

Is Ozone Transported from Indiana Causing Nonattainment of Ozone Standards in the Northeast as Alleged by the Northeast?

Indiana Chamber of Commerce
Environmental Conference
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Skipp Kropp
Steptoe & Johnson, PLLC

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Fundamental Question

Question: Why is it that air quality in the states west of the Northeast, including Indiana, meets all national ambient air quality standards and that air emissions from Indiana stationary sources only become an air quality problem when they get over I-95?

Answer: ?

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Overview

Clean Air Act: State Obligations and Responsibilities

176A petition to expand OTR

Maryland 126 Petition

New York 126 Petition

International Emissions

New York/Connecticut 4 Step Analysis

Presidential Memorandum

Exceptional Events

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**Clean Air Act: State Obligations and
Responsibilities**

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Clean Air Act Section 110(a)(2)

“Each State shall...adopt and submit to the Administrator...a plan which provides for implementation, maintenance, and enforcement of such primary [ambient air quality] standard in each air quality control region (or portion thereof) within such State.”

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Clean Air Act Section 110(a)(2)(D)(i)

“Each implementation plan submitted by a State under this chapter...shall...contain adequate provisions...prohibiting...any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard...”

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Clean Air Act Section 110(a)(2)(D)(ii)

“Each implementation plan submitted by a State under this chapter...shall...contain adequate provisions...insuring compliance with the applicable requirements of sections 7426 and 7415 of this title (relating to interstate and international pollution abatement)”

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Clean Air Act Section 126(b)

“Any State or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 7410(a)(2)(D)(ii) of this title or this section. Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition.”

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Clean Air Act Section 179B

“Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if...(2) the submitting State establishes to the satisfaction of the Administrator that the implementation plan of such State would be adequate to attain and maintain the relevant national ambient air quality standards...but for emissions emanating from outside of the United States.”

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OTR States' 176A petition to expand the OTR

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STATE OF NEW YORK, ET AL., v. EPA, ET AL.
DC Circuit Case No. 17-1273 (176A Litigation)

- December 9, 2013:
 - Clean Air Act 176A Petition submitted by CT, DE, MD, MA, NH, NY, PA, RI, and VT to expand OTR to include Indiana and essentially all others east of the Mississippi River
- November 3, 2017:
 - EPA denial of 176A Petition. 82 Fed. Reg. 51238.*
- December 22, 2017:
 - NY, CT, DE, MD, MA, PA, RI, and VT file Petition for Review of EPA denial of 176A petition in D.C. Circuit.
- EPA Response Brief filed August 21, 2018

* MOG Comments on proposed denial:

http://www.midwestozonogroup.com/files/MOG_Comments_In_Support_of_Proposed_Denial_of_176A_Petition.pdf

Note contents of presentation are summaries.
Review of full text of referenced briefs is advised.

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STATE OF NEW YORK, ET AL., v. EPA, ET AL.
DC Circuit Case No. 17-1273 (176A litigation)

- EPA brief:
 - States Must Submit State Implementation Plans that Address Interstate Transport of Pollutants.
 - EPA Properly Rejected Reliance on Outdated Data.
 - EPA Properly Did Not Rely on the 2015 NAAQS
 - EPA Properly Concluded that Petitioners' "Equity" Concerns Did Not Warrant Granting the Petition.
- Oral Argument held September 21, 2018

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Maryland 126 Petition

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MARYLAND

- Clean Air Act §126 Petition filed November 16, 2016
- Cites violation of CAA §110(a)(2)(D)(i)
- Petition cites 36 EGUs located in Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia, alleging that emissions “contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to [the 2008 Ozone NAAQS].”.

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MARYLAND

- January 3, 2017: EPA sua sponte extended deadline to July 15, 2017
- July 20, 2017: Chesapeake Bay Foundation files Clean Air Act citizen's suit notice for EPA failure to act on 126 petition within 60 days
- Plaintiffs note that all 36 of Respondents' EGUs have SCR or SNCR installed but not "effectively run" on all days of the ozone season

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EPA denial of Maryland and Delaware 126 Petitions

- June 8, 2018, EPA proposed (83 Fed Reg 26666*) to deny the Maryland (and Delaware) Section 126 Petition
- "The EPA proposes to deny all five petitions because Delaware and Maryland have not met their burden to demonstrate that the sources emit or would emit in violation of the CAA's 'good neighbor' provision (i.e., the petitions have not demonstrated that the sources will significantly contribute to nonattainment or interfere with maintenance of the 2008 or 2015 ozone NAAQS in the petitioning states)."

