

Winston-Weaver Fire (Environmental Update)


PUBLIC WORKS COMMITTEE

May 10, 2022





OUTLINE

- **OVERVIEW**
 - **IMPACTS TO AIR QUALITY**
 - **IMPACTS TO WATER QUALITY**
 - **BROWNSBORO SITE REMEDIATION**
 - **WEAVER SITE REMEDIATION**
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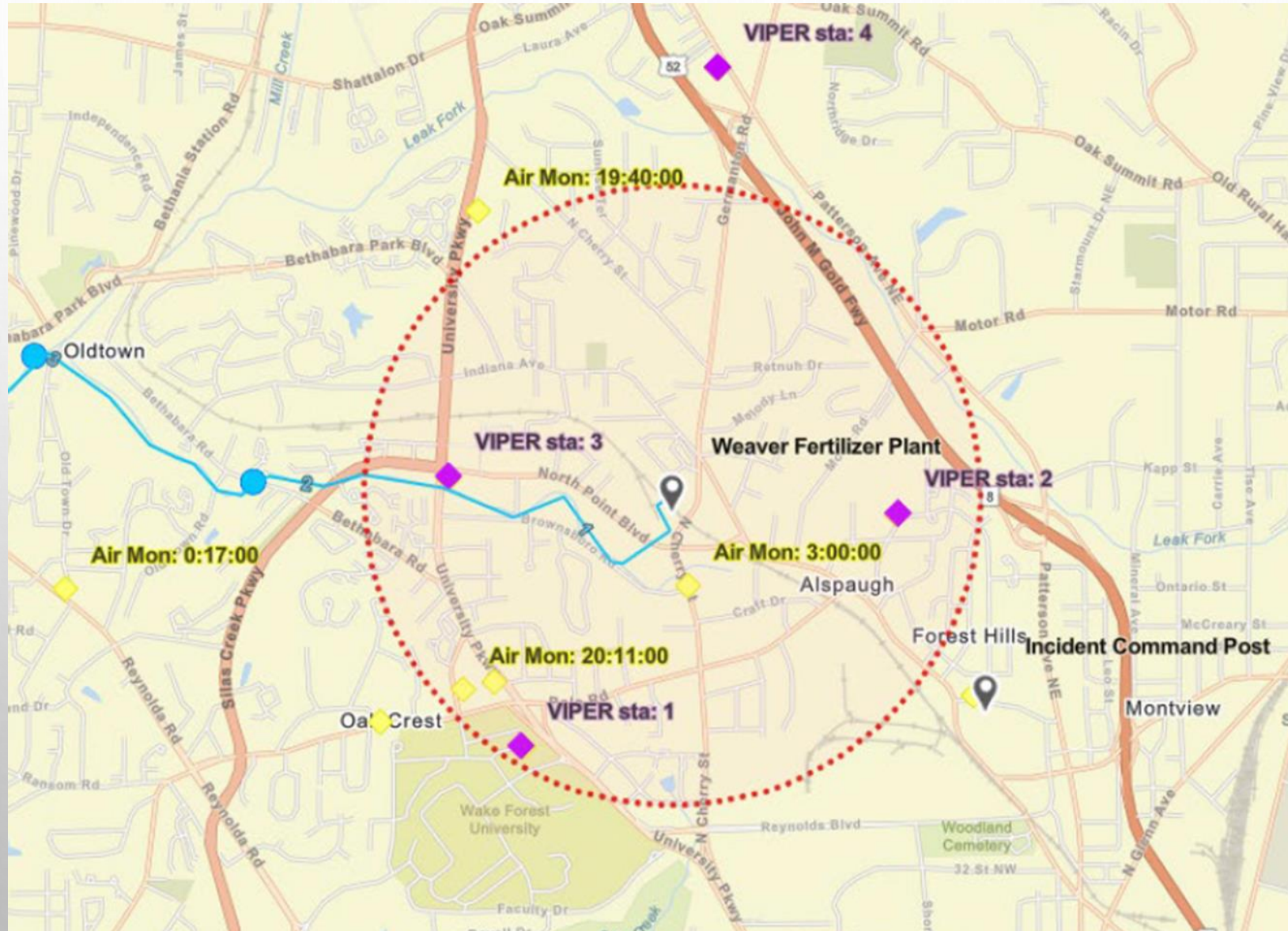
INITIAL TIMELINE

