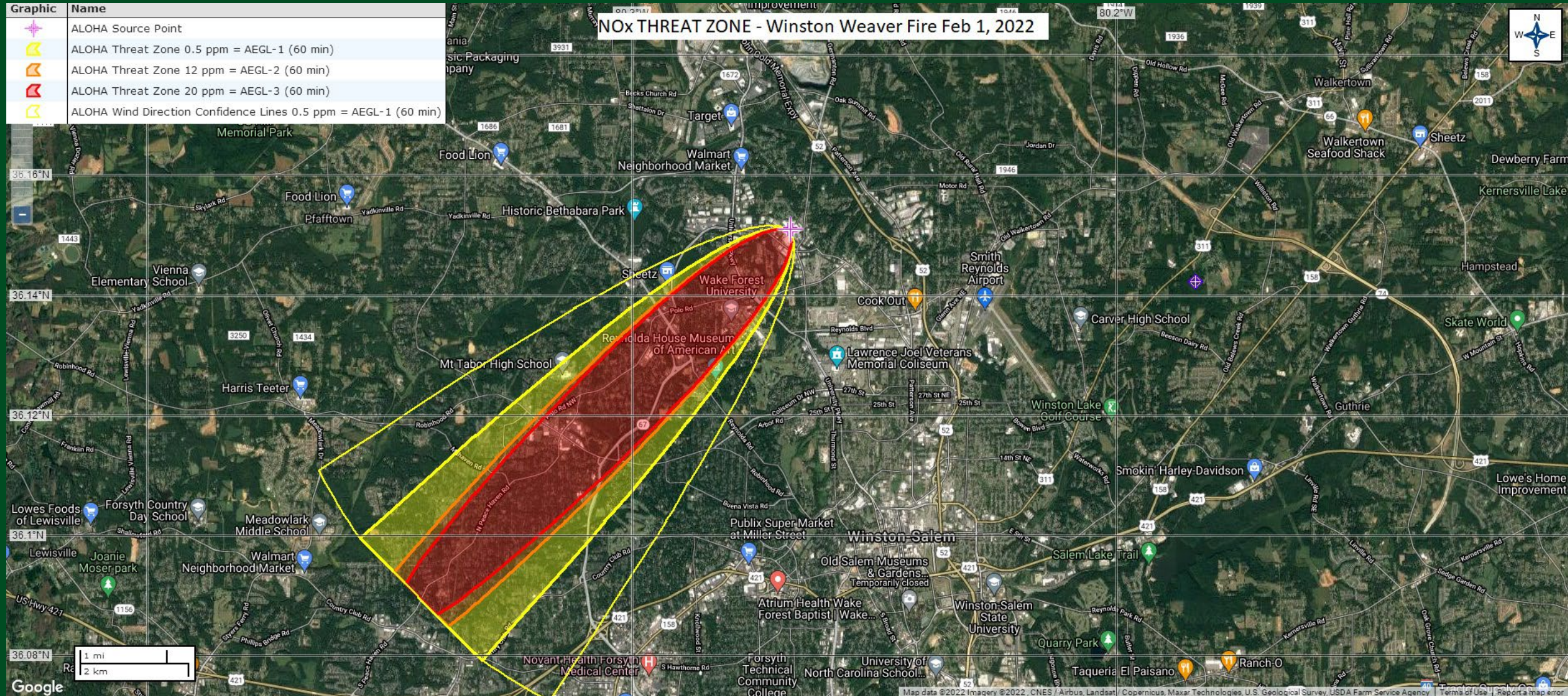


Inventory of Chemical Compounds

- Ammonium nitrate
- Boron bromide
- Calcium nitrate
- Diammonium phosphate
- Diesel fuel
- Dustrol
- Epsom salt
- Gypsum
- Iron
- Limestone
- Manganese oxide
- Monoammonium phosphate
- Monocalcium phosphate
- Monopotassium phosphate
- Potassium magnesium sulfate
- Potassium nitrate
- Sulfate of ammonium
- Sulfate of potash
- Urea
- Zinc

Air Quality: Area of Initial Impact, Tuesday 2/1

Graphic	Name
	ALOHA Source Point
	ALOHA Threat Zone 0.5 ppm = AEGL-1 (60 min)
	ALOHA Threat Zone 12 ppm = AEGL-2 (60 min)
	ALOHA Threat Zone 20 ppm = AEGL-3 (60 min)
	ALOHA Wind Direction Confidence Lines 0.5 ppm = AEGL-1 (60 min)