* <https://www.federalregister.gov/d/2018-12374>

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MARYLAND

- Petition denial basis-
 - EPA promulgated CSAPR Update to implement NOX control strategies achievable in states upwind of Maryland, including at the specific EGUs named in Maryland petition (81 Fed Reg 74504)
 - EPA analysis of interstate ozone transport CSAPR Update rebuts several assertions in petition, as well as additional technical analysis regarding current unit operations.

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EPA proposed denial of Maryland and Delaware 126 Petitions

- “The EPA is further proposing to deny the petitions based on the agency’s independent analysis that the identified sources do not currently emit and are not expected to emit pollution in violation of the good neighbor provision for either the 2008 or 2015 ozone NAAQS.”

* <https://www.federalregister.gov/d/2018-12374>

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MARYLAND

- September 14, 2018: EPA Acting Administrator Andrew R. Wheeler signed notice of EPA final action denying Maryland petition
- Petition denial basis-
 - EPA modeling of 2017 ozone in CSAPR Update and more recent modeling of 2023 ozone levels showing no Maryland nonattainment problems of 2008 or 2015 ozone NAAQS, even though Maryland petition didn't cite 2015 NAAQS.

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MARYLAND

- Petition denial basis-
 - EPA determined there are no additional cost-effective measures available at any of the sources named in petition
 - Existing programs that require cost effective emissions reductions from all of the named sources, such as CSAPR Update, are in place and will address concerns of petition
- September 20, 2018: Maryland announces it will appeal denial

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MARYLAND

- October 5, 2018: final denial published (83 Fed Reg 50444)
- October 15, 2018: Maryland appeals denial to the US Court of Appeals for the District of Columbia Circuit (STATE OF MARYLAND v. EPA, case no. 18-1285)

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New York 126 Petition

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New York 126

- Filed: March 12, 2018
- Facility Targets: 123 EGUs; 166 “non-electric generating units”; 59 oil and gas facilities
- State Targets: Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia and West Virginia.
- Requested relief: Daily emission limits of 0.15 lb/mmBtu

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New York 126

- May 11, 2018: EPA sua sponte extends deadline to respond to NY petition by 6 months, to “no later than November 9, 2018.” finding that “60 days is insufficient time to complete the technical and other analyses and public notice-and-comment process required for our review of a petition dated March 12, 2018, submitted by the state of New York pursuant to section 126(b) of the Clean Air Act (CAA)” (83 Fed Reg 21909)

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New York 126

- May 31, 2018: MOG comments that petition is legally and technically fatally flawed because it:
 - fails to address exceptional events. Removal of exceptional events data will show that all New York monitors currently attain 2008 ozone NAAQS
 - fails to address international transport. Exclusion of international emissions will show that "but for" international transport from Canada and Mexico every monitor in New York would attain both the 2008 and 2015 ozone NAAQS.

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New York 126

- May 31, 2018: MOG comments that petition is legally and technically fatally flawed because it:
 - fails to consider EPA's most recent 12 km Good Neighbor modeling which demonstrates that all New York monitors will attain 2008 ozone NAAQS. MOG's application of EPA modeling to a 4km grid further demonstrates that all New York monitors will also attain 2015 ozone NAAQS.

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New York 126

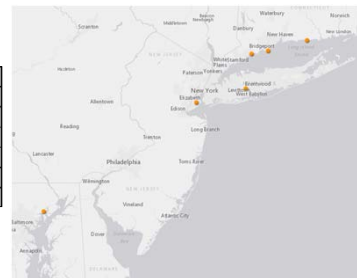
- May 31, 2018: MOG comments that petition is legally and technically fatally flawed because:
 - Good Neighbor SIPs and 126 petition implement the same provision of the Clean Air Act
 - Approval of multiple “Good Neighbor” plans resolve (both legally and technically) the issues raised by New York
 - Many other technical and legal defects exist in the New York petition.
- MOG comments filed 5.31.18:
 - http://midwestozonegroup.com/files/Midwest_Ozone_Group_Initial_Comments_on_NY_126_Petition_5.31.18.pdf

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EPA 12km CSAPR Modeling Results Shows all NY Attain 2008 Ozone NAAQS

- OSAT contributions were generated for the 12km simulation’s remaining six nonattainment monitors from the 2023en projection analysis

Monitor	State	County	DVb (2011)	DVf ave (2023)	Dvf max (2023)
90019003	Connecticut	Fairfield	83.7	72.7	75.6
361030002	New York	Suffolk	83.3	72.5	74.0
360850067	New York	Richmond	81.3	71.9	73.4
240251001	Maryland	Harford	90.0	71.4	73.8
90013007	Connecticut	Fairfield	84.3	71.2	75.2
90099002	Connecticut	New Haven	85.7	71.2	73.9



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4km modeling by MOG shows all of New York's monitors attaining the 2015 ozone NAAQS