- **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: EIGHT-MEMBER EPA EMERGENCY RESPONSE TEAM ARRIVED IN WINSTON-SALEM, SET UP AIR AND WATER MONITORING LOCATIONS.**
- **FEB 2-5, 8:15 AM : LOCAL AND STATE REGULATORY GROUPS MEETING WITH EPA ONSITE COORDINATORS FOR UPDATES ON THE FIRE AND AIR/WATER MONITORING.**
- **FEB 2 PM: FIRE SUPPRESSION ACTIVITIES CONTINUE.**
- **FEB 2-6: FCEAP SENT OUT DAILY MEDIA RELEASES ADVISING CITIZENS TO EXERCISE PRECAUTIONS, AVOID SMOKE.**

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**






EPA ENHANCED AIR MONITORING



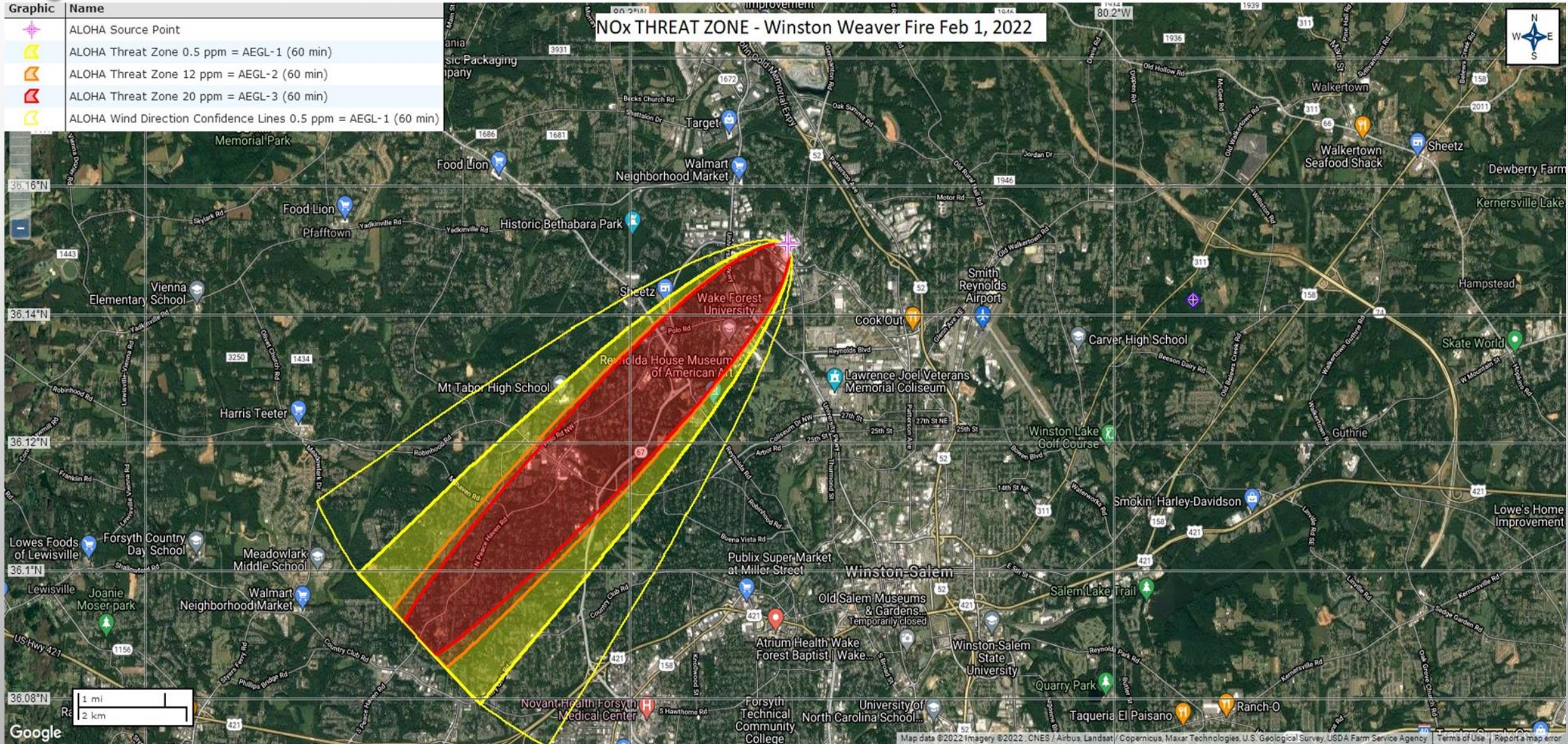
EPA STANDARD OPERATING GUIDELINES PARTICULATE MONITORING GUIDE

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

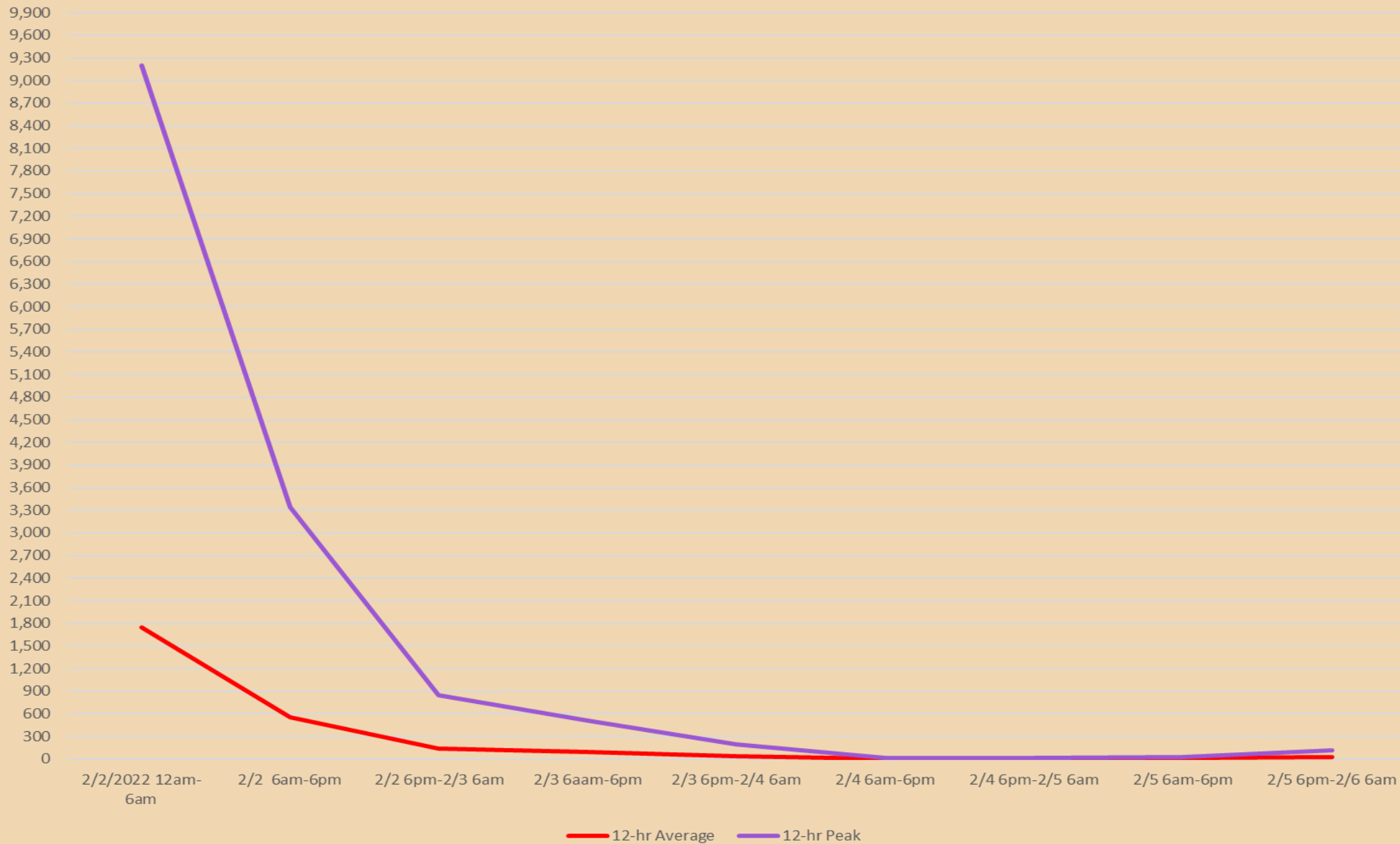
AIR QUALITY: AREA OF INITIAL IMPACT, TUESDAY 2/1

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)

NOx THREAT ZONE - Winston Weaver Fire Feb 1, 2022



PM2.5 Levels (ug/m3)



PARTICULATE MATTER (PM10/2.5) LEVELS OF CONCERN