EPA Enhanced Air Monitoring



EPA Standard Operating Guidelines Particulate Monitoring Guide for Fires

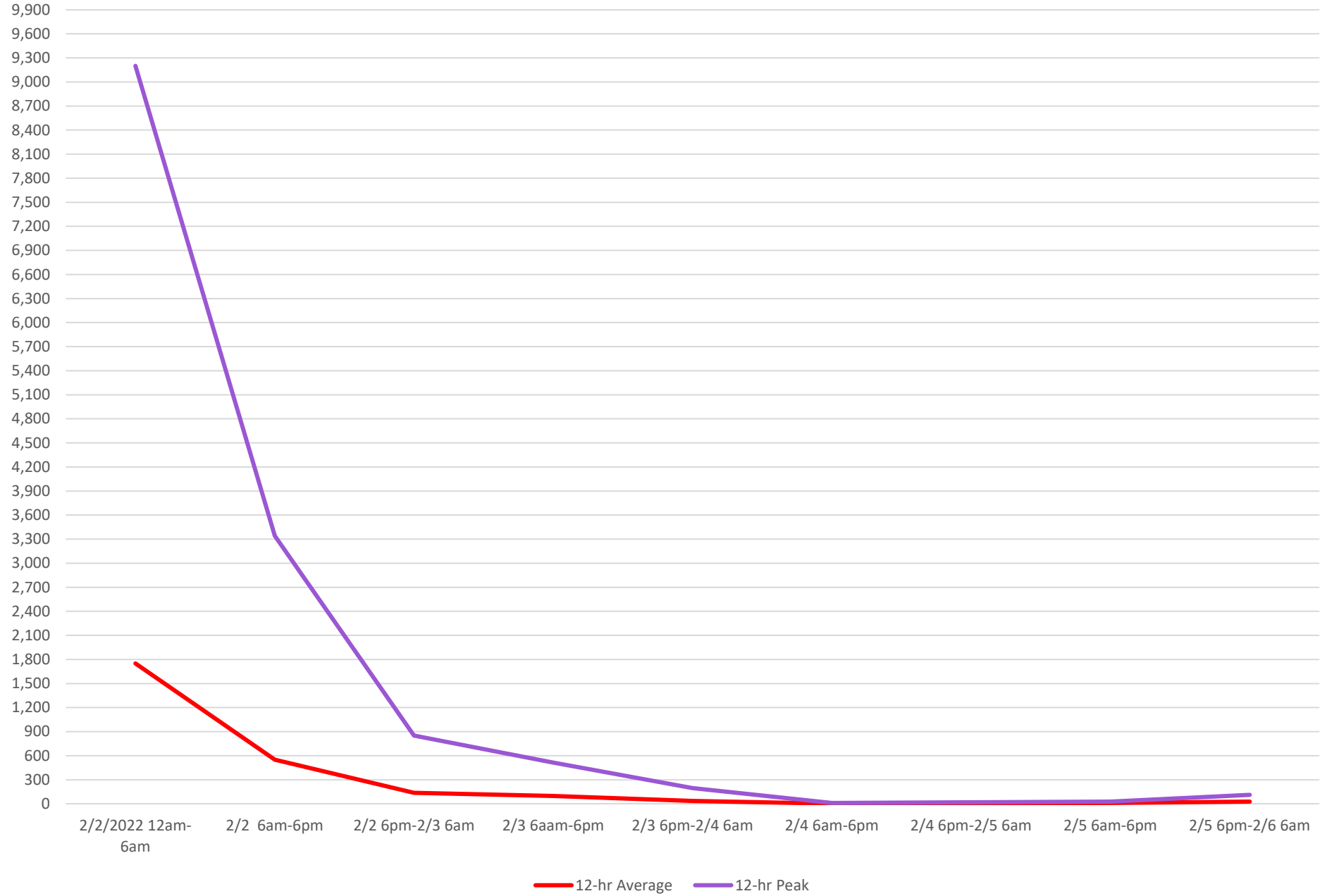
PM _{2.5} Threshold Levels (µg/m ³)			Level of Health Concern
1-3 Hr. Avg. ¹	8 Hr. Avg. ¹	24 Hr. Avg. ¹	
COMMUNITY ACTION LEVELS			
0.0 – 38.0	0 – 22	0.0 – 12.0	Good
39 – 88.0	23 – 50	12.1 - 35.4	Moderate
89 – 351	51 – 79	35.5 - 55.4	Unhealthy for Sensitive Groups
139 – 351	80 – 200	55.5 - 150.4	Unhealthy
352 - 526	201 – 300	150.5 - 250.4	Very Unhealthy
> 526	> 300	250.5 – 500	Hazardous

EPA Standard Operating Guidelines

Particulate Monitoring Guide for Fires

Level of Health Concern	Meaning	Action
Good	Air quality is considered satisfactory, and air pollution poses little or no risk	Implement communication plan ² .
Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive ³ to air pollution.	Issue public announcement about health effects ² . Stay out of areas with visible smoke.
Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Recommend evacuation or shelter-in-place for sensitive populations ^{2,4} .
Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.	Consider closing schools and cancelling outdoor events. Recommend shelter-in-place for affected neighborhoods.
Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.	Consider closing schools and cancel all outdoor events. Recommend shelter-in-place and/or evacuation for affected neighborhoods.
Hazardous	Health alert: everyone may experience more serious health effects	Recommend closing schools & cancel outdoor events. Recommend closing workplaces and evacuating affected neighborhood.

