

Ozone National Ambient Air Quality Standard Health Exceedances on July 1, 2022

Exceedance Locations and Levels

On Friday, July 1, 2022, there were no exceedances in New Jersey of the National Ambient Air Quality Standard (NAAQS) for ozone (daily maximum 8-hour average of 70 ppb). See Table 1.

Table 1. New Jersey Ozone Concentrations on 7/1/2022

STATION	Daily Maximum 8-Hr Average (ppb)
Ancora State Hospital	49
Bayonne	60
Brigantine	41
Camden Spruce St	49
Chester	57
Clarksboro	51
Colliers Mills	53
Columbia	61
Flemington	59
Leonia	62
Millville	48
Monmouth University	46
Newark Firehouse	61
Ramapo	54
Rider University	66
Rutgers University	67
Washington Crossing*	57
TOTAL EXCEEDANCES	0

*The Washington Crossing station is operated and maintained by EPA as part of the nationwide Clean Air Status and Trends Network (CASTNET).

From the out-of-state stations within New Jersey's ozone non-attainment areas, there were four (4) exceedances of the ozone NAAQS. See Table 2.

Table 2. Ozone Concentrations at Out-of-State Monitoring Stations in New Jersey's Ozone Non-Attainment Areas on 7/1/2022

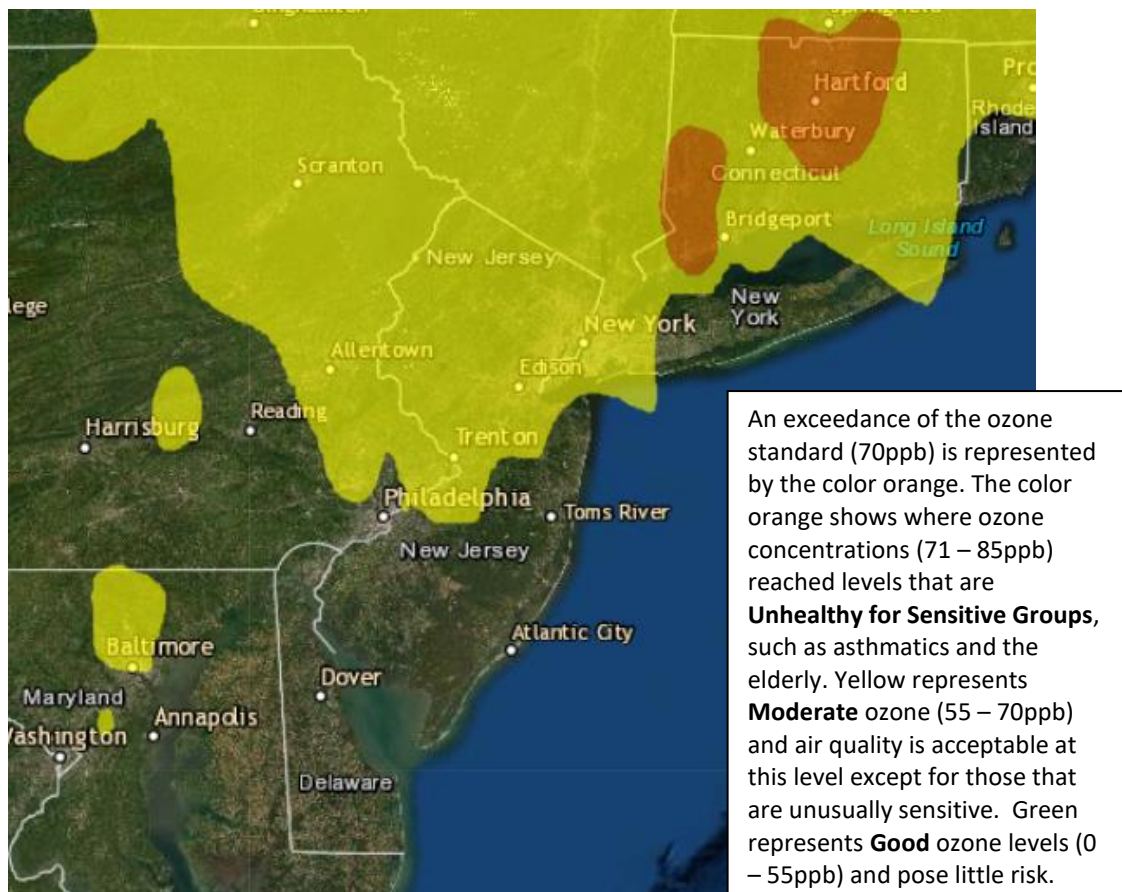
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	75
CT	Greenwich	83
CT	Madison-Beach Road	57
CT	Middletown-CVH-Shed	74
CT	New Haven	60
CT	Stratford	64
CT	Westport	73
DE	BCSP (New Castle Co.)	51
DE	BELLFNT2 (New Castle Co.)	52
DE	KILLENS (Kent Co.)	49
DE	LEWES (Sussex Co.)	47
DE	LUMS 2 (New Castle Co.)	49
DE	MLK (New Castle Co.)	51
DE	SEAFORD (Sussex Co.)	49
MD	Fair Hill	49
NY	Babylon	46
NY	Bronx - IS52	68
NY	CCNY	68
NY	Flax Pond	52
NY	Fresh Kills	57
NY	Holtsville	44
NY	Pfizer Lab	70
NY	Queens	56
NY	Riverhead	46
NY	Rockland Cty	61
NY	White Plains	67
PA	BRIS (Bucks Co.)	59
PA	CHES (Delaware Co.)	50
PA	NEWG (Chester Co.)	36
PA	NORR (Montgomery Co.)	56
PA	LAB (Philadelphia Co.)	44
PA	NEA (Philadelphia Co.)	57
PA	NEW (Philadelphia Co.)	56
	TOTAL EXCEEDANCES	4