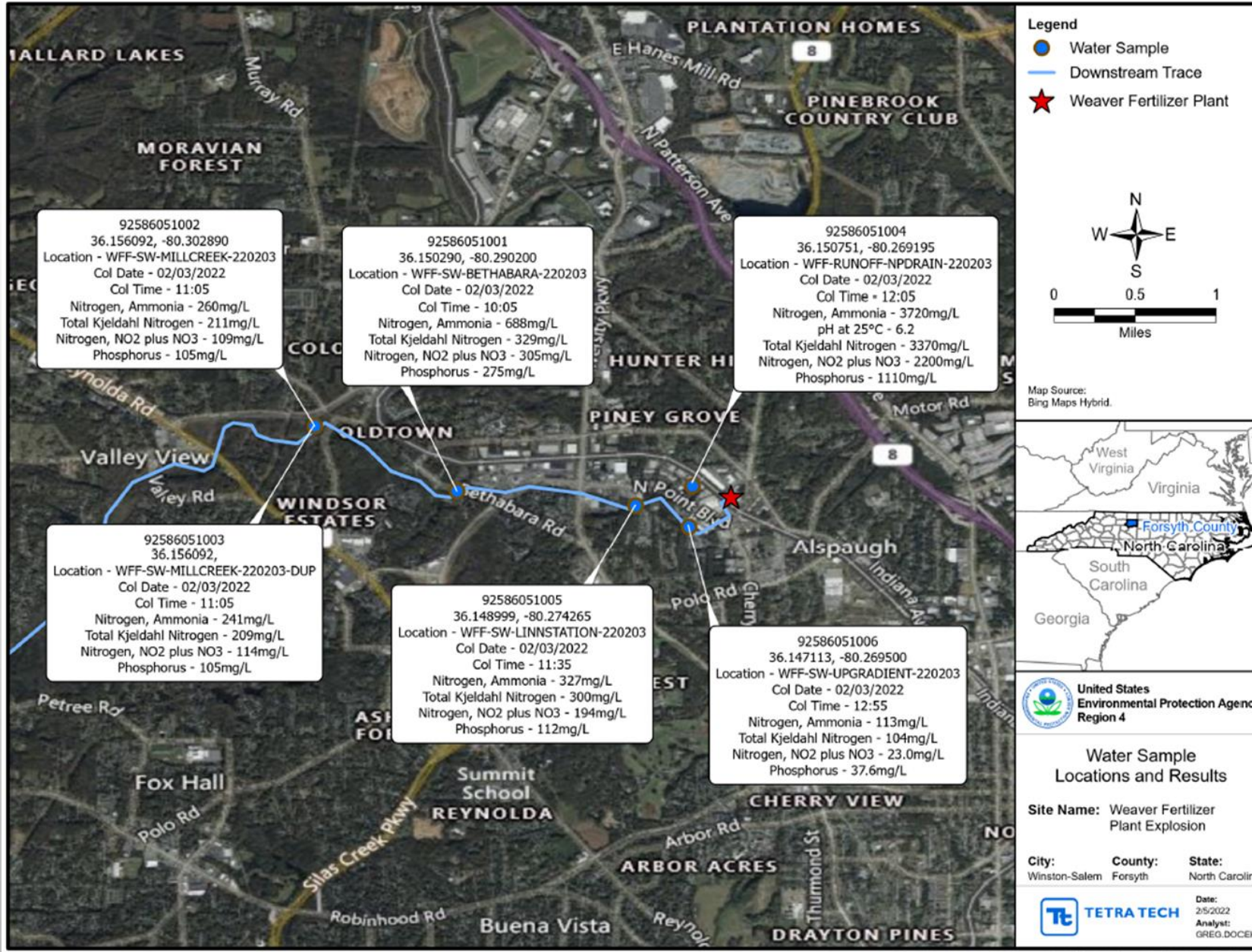
- **ENHANCED AIR MONITORING BY THE EPA EMERGENCY RESPONSE TEAM AROUND THE INCIDENT AREA BEGAN JUST BEFORE 12:00 AM ON TUESDAY NIGHT.**
- **HAZARDOUS: MONDAY NIGHT (1/31) THROUGH WEDNESDAY EVENING (2/2)**
- **UNHEALTHY: WEDNESDAY EVENING THROUGH FRIDAY MORNING (2/4)**
- **GOOD: FRIDAY MORNING THROUGH SATURDAY EVENING (2/5)**
- **MODERATE PM LEVELS WERE MEASURED INTERMITTENTLY IN A FEW LIMITED AREAS SATURDAY NIGHT (2/5).**

