

Marion, NC

North Carolina Division of Air Quality Air Monitoring Site Id. 37-111-0004

- Suspected start date of exceptional event: 2/11/08 (probably during afternoon)
- Date of high Federal Reference Method (FRM) PM_{2.5} reading: 2/12/08 [24.64 $\mu\text{g}/\text{m}^3$].
- Suspected exceptional event: Wildfire
- Data is flagged as RT (Wildfire – U.S.)

NC DAQ Contact

J.P. Chauhan, Environmental Chemist

919-715-8666 or jp.chauhan@ncmail.net

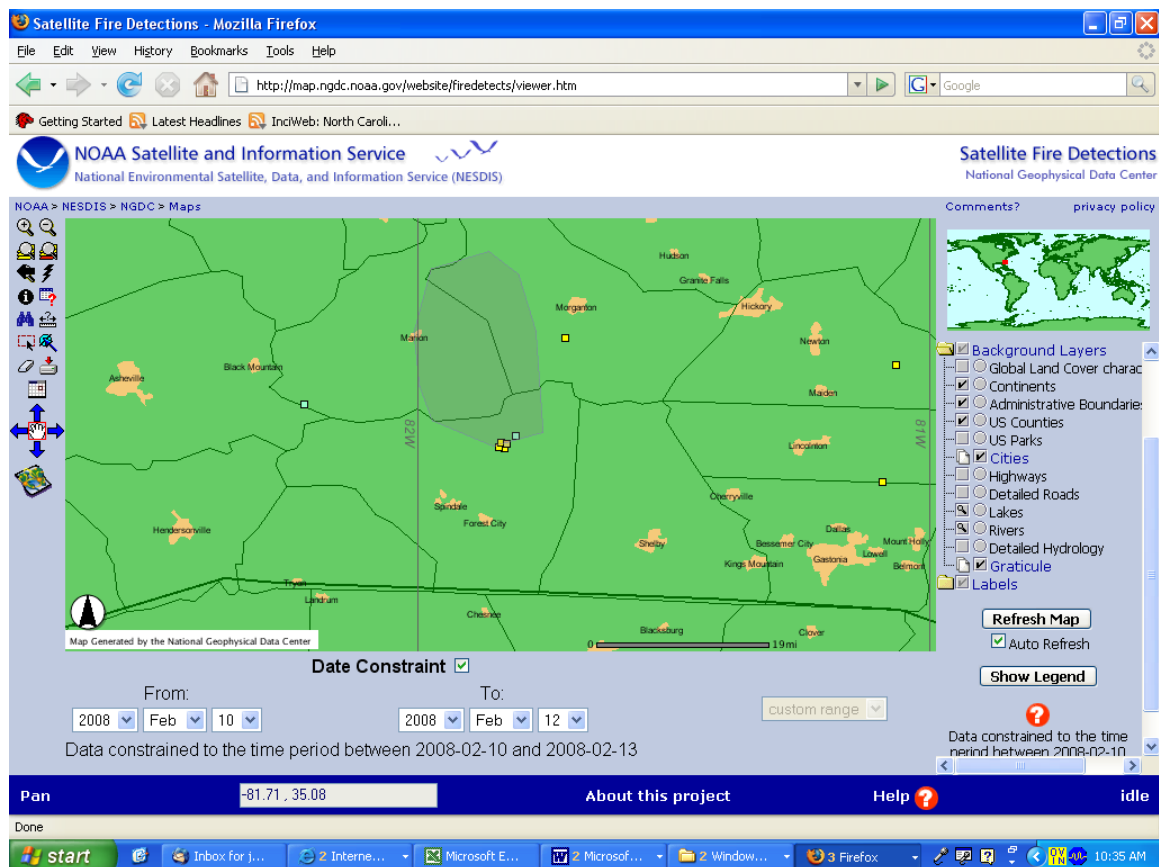


Figure 1 The plume is spread over a fairly wide area. The monitor is more in the plume than the shown location of the town. The fires are located at -81.85 (lon), 35.47 (lat) about 18 miles from Marion (as the crow flies).

