

Ozone National Ambient Air Quality Health Standard Exceedances on September 17, 2015

Exceedance Locations and Levels

On Thursday, September 17, 2015, eight (8) exceedances of the 8-hour average NAAQS for ozone were recorded in New Jersey: Ancora, Bayonne, Brigantine, Camden Spruce Street, Leonia, Monmouth University, Rider University, & Rutgers University. Bayonne recorded the highest 8-hr average ozone level with a concentration of 92 ppb. The highest 1-hour average ozone concentration recorded on September 17, 2015 in New Jersey was 101 ppb at the Bayonne station, which is below the 1-hour NAAQS of 120 ppb.

Thursday marks the 19th day in 2015 on which exceedances of the 8-hour ozone NAAQS were recorded in New Jersey. By the 17th of September in 2014, there were a total of 3 days on which ozone exceedances were measured in New Jersey, and there were 10 days by this same date in 2013.

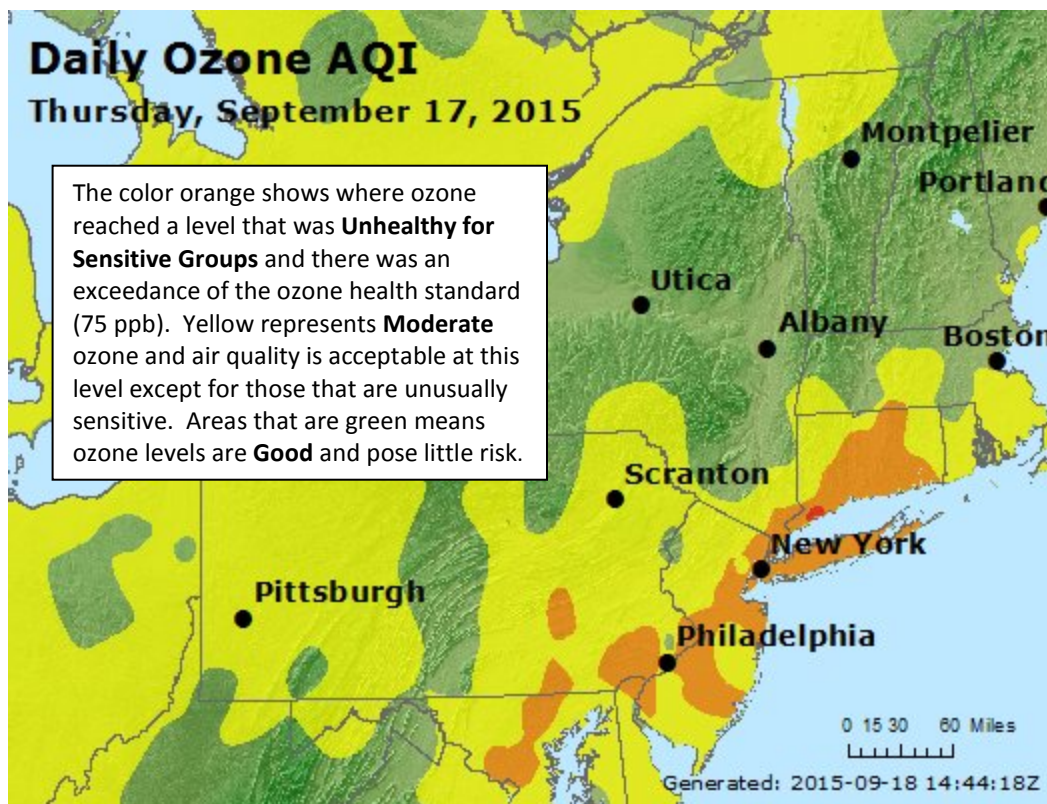
There is a group of monitoring stations in designated counties of 5 states, New York, Connecticut, Pennsylvania, Delaware, and Maryland that are included in New Jersey's ozone non-attainment areas. From this group of stations in the other neighboring states, there were twenty-four (24) exceedances of the 8-hour ozone NAAQS recorded on Thursday, September 17. The highest 8-hour value was 96 ppb recorded at the Westport, CT site. The highest 1-hour average ozone concentration recorded was 107 ppb at the Stratford, CT station, which is below the 1-hour NAAQS of 120 ppb.

Thursday marks the 9th day in 2015 on which exceedances of the 8-hour ozone NAAQS were recorded in Pennsylvania. The corresponding number of days for Connecticut is twenty (20), twelve (12) days for New York, three (3) days for Maryland, and two (2) days for Delaware.