WATER QUALITY IMPACTS

- DURING THE FIRE OVER 4.2 MILLION GALLONS OF FIRE SUPPRESSION WATER WAS USED ON THE SITE.
- THIS FIRE SUPPRESSION WATER CONTAINED POLLUTANTS SUCH AS NITROGEN, PHOSPHORUS AND OTHER MATERIALS.
- DISCHARGE RESULTED IN A FISH KILL IN MONARCUS AND MILL CREEKS.
- EPA, NCDEQ AND CITY START STREAM SAMPLING OF MONARCUS CREEK, MILL CREEK, MUDDY CREEK DOWN TO YADKIN.

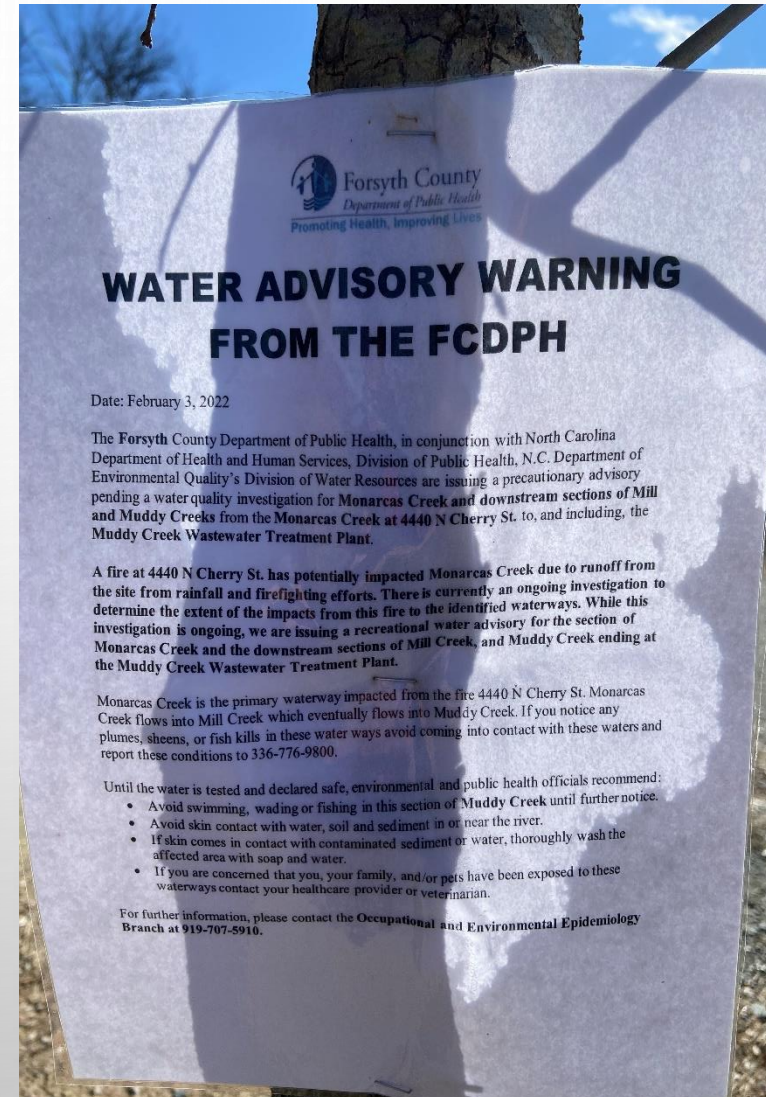


WATER QUALITY SAMPLING



WATER QUALITY IMPACTS

- INITIAL WATER QUALITY DATA SHOWS HIGH LEVELS OF NITROGEN AND PHOSPHORUS IN RECEIVING STREAMS.
- REGULATORY GROUPS INVOLVE THE STATE TOXICOLOGIST WHO DETERMINES THAT POSTING THE RECEIVING STREAMS IS WARRANTED.
- STAFF POSTED THE PUBLIC ACCESS POINTS ALONG THE IMPACTED STREAMS TO AVOID CONTACT (ENGLISH AND SPANISH).



BROWNSBORO ROAD SITE

- SAMPLING RESULTS UPSTREAM OF THE WEAVER DISCHARGE POINT ALSO YIELDED HIGH CONCENTRATIONS OF NITROGEN AND PHOSPHORUS.
- CITY STAFF TRACKED POLLUTANTS TO A SATELLITE STORAGE FACILITY OWNED BY WEAVER THAT WAS FULL OF FERTILIZER PRODUCTS.
- THIS LOCATION HAD RAW PRODUCT DISCHARGING INTO THE STORM DRAIN SYSTEM.



BROWNSBORO ROAD SITE

- ON FEBRUARY 5TH, THE CITY HAND DELIVERS A NOTICE OF VIOLATION TO WINSTON WEAVER INC. REQUIRING CLEANUP OF THE BROWNSBORO SITE.
- WINSTON WEAVER IMMEDIATELY DIRECTED THEIR CONTRACTOR TO START MAKING THE NEEDED SITE CORRECTIONS TO REMEDIATE THE DISCHARGE.