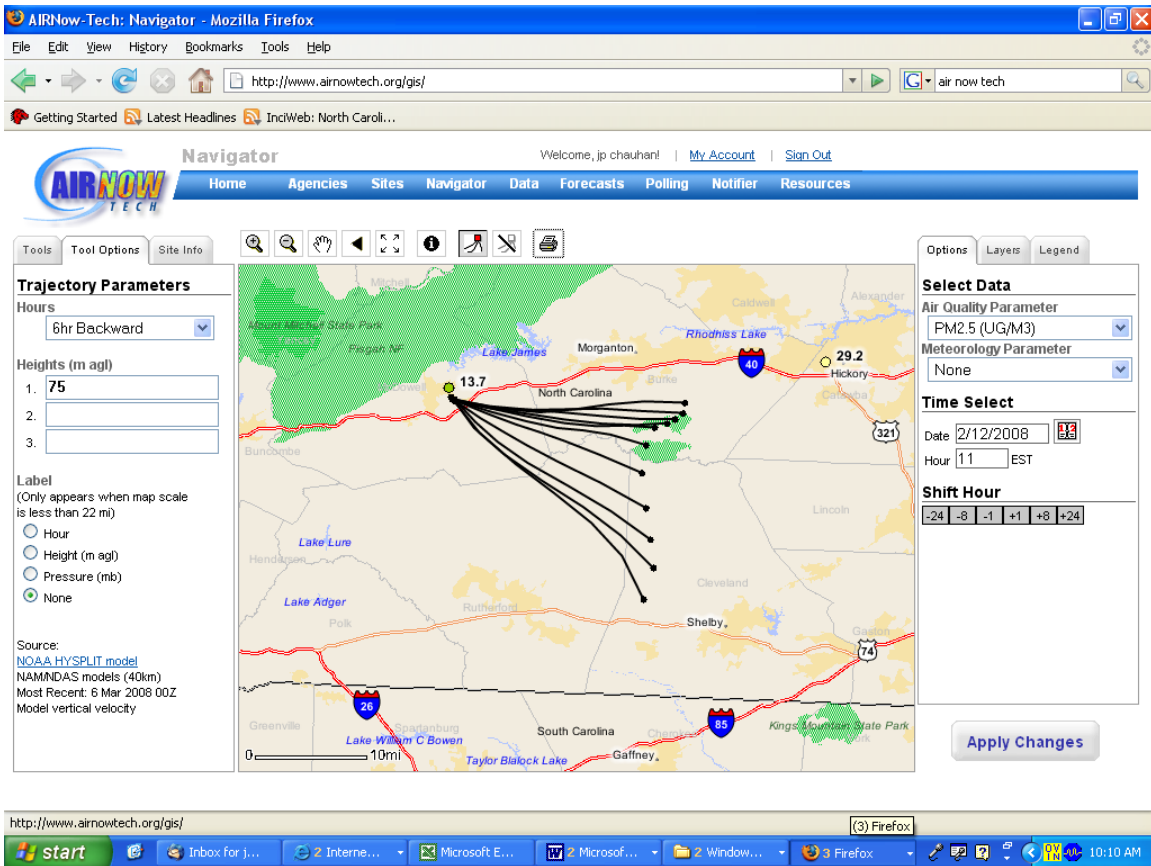


Figure 2 Morning back trajectories show air coming to Marion likely came through the plume. Marion hourly PM2.5 was higher in the morning. Back trajectories show air traveled over the fires in Northeast Rutherford County in the early morning, and cut through the plume for the rest of the day. Teom at Marion read as high as 33 ug/m3 around 8 AM.

