

September 4, 2025

Mr. Sean Wenrich, P.E.  
Environmental Engineer Manager  
Pennsylvania Department of  
Environmental Protection  
400 Market Street, 12th Floor  
Harrisburg, PA 17101

**Subject: Evaluation of Emission Reduction Credit use for Homer City Generation,  
1750 Power Plant Rd, Homer City, PA**

Dear Mr. Wenrich,

On behalf of Homer City Generation, L.P. (Homer City), AECOM has prepared the following assessment of the proposed transfer of Volatile Organic Compound (VOC) Emission Reduction Credits (ERCs) for use by Homer City at their proposed facility located at 1750 Power Plant Rd, Homer City, PA. Homer City submitted a Plan Approval application (Application No. 32-00457A) for their proposed power project which was deemed administratively complete by the Department on May 8, 2025.

Ozone formation is an indirect secondary pollutant as result of NO<sub>x</sub> and VOC emissions reaction with sunlight. Thus, it is not directly controlled from sources but indirectly controlled through NO<sub>x</sub> and VOC precursor limitations. Since ozone formation is a result of sunlight and can therefore be affected by ambient weather conditions, it is considered a regional pollutant in which precursor emissions can impact ozone formation between states. Both Pennsylvania and New York are both within the Ozone Transport Region (OTR), which was established as part of the Clean Air Act amendments of 1990. The OTR already demonstrates equivalence because the region is treated by law as a single area for ozone management. Additional analysis contained in this letter provides justification for the equivalence of the ERCs beyond the fact that the ERCs are from within the OTR.

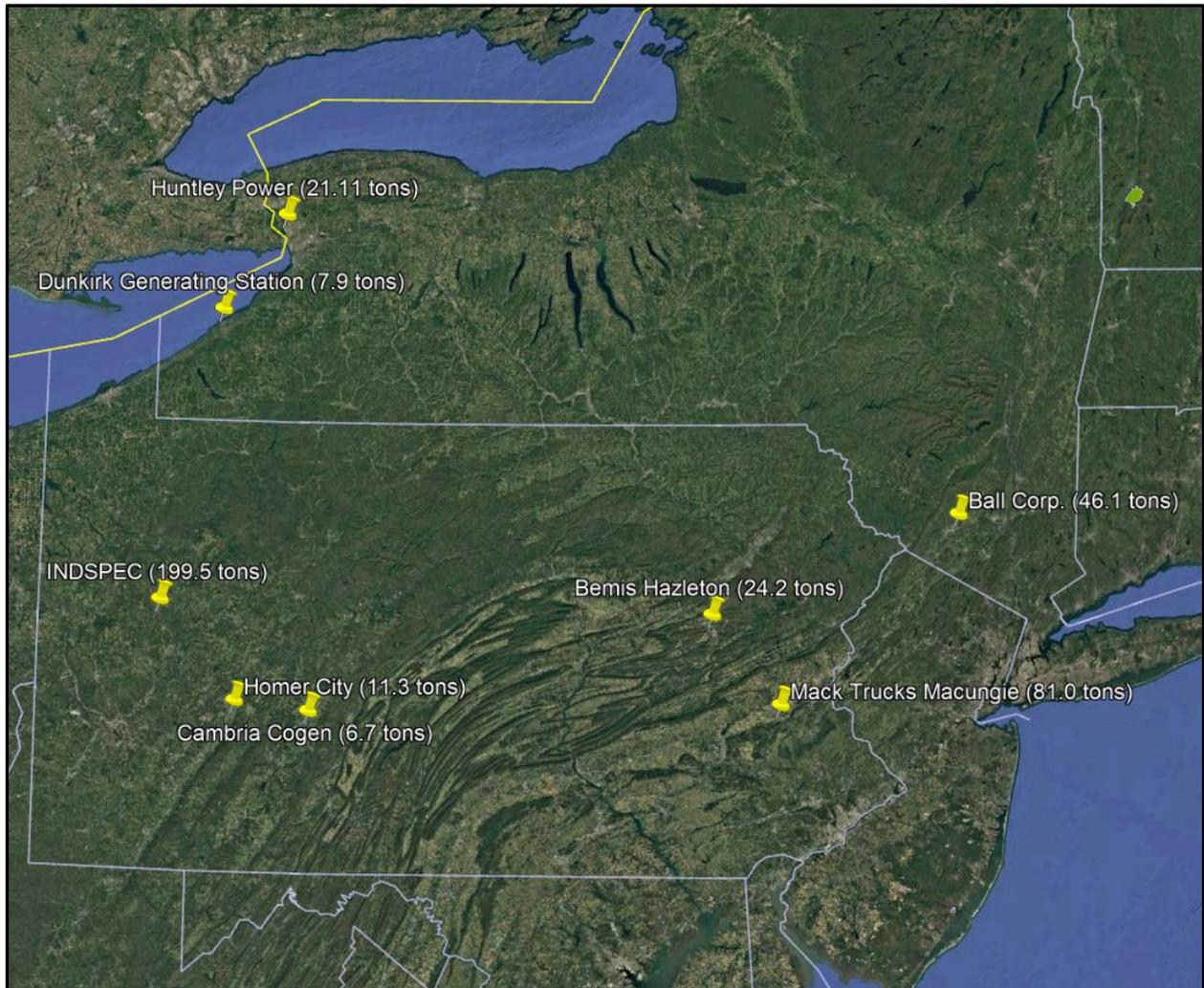
The Homer City facility is located in Indiana County, PA which is an unclassified/attainment area for the 2008 8-hour ozone standard. All of the facilities in which Homer City will acquire offsets are located in the OTR, where any area is considered to be an affected area for ozone. Table 1 lists the sources for which Homer City is requesting approval by the Department through the following ambient equivalency demonstration. Figure 1 shows the location of the ERC generating sources relative to Homer City.