- 21,390 GALLONS OF LIQUID AND 16.20 TONS OF SLUDGE WAS REMOVED FROM THE SITE.



Winston Salem

Field Operations
Stormwater Division

City of Winston-Salem
P.O. Box 2511
Winston-Salem, NC 27102
CityLink 336.727.8000

February 5, 2022

Mr. Shane Collins
General Manager
Winston Weaver Company, Inc.
4440 Cherry Street
Winston-Salem, N.C. 27105

RE: NOTICE OF VIOLATION

Illicit discharge of fertilizer-laden stormwater runoff from 4020 Brownsboro Road
Winston Weaver's Remote Product Storage Location (**Hand Delivered**)

Dear Mr. Collins:

This letter will serve as a Notice of Violation (NOV) of the illicit discharge of fertilizer-laden stormwater runoff into the municipal separate storm sewer system (MS4). City Ordinance Section 75-6(a)(1) states, "It shall be unlawful for any person to allow, directly or indirectly, anything other than stormwater, whether solid, liquid, or vegetative, to be discharged, deposited, or placed in such a location that may reach, or be blown or scattered into the municipal separate storm sewer system (MS4) ...". The MS4 is defined as all storm drain systems, watercourses, and water of the State within the City limits and any of the City's extra territorial jurisdictions. All discharges to the stormwater drainage system must be monitored and controlled to eliminate pollution sources from entering the waters of the State.