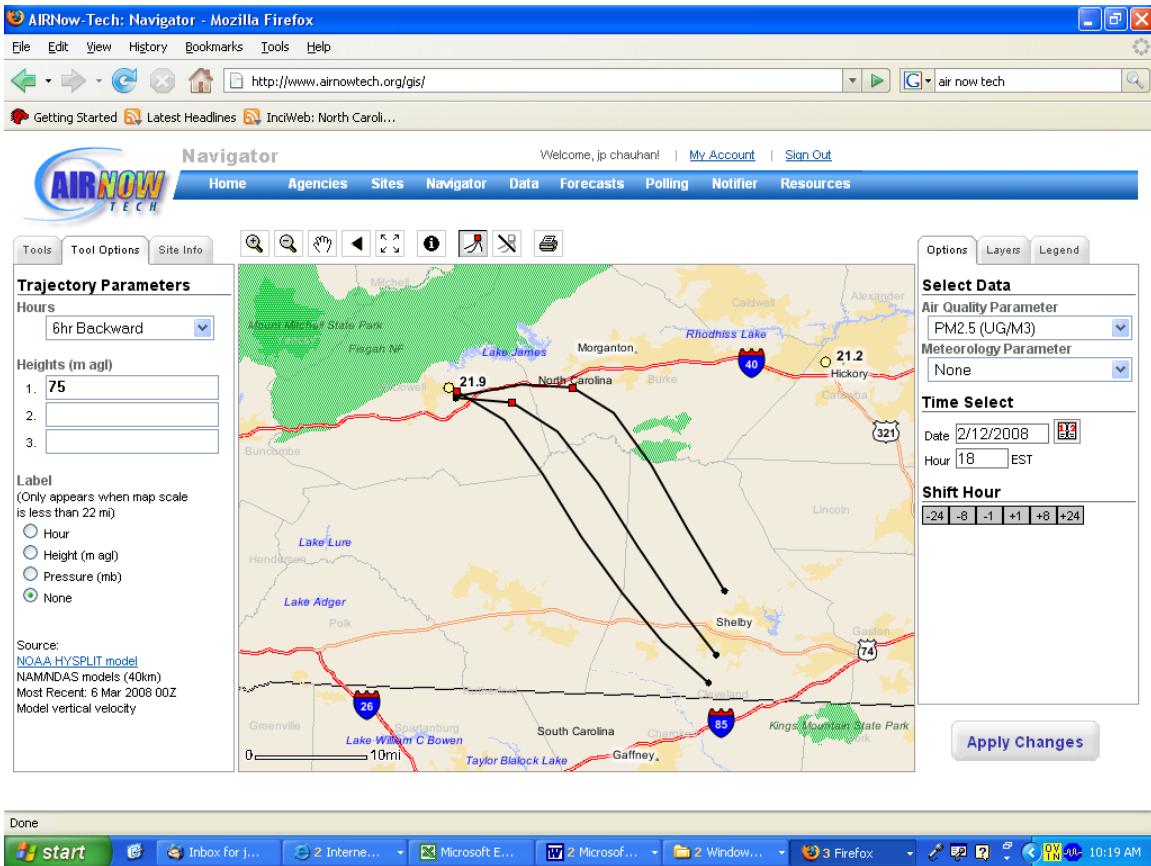


Figure 3 Vertical mixing around 12 noon reduced concentrations to only about 18 ug/m3. Monitor readings stay around 18 until 5 PM. They rise at night to above 20. Three trajectories travel over the fire locations at 6, 7, and 8 PM or late afternoon.