The number of days in 2022 on which exceedances of the ozone NAAQS were recorded for all the states within New Jersey's ozone non-attainment areas is summarized in Table 3.

Table 3. Number of Days Ozone NAAQS was Exceeded in NJ's Non-Attainment Areas in 2022

STATE	# of Days NAAQS was Exceeded January 1 – July 1, 2022 NAAQS = 70 ppb
Connecticut	5
Delaware	0
Maryland	1
New Jersey	2
New York	2
Pennsylvania	1

Figure 1. Ozone Air Quality Index for July 1, 2022



Source: www.airnow.gov

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: <http://nj.gov/dep/baqp/glossary.html>

Weather

High pressure began to shift offshore on Friday, July 1st as a cold front over the Great Lakes Region began to make its way southward. Light winds out of the southwest and abundant sunshine in the morning and early afternoon hours allowed for temperatures to rise into the mid-80s and low 90s across the region. By midafternoon, storms began to develop over Pennsylvania and push westward, bringing rain showers and cloudy skies over Eastern Pennsylvania, New Jersey, and New York City. These clouds and storms were able to suppress ozone formation in these areas. However, in Connecticut, mostly sunny skies persisted, allowing for ozone formation to continue. These conditions, along with a previously polluted airmass and transportation of pollutants from upwind states, allowed for exceedances to occur in Connecticut.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2, 3, and 4 show the back trajectories of different wind heights for the monitored exceedance(s) on this day. The figures illustrate where the air came from during the 48 hours preceding the 8-hour ozone standard exceedances. A transport analysis is provided with each figure shown below along with a map of the National Air Quality Index for the previous day (Figure 5). The monitoring station(s) that were chosen to model back trajectories are listed in Table 4.

Table 4. Monitoring Stations with an 8-hr Ozone Exceedance that were selected to Run 48-hr Back Trajectories

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	75
CT	Middletown	74
CT	Westport	73