On February 3, 2022, at 4:15 P.M., Mr. Keith Huff, Field Operations Director, and Mr. Andrew Allen, Assistant Stormwater Director, observed an illicit discharge of fertilizer-laden stormwater runoff being released into a down-gradient catch basin, which is situated within the curb line of Brownsboro Road. This illicit release reached the city's MS4, which flows directly into Monarcas Creek, tributary of Mill Creek. Raw and finished fertilizer products were placed outside Winston Weaver's storage facility and exposed to rainwater. As a result, the exposed products were dissolved by rainwater and conveyed to the city's MS4 and, thus, into the receiving stream of Monarcas Creek.

The Stormwater Division of the City of Winston-Salem is requiring the following action items to be done by Winston Weaver to abate the above-mentioned illicit discharge:

1. Immediately cease and desist the illicit discharge of fertilizer-laden stormwater runoff from Winston Weaver's product storage location of 4020 Brownsboro Road.
2. Please place all raw and finished products under roof, thus eliminating the exposure to rainwater.

CityLink311

Call 311 or 336-727-8000
citylink@cityofws.org

City Council: Mayor Allen Joiner, Denise D. Adams, Mayor Pro Tempore, North Ward; Barbara Hanes Burke, Northeast Ward; Robert C. Clark, West Ward; John C. Larson, South Ward; Jeff MacIntosh, Northwest Ward; Kevin Mandy, Southwest Ward; Annette Scipio, East Ward; James Taylor, Jr., Southeast Ward; City Manager: Lee D. Garrity

WEAVER PLANT SITE

- IN EFFORTS TO REDUCE POLLUTANT LOADING INTO SURFACE WATERS, A BERM WAS CONSTRUCTED AROUND THE PLANT SITE AND ANY REMAINING FIRE SUPPRESSION WATER AND RAINWATER WAS COLLECTED IN THE BERM.
- CONTAMINATED WATER CONTAINED IN THE BERM WAS PUMPED INTO TANKERS AND HAULED OFFSITE FOR PROPER DISPOSAL.
- STAFF CONDUCT DAILY INSPECTIONS OF OPERATIONS.