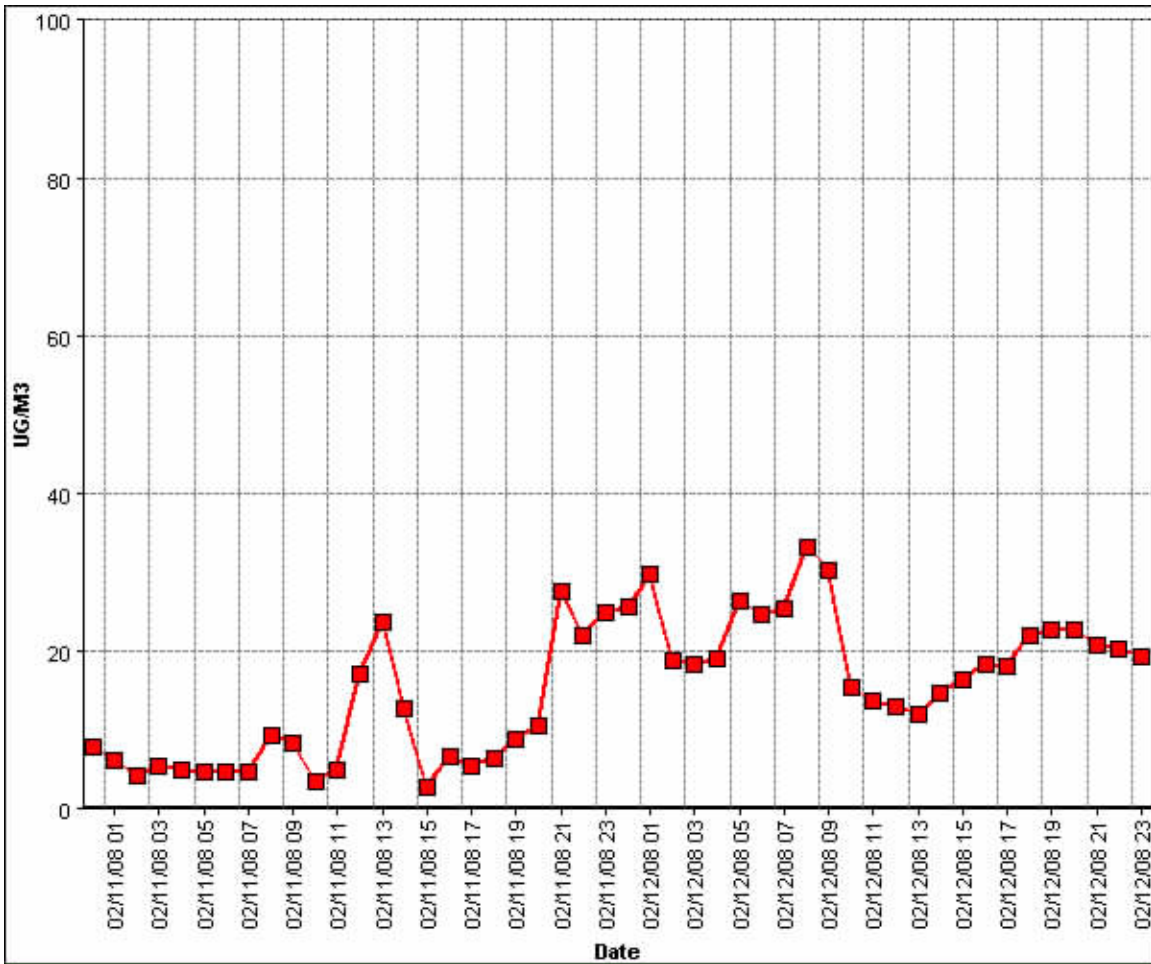


Figure 4: Marion Teom-PM2.5 shows some elevated reading and spikes in the morning til 9 AM afterwhich readings look normal. The Teom-PM2.5 data rises at 9 PM of 2/11/08, but FRM monitor ran on 2/12/08 and the data was being affected by the smoke in the early morning of 2/12/08.