Figure 2. 48-hour Back Trajectories for July 1, 2022 at 10 meters

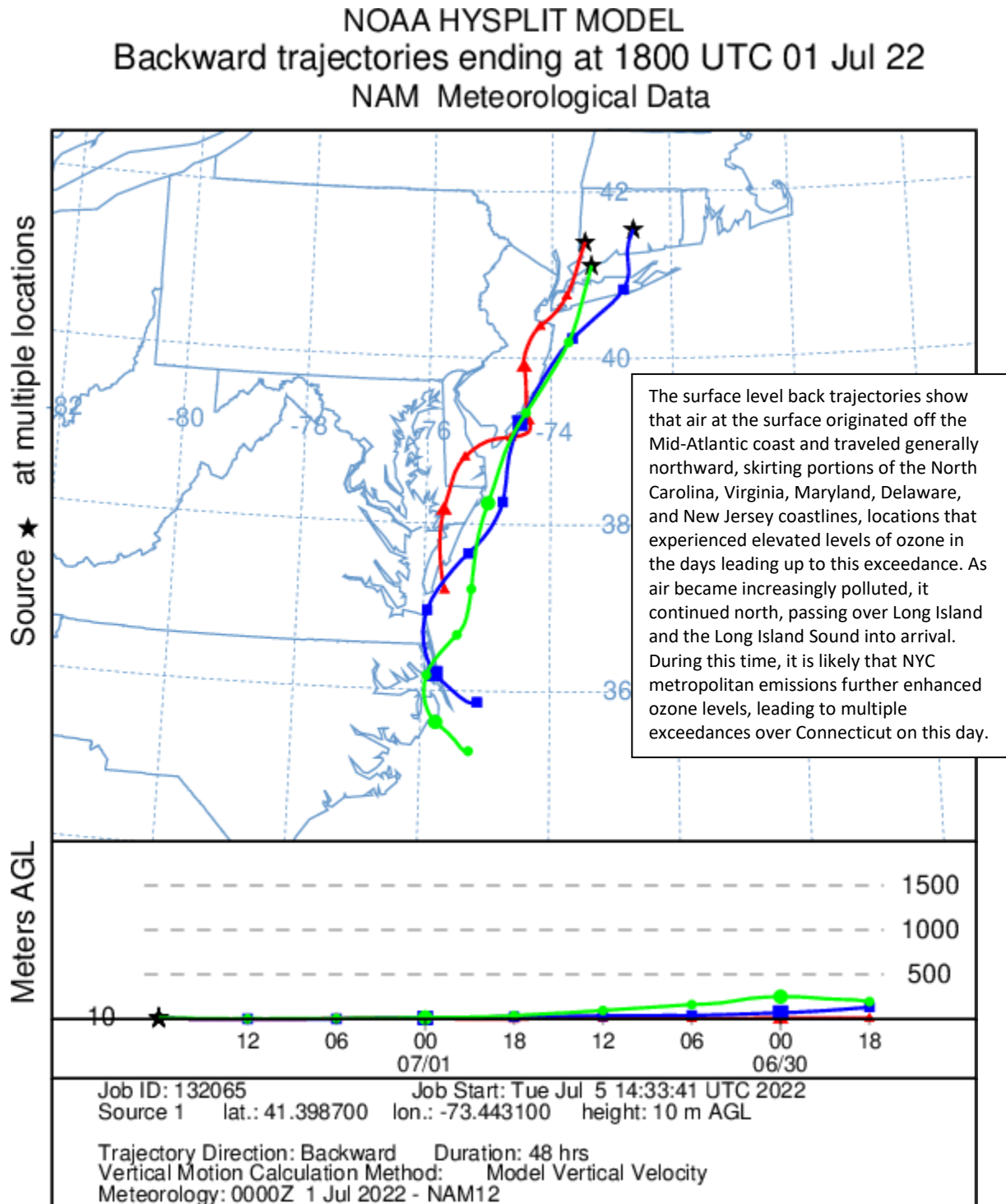


Figure 3. 48-hour Back Trajectories for July 1, 2022 at 500 meters

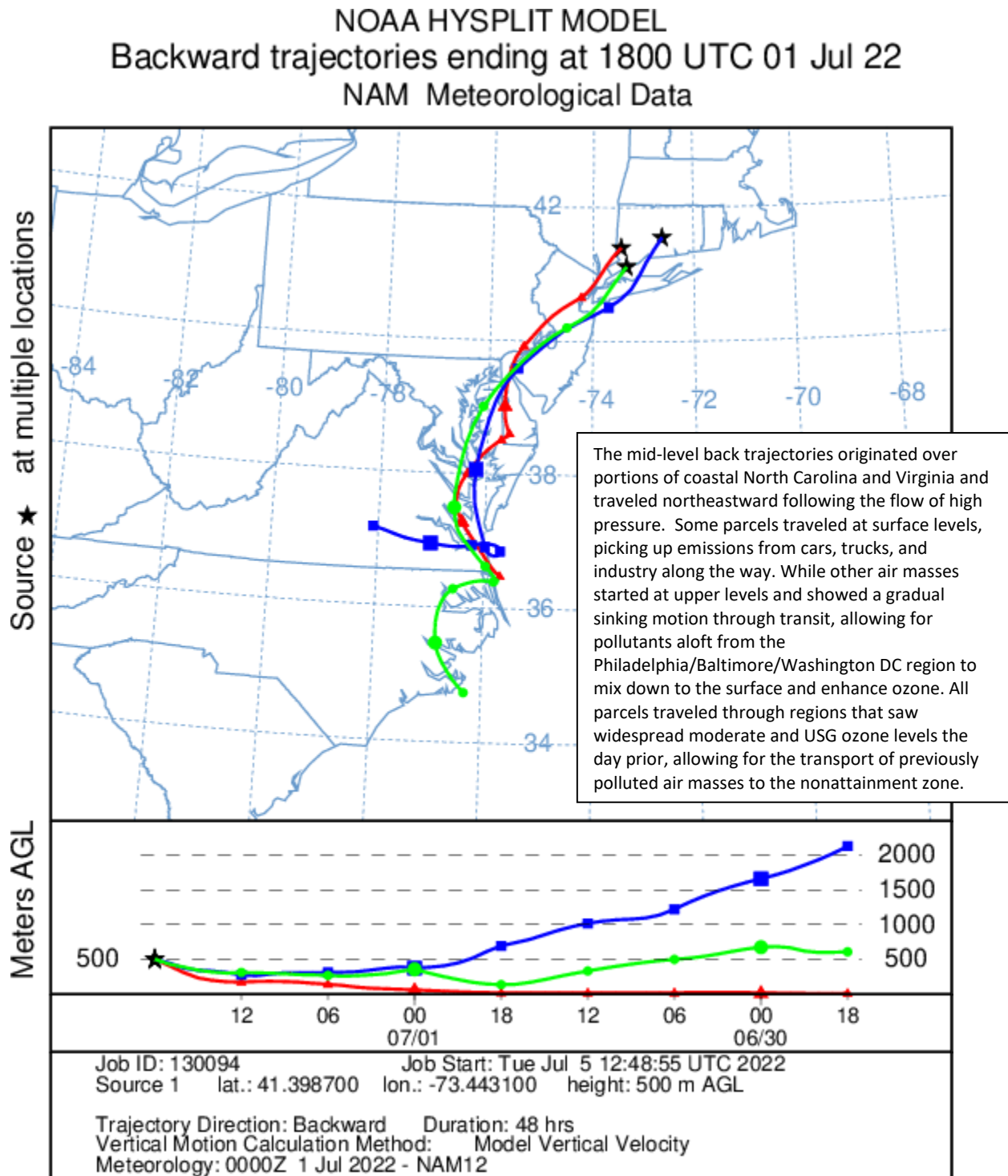


Figure 4. 48-hour Back Trajectories for July 1, 2022 at 1500 meters

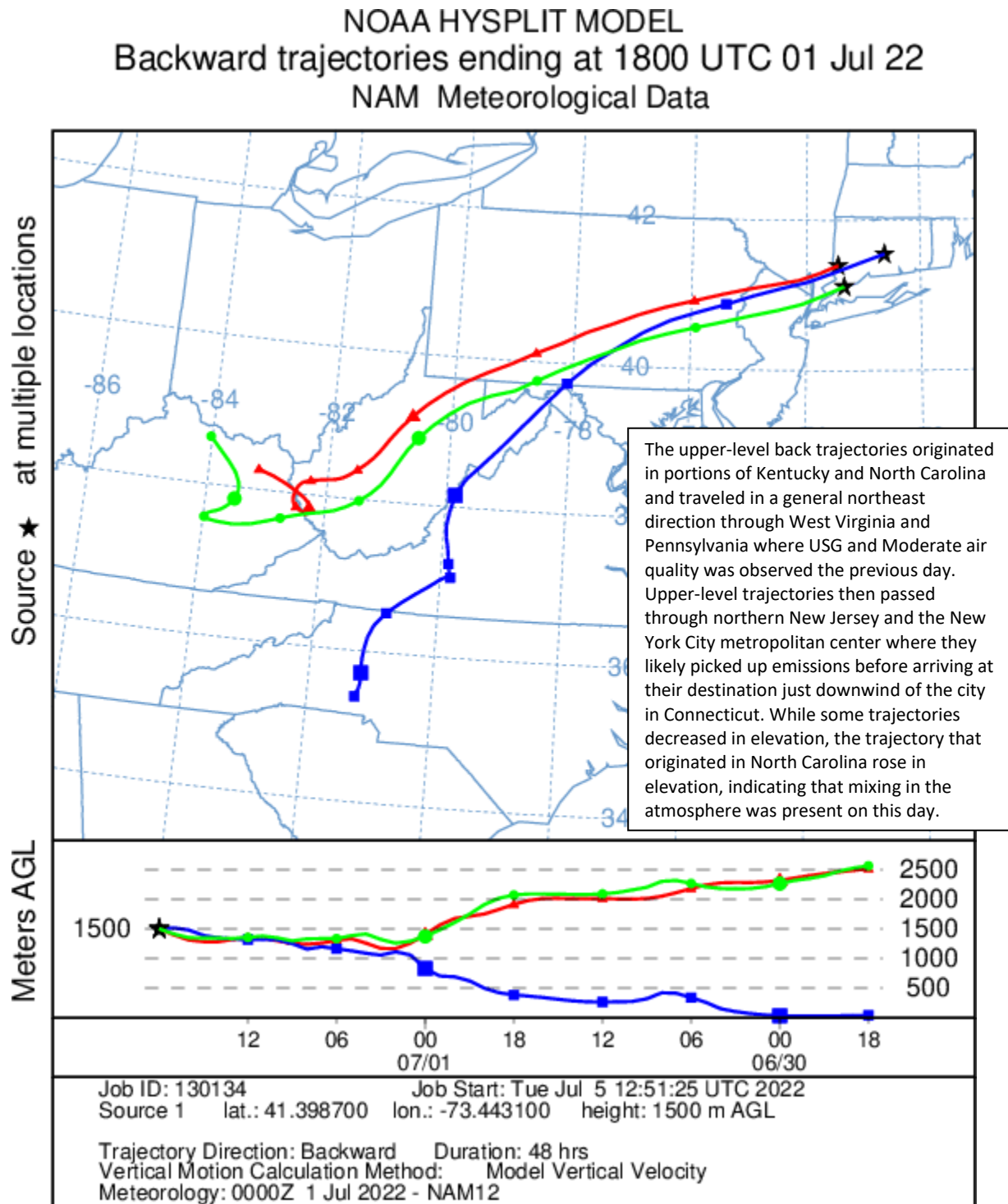
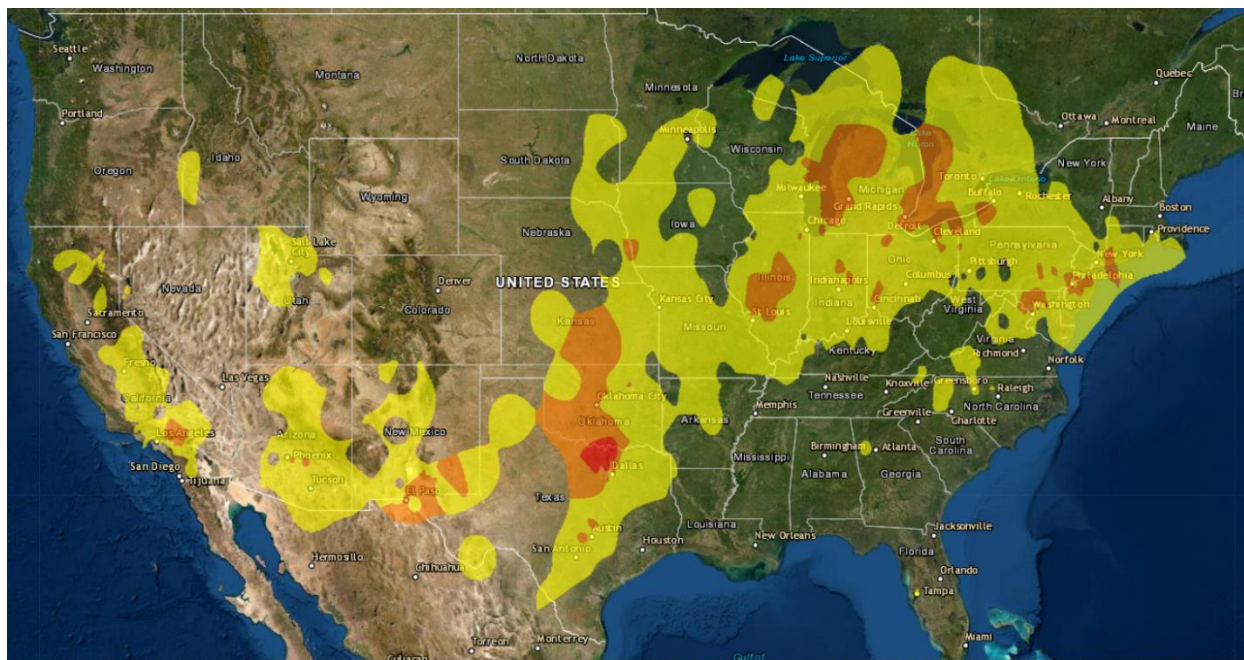


Figure 5. Air Quality Index for the United States on June 30, 2022



Source: www.airnow.gov

How is Ozone Created?

Ground-level ozone is an air pollutant known to cause several health effects and negatively impact air quality and the environment in New Jersey. Ozone is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) react in the presence of sunlight. Ozone can irritate any person's lungs, but the effect may be more pronounced for those with existing lung-related deficiencies, and therefore, one should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

Learn more about your local ozone air quality forecast by visiting the "What's Your Air Quality Today?" page at <https://www.nj.gov/dep/baqp/aqitoday.html>.