Air Quality Forecast and Dispersion Outlook of Allegheny County, Pennsylvania for 2022-04-23

Allegheny County Health Department

Air Quality Forecast

This is the daily forecasted Air Quality Index (AQI) for each area provided by the PA Department of Environmental Protection. The AQI is based on PM2.5 or Ozone, whichever is forecasted to be higher.

Forecast Period	Pittsburgh Area	Liberty-Clairton Area
Today	PM2.5	PM2.5
Saturday	Moderate	Moderate
04/23/2022	64 AQI	64 AQI
Tomorrow	PM2.5	PM2.5
Sunday	Moderate	Moderate
04/24/2022	78 AQI	78 AQI

Table 1. Please refer the Air Quality Index guide

Today's Forecast:

A warm front will pass off to the northeast Saturday, allowing for the return of sunshine with a warmer afternoon. With the arrival of the warmer air, both PM2.5 and ozone levels will reach into the moderate range. *** Sundayâ??s forecast: Sunshine and a few clouds and continued on the warm side Sunday, as temperatures rise into the lower 80s. Moderate air quality will continue, with PM2.5 readings highest during the morning hours as a strong inversion occurs. *** Mondayâ??s forecast: A cold front approaching during the day Monday will lead to a couple of showers and a thunderstorm late in the day and/or during the evening. Another strong morning inversion will lead to moderate PM 2.5 average wise, but increasing cloud cover will lower ozone to the upper good range.

Guide to the Air Quality Index (AQI)			
Color	Description	Meaning	AQI
Red	Unhealthy	Everyone should limit exertion outdoors.	151 - 200
Orange	Unhealthy for Sensitive Groups	Sensitive people should limit exertion outdoors.	101 - 150
Yellow	Moderate	Extremely sensitive people may wish to limit outdoor exertion.	51 - 100
Green	Good	No health impacts are expected in this range.	0 - 50

Data provided by the PA Department of Environmental Protection

ACHD Surface Temperature Inversion Report

This is the 7 AM surface-based temperature inversion report for Allegheny County.

This morning's surface inversion of ~0 °C with a depth of ~0 m is estimated to break at –.

This surface inversion can be characterized as: None (None / Slight / Weak / Moderate / Strong).

Yes, an upper inversion starting below 1000 m is reported

ACHD Air Dispersion 36-Hour Forecast

This is the dispersion forecast for Allegheny County starting from this morning through tomorrow afternoon. The atmospheric dispersion index is a rating of the atmosphere's ability to transport pollution away from its source and is based on emissions and weather. Better atmospheric dispersion can improve air quality.

Forecast Period		Atmospheric Dispersion Index	Surface Inversion Strength	Wind (dir, mph)
Today	Morning	Generally Poor - 13	None	SW - 6
	Afternoon	Very Good - 131	–	SW - 10
Tonight	Evening	Very Poor - 5	–	S - 5
	Overnight	Very Poor - 2	–	S - 6
Tomorrow	Morning	Good - 79	None	S - 6
	Afternoon	Very Good - 183	–	SW - 11

Table 2. Please refer the Atmospheric Dispersion Index guide and the daily Surface Temperature Inversion Report.

ACHD Remarks:

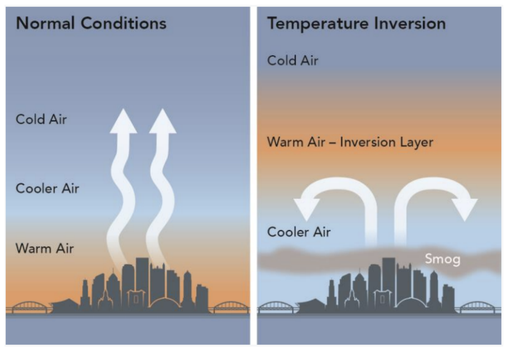
Chance of rain this morning and rain likely tomorrow. Also, the sounding data from the National Weather Service was unavailable, so I had to use an alternative source.

Data provided by the National Weather Service (NWS) Fire Weather Planning Forecast and PIT NWS Products

Guide to the Atmospheric Dispersion Index						
Very Poor	Poor	Generally Poor	Fair	Generally Good	Good	Very Good
1 - 6	7 - 12	13 - 20	21 - 40	41 - 60	61 - 100	> 100

What does the Surface Temperature Inversion Report mean

A surface temperature inversion is a weather pattern that stops mixing of the air near the ground, and pollution released into the air tends to remain at higher concentrations.



Surface temperature inversion conditions include how strong the surface inversion is (in °C), how high the inversion is above the surface (in meters), and when the inversion is expected to break (in Eastern Standard Time). Also included is whether an upperlevel inversion or inversions exist, starting at about 1,000 meters.

Surface Temperature Inversion Characterization

- 0-0.9 C°: Slight
- 1-2.9 C°: Weak
- 3-4.9 C°: Moderate
- ≥5 C°: Strong