VOC emissions from the proposed project will result in a potential net emissions increase of 320.9 tons. The requirement in the OTR is to obtain offsets for flue/stack emissions at a 1.15:1 ratio based on 25 Pa. Code §127.210(a), thus Homer City will need to procure 369.035 tons of VOC offsets. Based on Figure 1, more than 50% of these offsets will come from INDSPEC and Cambria Cogen, sources which are less than 100 km from Homer City.

**Table 1 VOC ERC Generating Facilities**

ERC Generating Facility	Ozone Nonattainment Area Classification	Tons VOC ERCs by Facility	Ton VOC ERCs by Source ID	VOC ERC Expiration Date
Dunkirk Power	Chautauqua County, NY; Marginal Nonattainment (2008 standards) Unclassifiable / attainment (2015 standards)	7.9	7.9	12/31/2025
Huntley Power	Erie County, NY; Unclassifiable / attainment (2008 & 2015 standards)	21.11	21.11	3/1/2026
Mack Trucks Macungie	Lehigh County, PA; Unclassifiable / attainment (2008 & 2015 standards)	81.00	9.796	12/4/2026
			59.151	12/8/2026
			6.577	12/8/2026
			4.921	12/8/2026
			0.547	12/8/2026
			0.008	8/1/2027
Bemis Hazleton	Luzerne County, PA; Unclassifiable / attainment (2008 & 2015 standards)	24.18	12.35	1/24/2028
			11.83	3/1/2028
Cambria Cogen	Cambria County, PA; Unclassifiable / attainment (2008 & 2015 standards)	6.7	6.7	6/18/2029
Ball Metal Beverage	Orange County; Unclassifiable / attainment (2008 & 2015 standards)	46.08	46.08	8/29/2033
INDSPEC	Butler County, PA; Unclassifiable / attainment (2008 & 2015 standards)	199.54	68.6	9/11/2027
			130.94	No expiration
Homer City	Indiana County, PA; Unclassifiable / attainment (2008 & 2015 standards)	11.3	11.3	Internal Offsets

**Figure 1 Location of Homer City and ERC Sources\***



\* emissions in parentheses indicate total VOC reduction from each ERC-generating facility.

## **ERC Transfer and Use**

PADEP regulations in §127.208 contain the following requirements on how ERCs are used and transferred:

25 Pa. Code §127.208(5) requires that VOC ERCs which originate from outside of Pennsylvania, the originating state has a reciprocity agreement with PADEP for ERC transfers. PADEP and NYSDEC signed an interstate trading of emissions reductions credits on June 17, 1996<sup>1</sup>.

25 Pa. Code §127.208(9&10) requires that ERCs be obtained from a facility which has the same or greater nonattainment classification. Indiana County is considered unclassified/attainment for both the 2008 and 2015 8-hour ozone standards. As shown in Table 1, each of the Pennsylvania and New York VOC ERC generating facilities are located in similar nonattainment classifications. Also, all of the New York facilities are located within the OTR, which are considered to be the same non-attainment area. For purposes of this requirement, the VOC ERC generating facilities are considered to be located within the same nonattainment area as Homer City.

25 Pa. Code §127.208(3) requires demonstration that the VOC ERCs proposed to be used for a project will provide an equivalent impact on the proposed project area. Because all are in OTR, and the emissions are an ozone precursor,

<sup>1</sup> [https://files.dep.state.pa.us/air/AirQuality/AQPortalFiles/Permits/erc/rec\\_ny.pdf](https://files.dep.state.pa.us/air/AirQuality/AQPortalFiles/Permits/erc/rec_ny.pdf)

this satisfies the requirements of this provision. In addition, a HYSPLIT back trajectory analysis was generated as additional support for the ERCs.

## **HYSPLIT Modeling Demonstration**

In order to demonstrate that VOC emissions from the ERC transfer facilities have an effect on the Homer City area, an analysis was performed using the HYbrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model<sup>2</sup>. This model was developed by National Oceanic and Atmospheric Association (NOAA) to evaluate trajectories to and from specific locations.