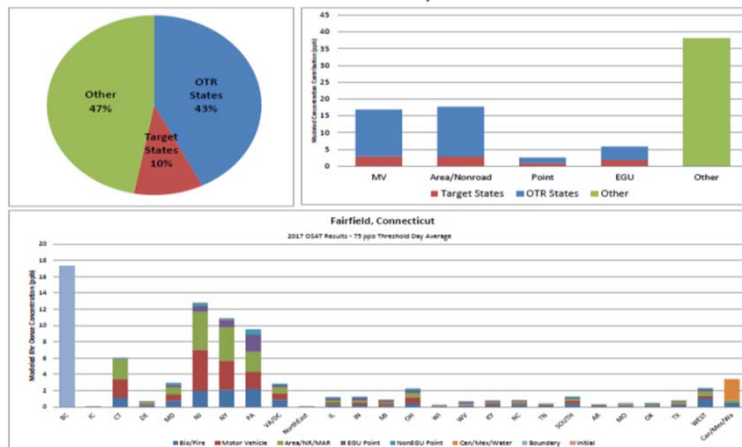
Monitor	State	County	DVb (2011)	12km Modeling		4km Modeling	
				DVf ave (2023)	Dvf max (2023)	DVf ave (2023)	Dvf max (2023)
90019003	Connecticut	Fairfield	83.7	72.7	75.6	69.9	72.7
361030002	New York	Suffolk	83.3	72.5	74.0	70.7	72.1
360850067	New York	Richmond	81.3	71.9	73.4	69.6	71.0
240251001	Maryland	Harford	90.0	71.4	73.8	71.1	73.5
90013007	Connecticut	Fairfield	84.3	71.2	75.2	69.7	73.6
90099002	Connecticut	New Haven	85.7	71.2	73.9	70.3	73.0

Of all residual CSAPR 2023 eastern U.S. 70 ppb nonattainment monitors, only Edgewood monitor in Harford, Maryland remains in nonattainment with 4km simulation @ 71.1 ppb

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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

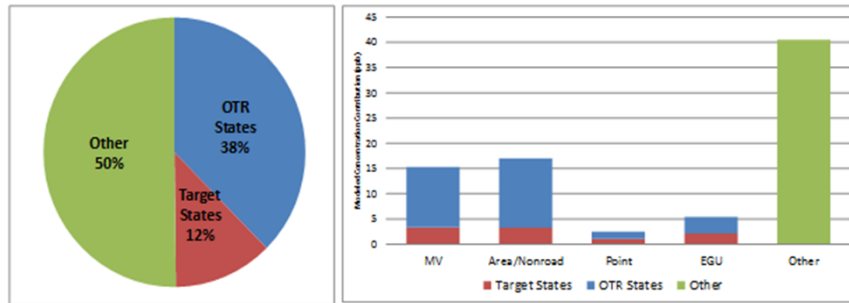
90019003 Fairfield, Connecticut



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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

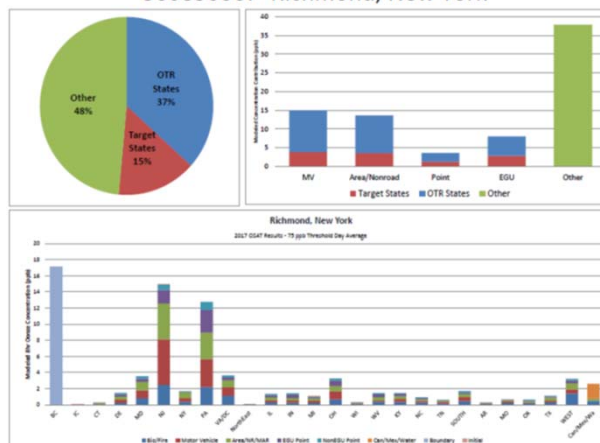
361030002 - Babylon - 2017 OSAT Results



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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

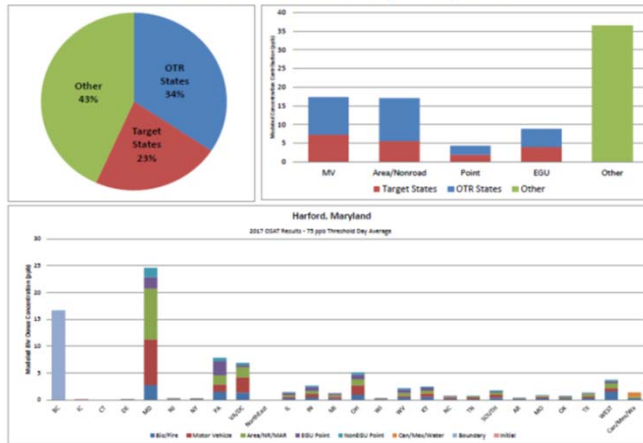
360850067 Richmond, New York



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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