List of Monitoring Sites in Region that Exceeded the Health Standard

State	Site Name	9/17/2015, Maximum 8-hour O3 Concentration, ppb
CT	Westport	96
CT	Stratford	94
NJ	Bayonne	92
CT	Greenwich	91
CT	New Haven – Criscuolo Park	88
PA	Philadelphia - NEA	86
NY	Babylon	85
NY	Susan Wagner	85
PA	BRIS	85
PA	CHES	85
CT	Middletown	84
DE	BCSP	82
NY	White Plains	82
CT	Madison Beach Road	81
DE	BELLFNT2	81
NY	Pfizer Lab	81
NJ	Leonia	80
NJ	Camden Spruce Street	79
NY	Queens	79
NY	Riverhead	79
NY	IS52	78
PA	Philadelphia - NEW	78
NJ	Brigantine	77
NJ	Monmouth University	77
NJ	Rider University	77
NJ	Rutgers University	77
NY	CCNY	77
NY	Holtsville	77
PA	NWEG	77
NJ	Ancora	76
PA	NORR	76

Figure 1. Ozone Air Quality Index for September 17, 2015



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

Meteorological data from across the region showed temperatures reached into the high 80s° F, with stagnating conditions. Winds were calm for the first half of the day and then shifted to a light southwesterly flow for the remaining period. Skies were mostly sunny. Sufficient sunlight, combined with warm temperatures and stagnant conditions are all features commonly seen with an ozone episode.

The ozone exceedances on September 17, 2015 were part of a multi-day ozone event caused by a stationary high pressure system anchored over the eastern seaboard. Thursday, September 17 marks the second consecutive day that ozone exceedances occurred in the state of New Jersey.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2 and 3 show the back trajectories for 10 selected monitored exceedances for September 17. Figure 2 shows where the low level winds came from during the 48 hours preceding the high ozone levels at these locations. The figure indicates that the low level winds meandered across the Mid-Atlantic States during the prior 48-hours. Figure 3 shows that the higher level winds were also meandering across the Mid-Atlantic States due to the multi-day stagnation event. The lack of ventilation caused by the stalled high pressure system allowed pollutants in the region, such as emissions from cars, trucks, and industry to build up day after day.