HYSPLIT was run for the ozone season months of March through October (2024) using the following inputs:

- Meteorology: North American Mesoscale (NAM) Forecast System (12-km resolution)
- Trajectory Duration: 48 hours
- Frequency Period: 30 days/31 days (dependent on month length)
- Trajectory Grid Resolution: 1 degree
- Trajectory Starting Interval: 3 hours
- Initial Trajectory Height: 500 meters above ground level

The attached HYSPLIT results demonstrate that air parcels that pass through the Homer City area originate in the areas surrounding the ERC generating sources. The ERC sources located throughout Pennsylvania and New York have air parcels that pass through the Homer City area for a majority of the ozone season months. This analysis represents only a single ozone season and climate variability year to year will impact the overall back trajectories and frequency at which air parcels originating from the ERC sources pass through Homer City. Thus, it is reasonable to conclude that ozone precursor emissions which originated from the areas which the VOC ERC generating sources are located impact the Homer City area.

## **Conclusions**

Based on OTR there is an equivalence from each of the VOC ERC generating facilities and Indiana County, where the proposed Homer City project is required to obtain VOC ERCs. The 2024 HYSPLIT model runs trace the passage of air parcels to Homer City back through areas where the ERC generating sources are located. Homer City is respectfully requesting that PADEP evaluate the evidence of equivalence in support of the ERC transfer approval.

Yours sincerely,



Ian Miller  
Senior Air Quality Engineer  
AECOM  
T: 978-905-2326  
E: ian.miller@aecom.com



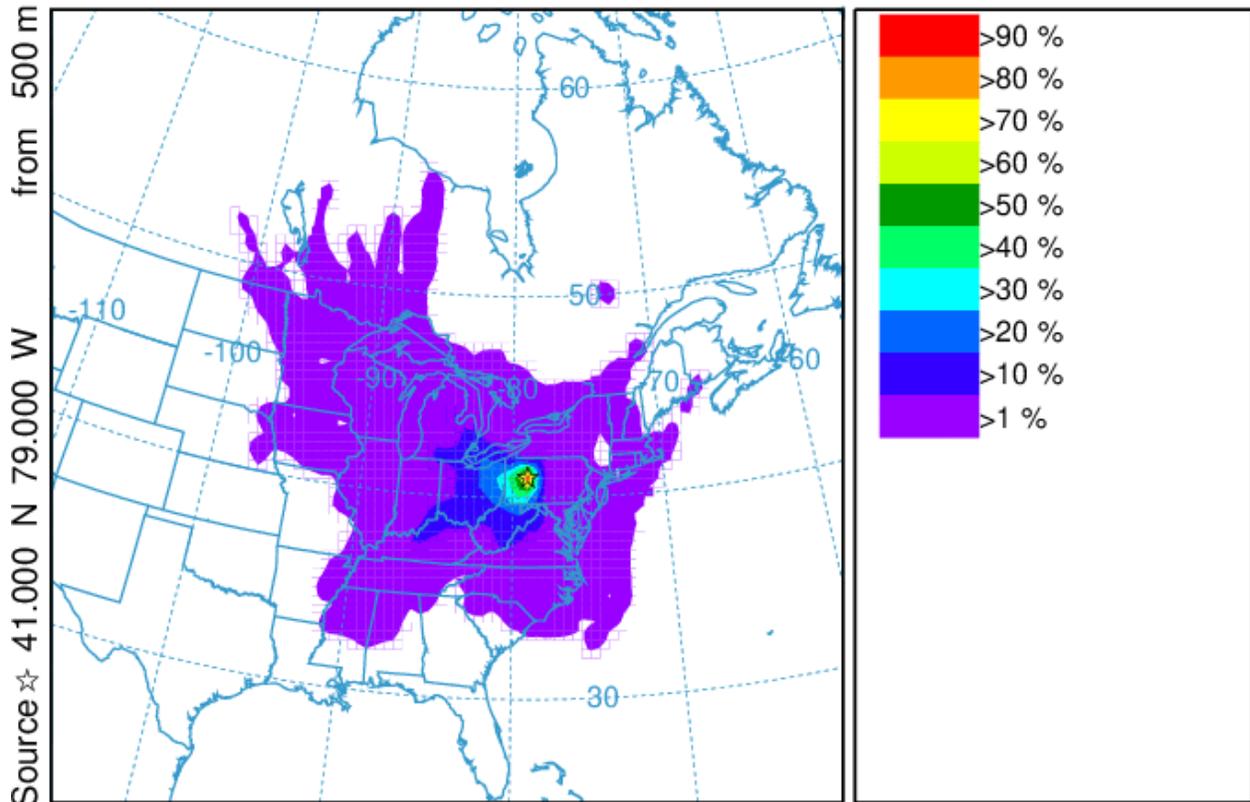
Jeff Connors  
Supervisor, Air Quality Services (East)  
AECOM  
T: 978-605-2166  
E: jeffrey.connors@aecom.com

<sup>2</sup> [https://www.ready.noaa.gov/HYSPLIT\\_traj.php](https://www.ready.noaa.gov/HYSPLIT_traj.php)

**March 2024 Simulation**

**NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES**

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 31 Mar to 0500 29 Feb 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