PM2.5 Levels (ug/m3)



Particulate Matter (PM_{10/2.5}) Levels of Concern

Enhanced air monitoring by the EPA Emergency Response Team around the incident area began just before 12:00 am on Tuesday night.

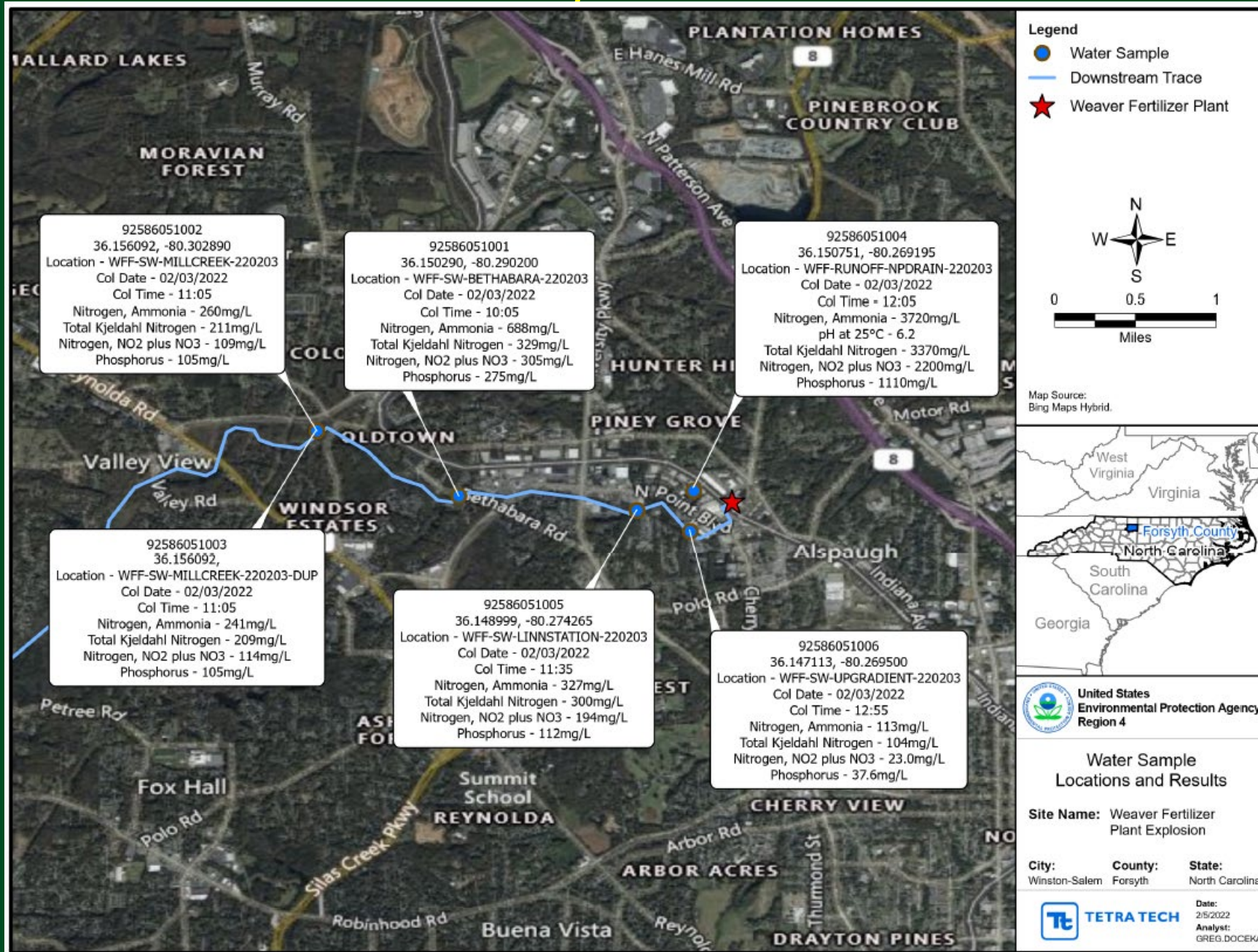
Hazardous: Monday night (1/31) through Wednesday evening (2/2)

Unhealthy: Wednesday evening through Friday morning (2/4)

Good: Friday morning through Saturday evening (2/5)

- Moderate PM levels were measured intermittently in a few limited areas Saturday night (2/5).

Water Quality Assessment



Thank you!

Minor Barnette, Director

Forsyth County Office of Environmental Assistance and
Protection

(336) 703-2441

<https://www.forsyth.cc/EAP>