Figure 2. 48-hour Back Trajectories at 10 meters

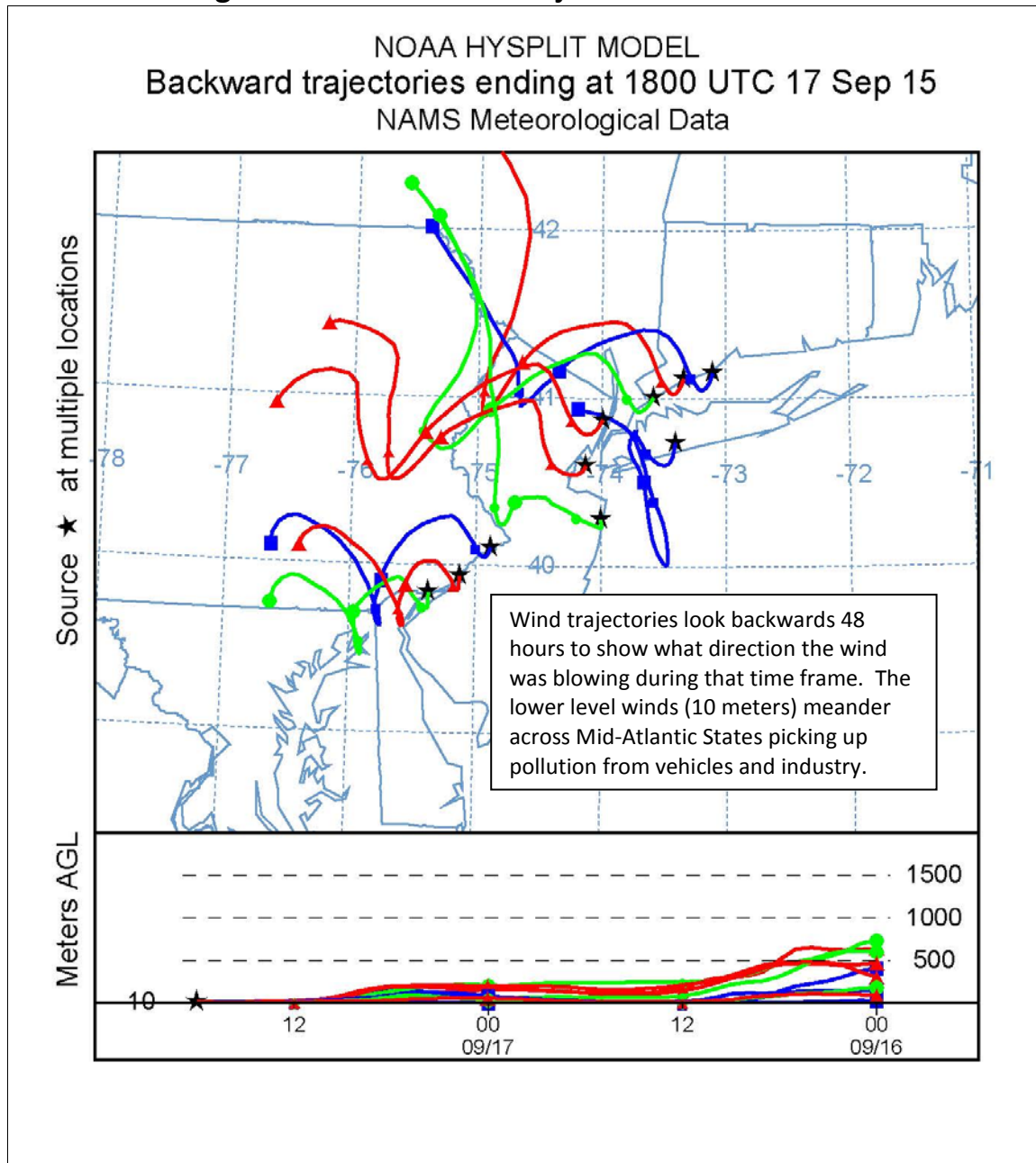
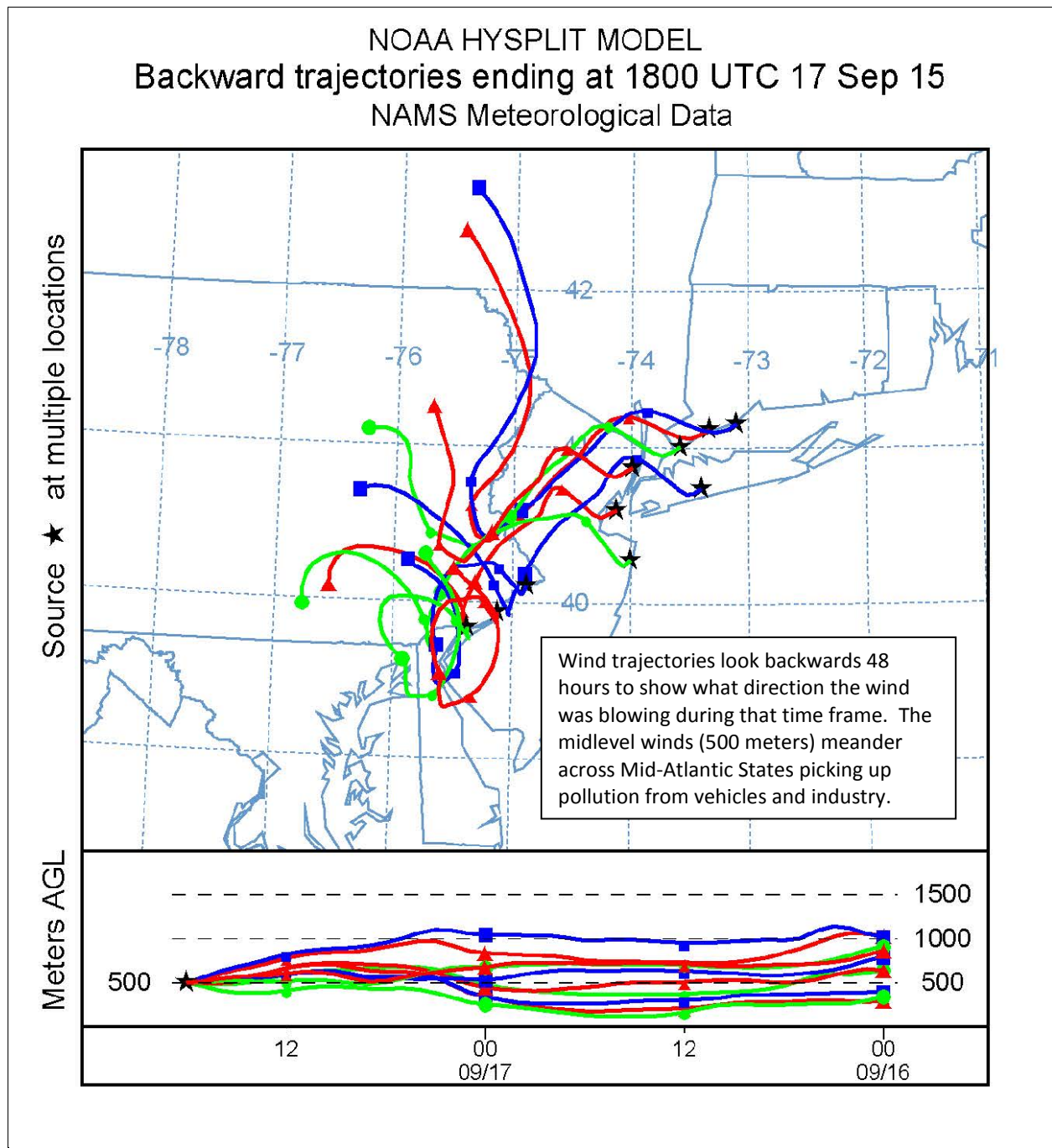


Figure 3. 48-hour Back Trajectories at 500 meters



How is Smog Created?

Ground-level ozone, also known as smog, is an air pollutant known to cause a number of health effects and negatively impact air quality and the environment in the state of New Jersey. Smog is formed when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight. Smog can irritate any set of lungs, but those with lung-related deficiencies should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

The “What's Your Air Quality Today?” page at <http://www.nj.gov/dep/cleanairnj/> tells you how to sign up to receive notifications and find out when your local air has reached unhealthy ozone levels.