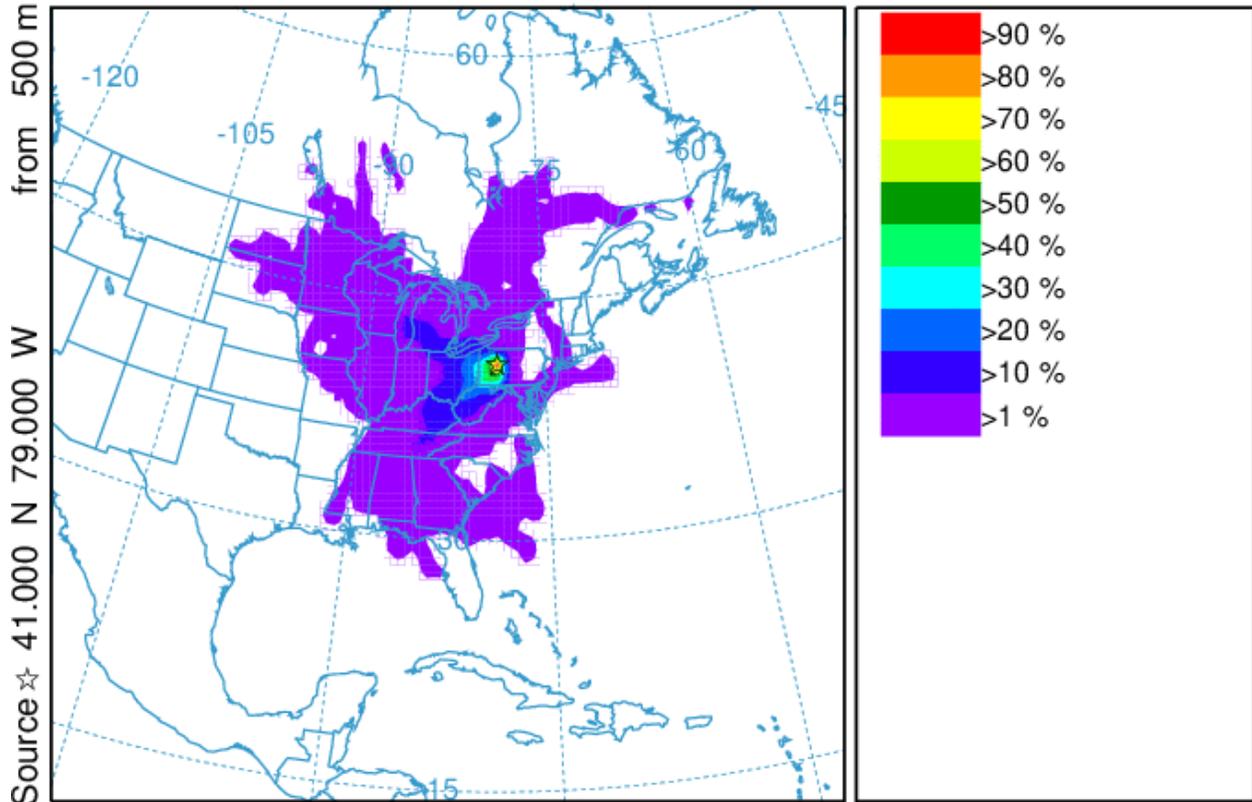
**METEOROLOGICAL DATA**

Job ID: 175296 Job Start: Thu Jul 10 21:17:25 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 31 Mar 24  
 Direction of trajectories: Backward Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 31 Mar 2024 - NAM12

April 2024 Simulation

## NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 30 Apr to 0500 30 Mar 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