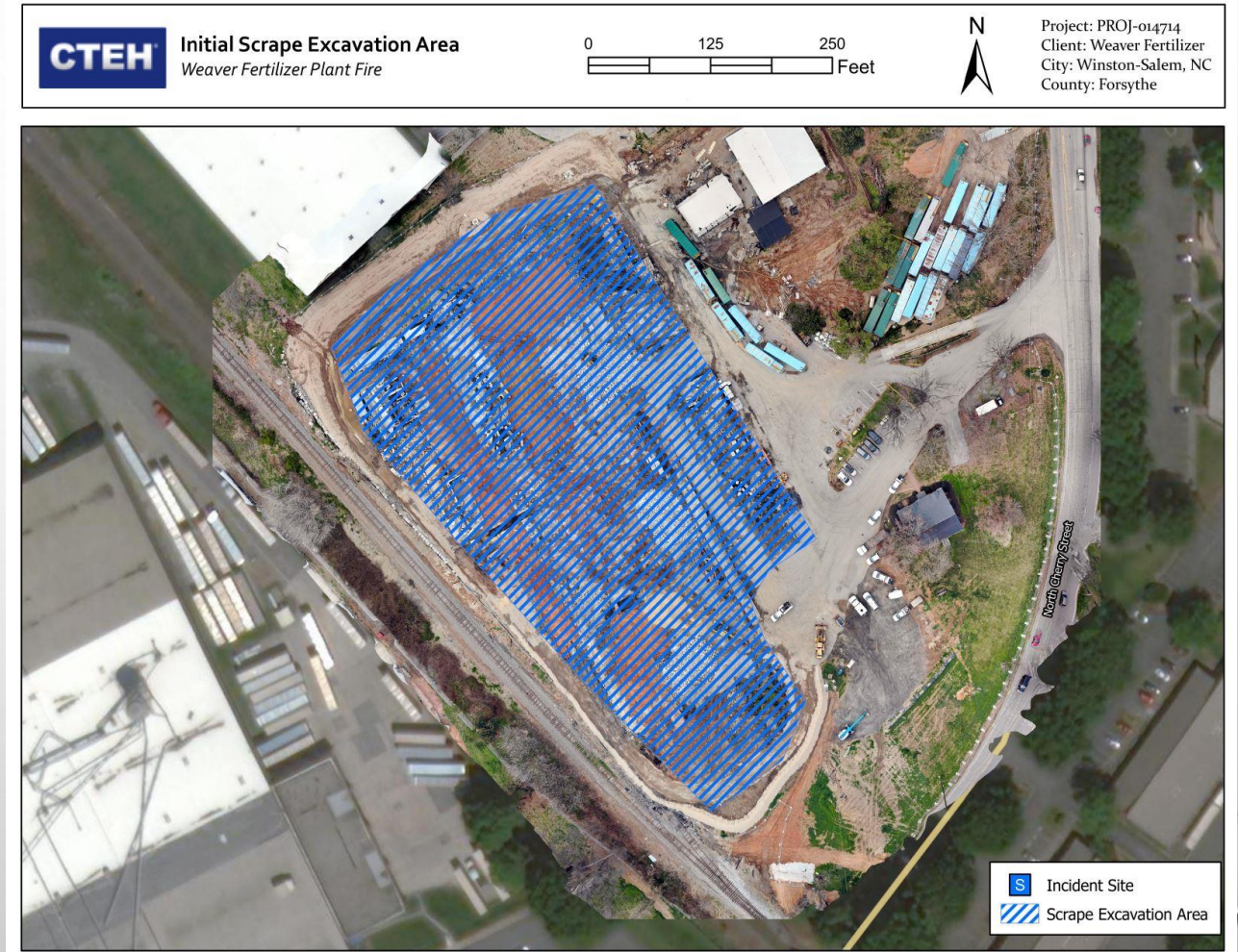
WEAVER PLANT SITE

- IN EFFORTS TO REDUCE POLLUTANT LOADING INTO SURFACE WATERS, A 900,000 GALLON CONTAINMENT BERM WAS CONSTRUCTED AROUND THE PLANT SITE TO COLLECT ANY RUNOFF.
- CONTAMINATED WATER CONTAINED WITHIN THE BERM WAS PUMPED INTO TANKERS AND STORED ONSITE IN 18 20,000 FRAC TANKS UNTIL TESTING WAS COMPLETED.
- WATER WAS THEN HAULED OFFSITE FOR PROPER DISPOSAL.



WEAVER PLANT SITE

- DEMOLITION (STRUCTURES, CONCRETE, ASPHALT) AND PRODUCT REMOVAL PHASE IS COMPLETE, WHICH REVEALED RESIDUALS IN THE SOIL.
- WEAVER HAS REQUESTED PERMISSION TO SCRAPE/EXCAVATE THE TOP 6" TO 12" OF AFFECTED SOIL IN ORDER TO IMPROVE STORMWATER RUNOFF .



NEXT STEPS

- SMALL CONCENTRATIONS OF POLLUTANTS ARE STILL REACHING SURFACE WATERS.
- NC INACTIVE HAZARDOUS SITES BRANCH IS REQUESTING ENVIRONMENTAL SITE ASSESSMENTS OF THE BROWNSBORO AND WEAVER PLANT SITES.
- THE RESULTS OF THESE ASSESSMENTS WILL DETERMINE THE LEVEL OF SITE REMEDIATION NEEDED.
- RAW PRODUCTS FROM THE BROWNSBORO SITE ARE BEING HAULED TO DAIRY FARMS FOR LAND APPLICATION.
- MONITORING OF THE RECEIVING WATERS CONTINUES.

QUESTIONS?