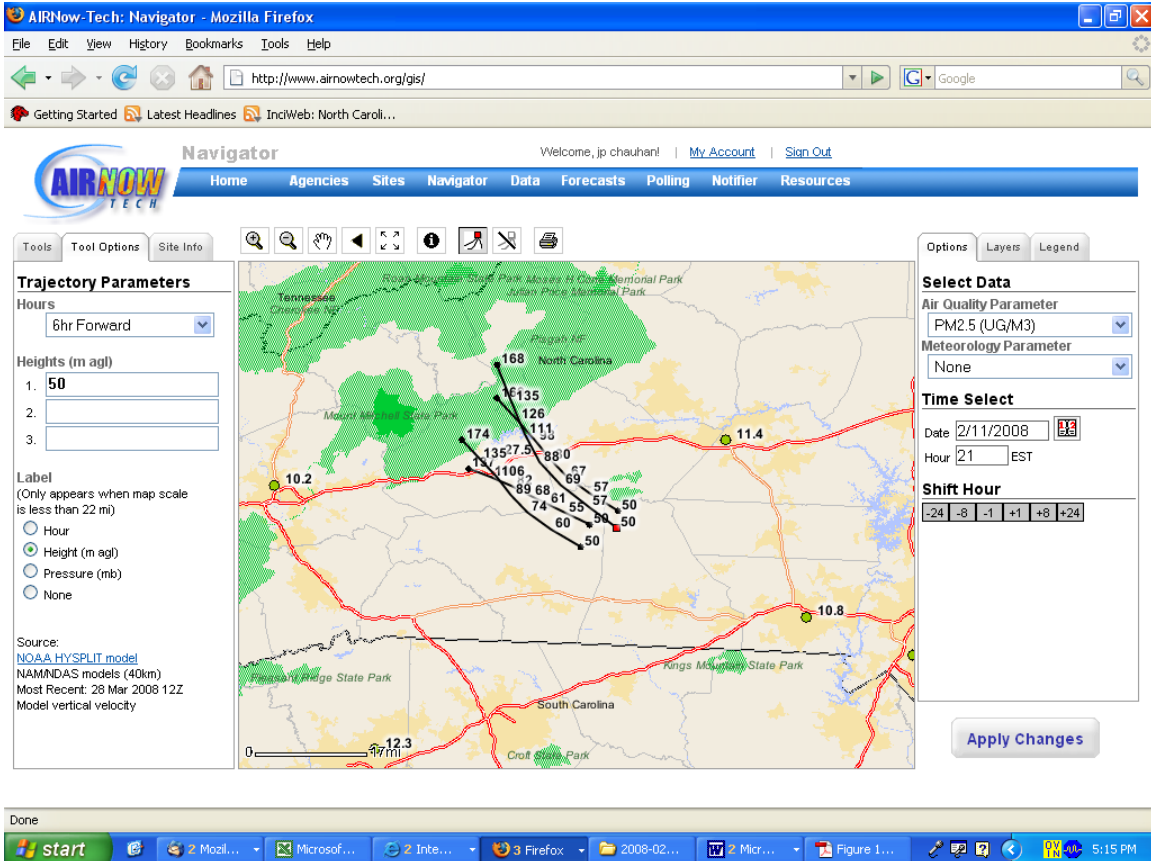


Figure 1: Late night forward trajectories on the previous day (2/11/08) show that smoke would have gone towards the monitor in conjunction with the high TEOM readings. The FRM-PM2.5 sampled on 2/12/2008 and measured 24.64 micrograms per cubic meter for its daily average.

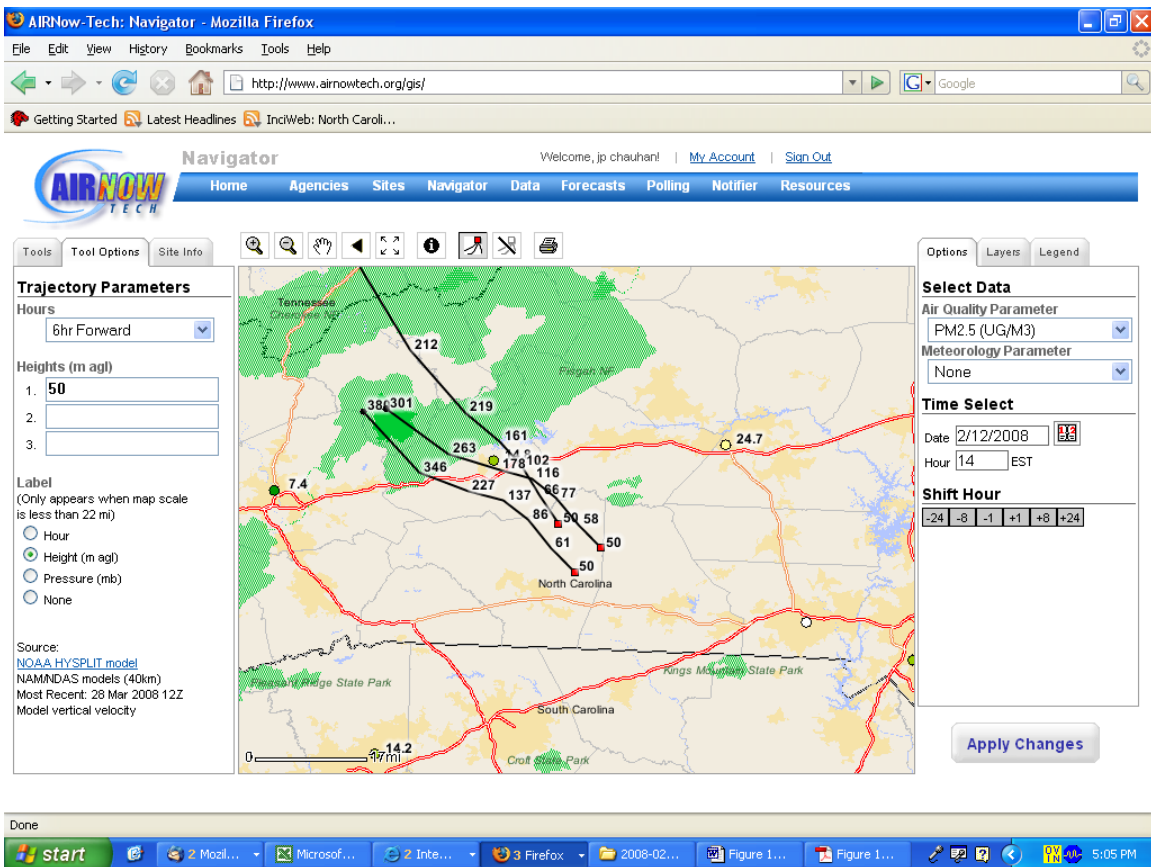


Figure 2: Forward trajectories show where the smoke would have traveled. Several mid-day forward trajectories of air from the fire are passing by the Marion monitor around 2 PM.