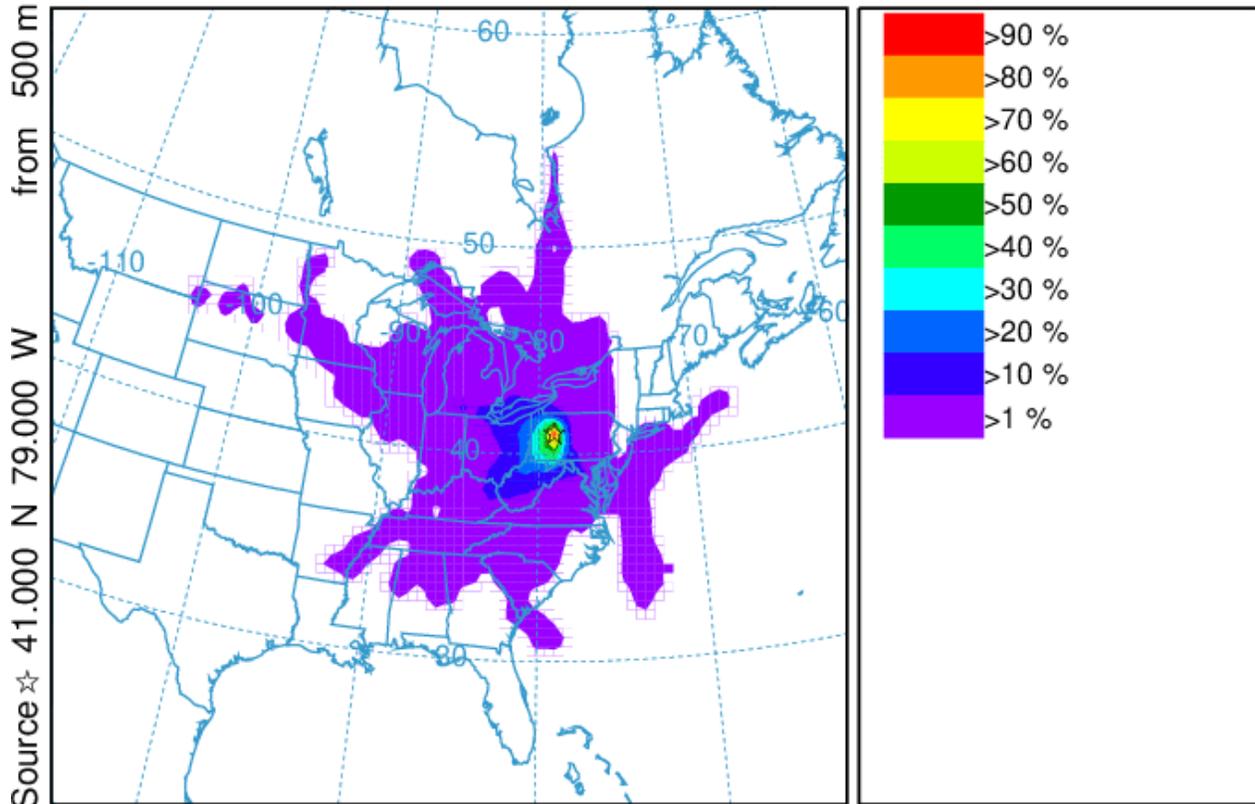
### METEOROLOGICAL DATA

Job ID: 12982      Job Start: Fri Jul 11 16:49:47 UTC 2025  
 Source 1    lat.: 40.514220    lon.: -79.194010    height: 500 m AGL  
 Initial trajectory started: 2300Z 30 Apr 24  
 Direction of trajectories: Backward    Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 30 Apr 2024 - NAM12

May2024 Simulation

## NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 31 May to 0500 30 Apr 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



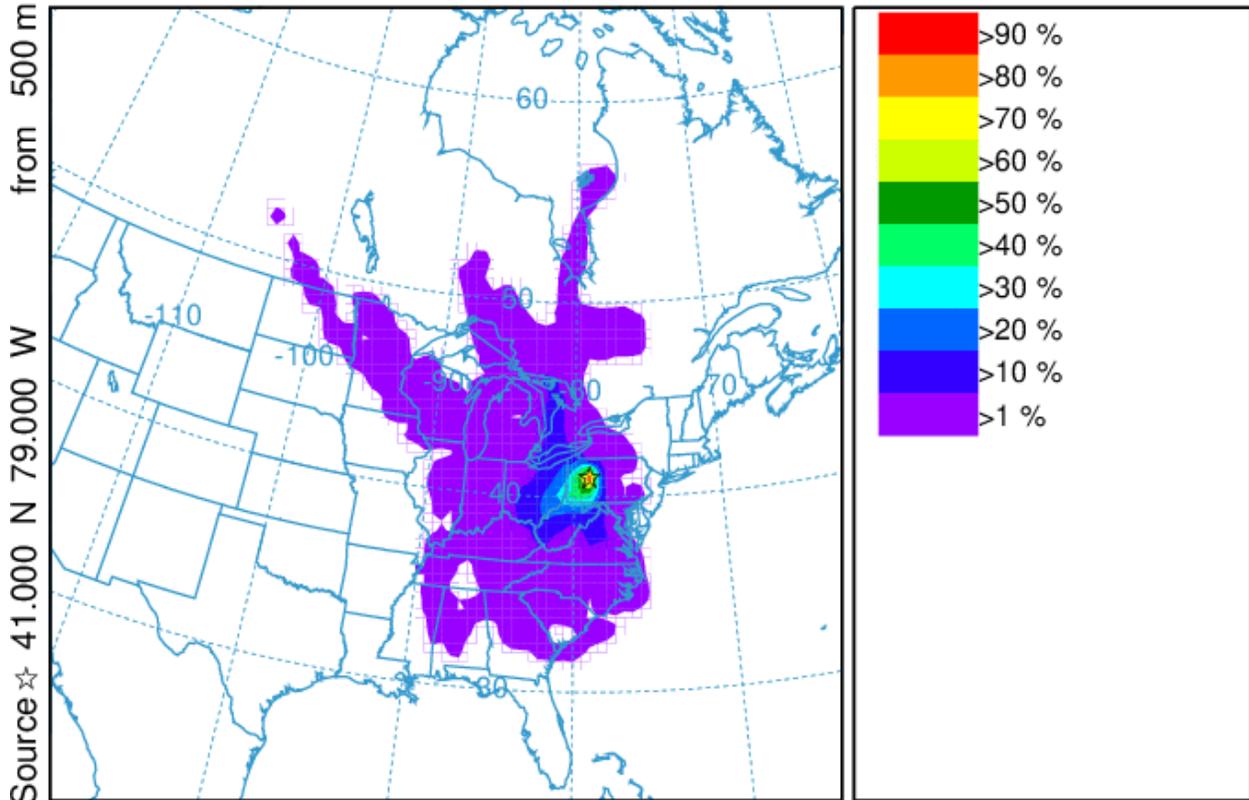
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Job ID: 16866 Job Start: Fri Jul 11 18:13:59 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 31 May 24  
 Direction of trajectories: Backward Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 31 May 2024 - NAM12

June 2024 Simulation

## NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 30 Jun to 0500 30 May 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



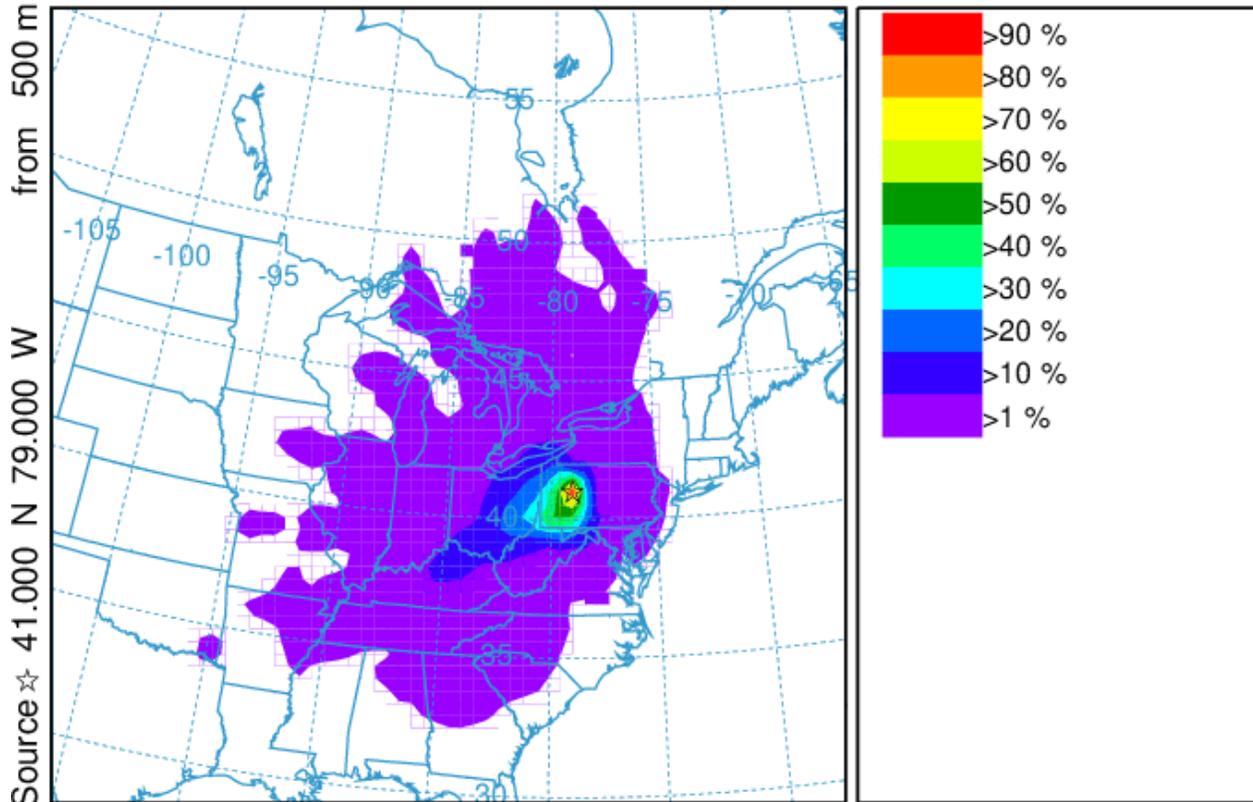
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Job ID: 18307      Job Start: Fri Jul 11 19:42:23 UTC 2025  
 Source 1    lat.: 40.514220    lon.: -79.194010    height: 500 m AGL  
 Initial trajectory started: 2300Z 30 Jun 24  
 Direction of trajectories: Backward    Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 30 Jun 2024 - NAM12

July 2024 Simulation

## NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 31 Jul to 0500 30 Jun 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



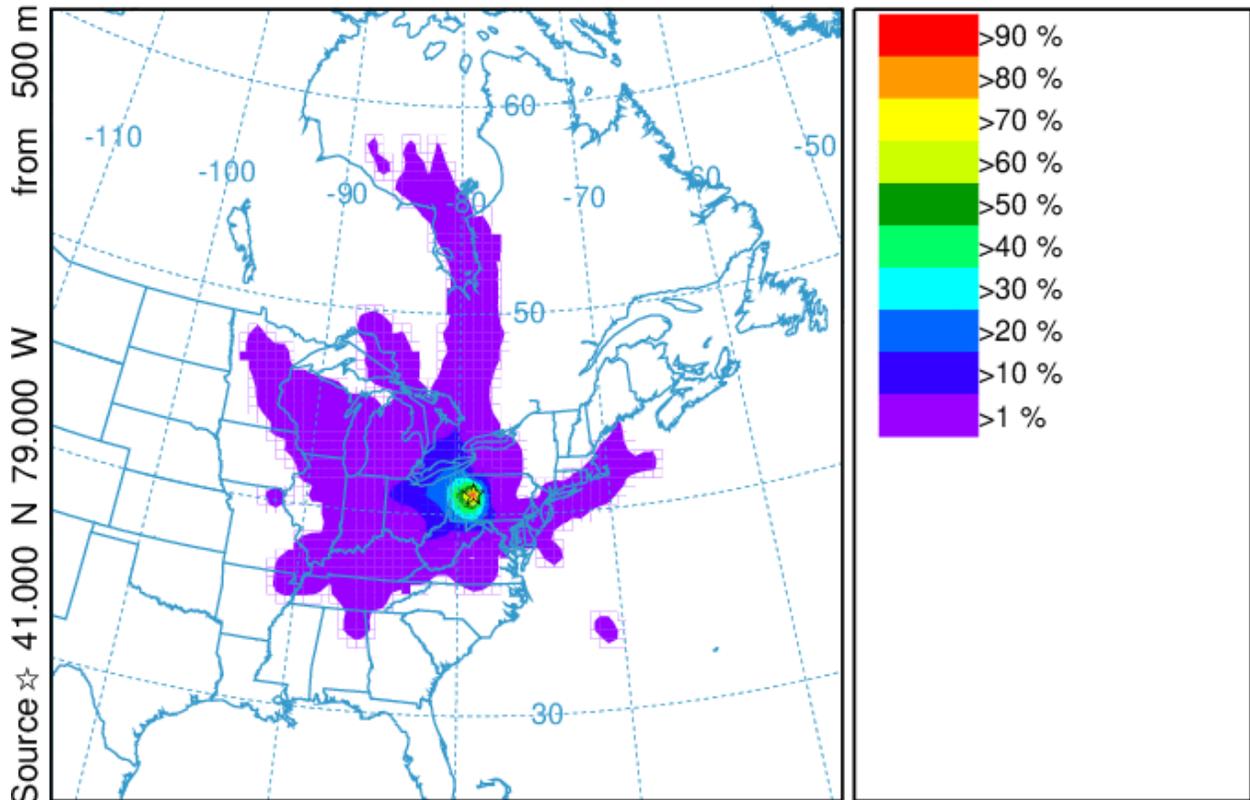
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Job ID: 167685      Job Start: Tue Jul 15 13:59:18 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 31 Jul 24  
 Direction of trajectories: Backward    Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 31 Jul 2024 - NAM12

## August 2024 Simulation

### NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 31 Aug to 0500 31 Jul 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



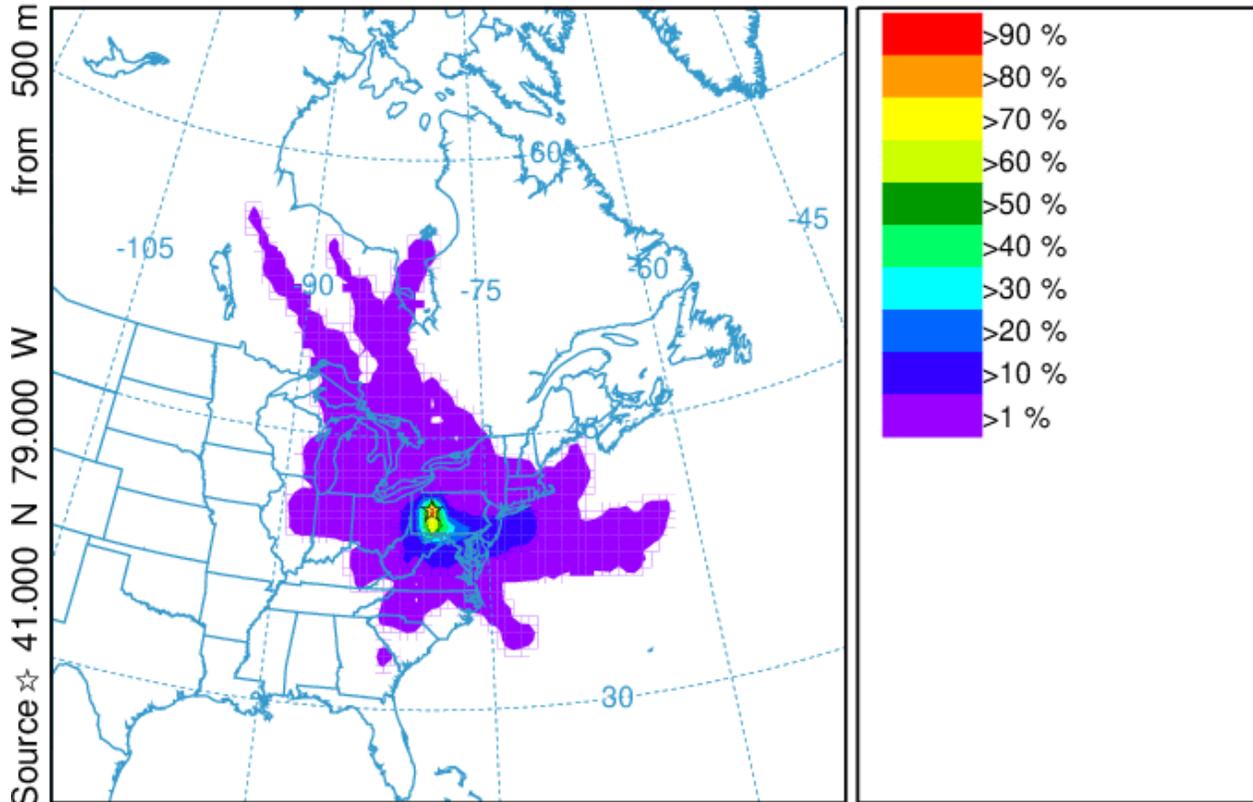
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Job ID: 167971      Job Start: Tue Jul 15 14:11:36 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 31 Aug 24  
 Direction of trajectories: Backward      Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 31 Aug 2024 - NAM12

**September 2024 Simulation**

**NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES**

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 30 Sep to 0500 30 Aug 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



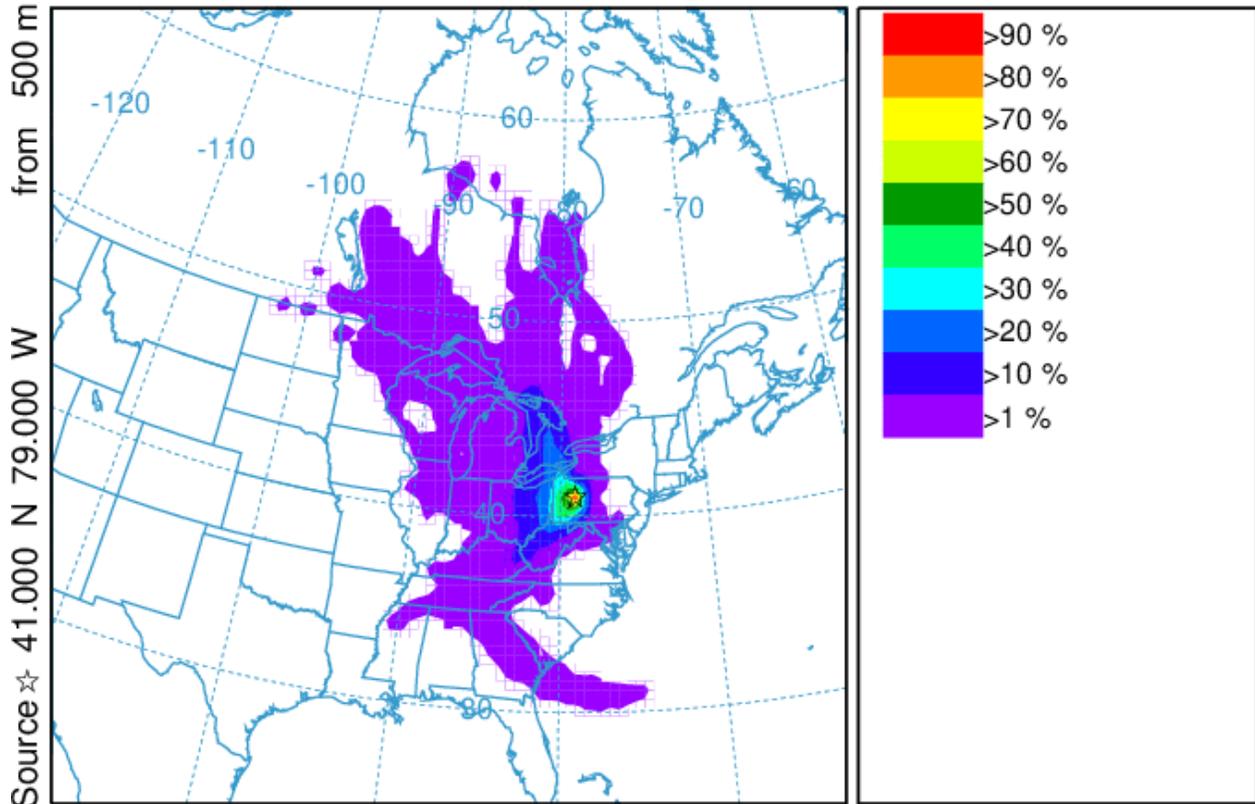
**METEOROLOGICAL DATA**

Job ID: 168181      Job Start: Tue Jul 15 14:23:18 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 30 Sep 24  
 Direction of trajectories: Backward      Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 30 Sep 2024 - NAM12

**October 2024 Simulation**

**NOAA HYSPLIT MODEL - TRAJECTORY FREQUENCIES**

# trajs passing through grid sq./# trajectories (%) 0 m and 99999 m  
 Integrated from 2300 31 Oct to 0500 30 Sep 24 (UTC) [backward]  
 Freq Calculation started at 0000 00 00 (UTC)



**METEOROLOGICAL DATA**

Job ID: 168592      Job Start: Tue Jul 15 14:53:32 UTC 2025  
 Source 1 lat.: 40.514220 lon.: -79.194010 height: 500 m AGL  
 Initial trajectory started: 2300Z 31 Oct 24  
 Direction of trajectories: Backward      Trajectory Duration: 48 hrs  
 Frequency grid resolution: 1.0 x 1.0 degrees  
 Endpoint output frequency: 60 per hour  
 Number of trajectories used for this calculation: 120  
 Meteorology: 0000Z 31 Oct 2024 - NAM12