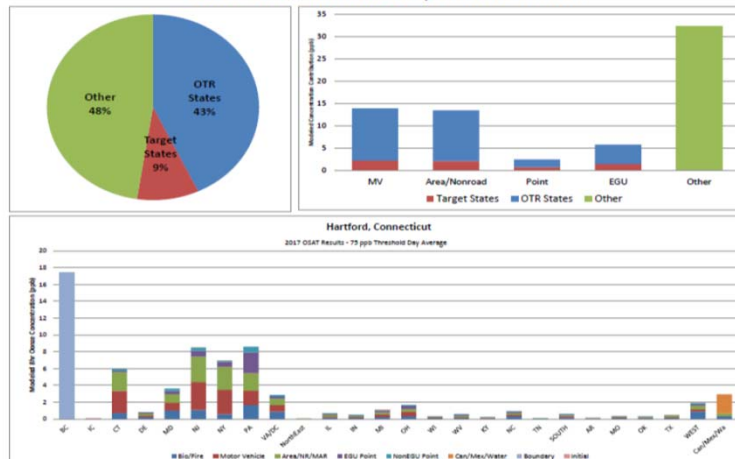
240251001 Harford, Maryland



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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

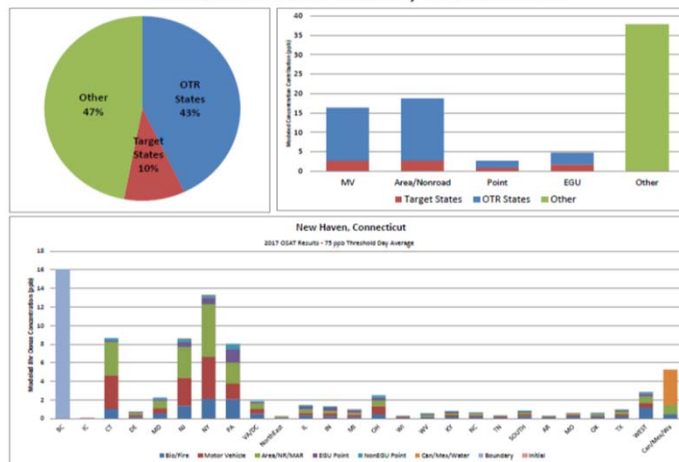
90031003 Hartford, Connecticut



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Mobile sources – not point sources - have the largest impact on New York, Connecticut, and Maryland monitors

90099002 New Haven, Connecticut



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International Emissions

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Clean Air Act Section 179B

- “Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if...(2) the submitting State establishes to the satisfaction of the Administrator that the implementation plan of such State would be adequate to attain and maintain the relevant national ambient air quality standards...but for emissions emanating from outside of the United States.”

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International emissions are a significant portion of ozone concentrations in New York

International emissions are represented in modeling by Boundary Conditions (BC), and Canada/Mexico (Can/Mex)

	2023	2023 w/o Can/Mex	2023 w/o BC*
Suffolk (361030002)	71.3	69.52	52.35

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Development of 2015 Ozone NAAQS Good Neighbor SIPs

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2015 Ozone NAAQS Good Neighbor SIP Development

- EPA 4 Step process
 - Step 1 – Identify problem monitors
 - Step 2 – Determine state linkages
 - Step 3 – Identify cost effective emission reductions
 - Step 4 – Establish enforceable measures

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New York/Connecticut 4 Step Analysis

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Step 1 – Identify Problem Monitors

- Utilize SIP approvable modeling to demonstrate attainment

Monitor	State	County	DVb (2011)	DVf (2023) Average (ppb) - Nonattainment		
				Original 12km Modeling	Updated 12km Modeling	4km Modeling
361030002	New York	Suffolk	83.3	72.5	74.0	70.7
90019003	Connecticut	Fairfield	83.7	72.7	73.0	69.9
90013007	Connecticut	Fairfield	84.3	71.2	71.0	69.7
360810124	New York	Queens	78.0	70.1	70.2	68.0
90099002	Connecticut	New Haven	85.7	71.2	69.9	70.3
90010017	Connecticut	Fairfield	80.3	69.8	68.9	69.2

Monitor	State	County	DVb (2011)	DVf (2023) Maximum (ppb) - Maintenance		
				Original 12km Modeling	Updated 12km Modeling	4km Modeling
361030002	New York	Suffolk	83.3	74.0	75.5	72.1
90019003	Connecticut	Fairfield	83.7	75.6	75.9	72.7
90013007	Connecticut	Fairfield	84.3	75.2	75.0	73.6
360810124	New York	Queens	78.0	71.9	72.0	69.8
90099002	Connecticut	New Haven	85.7	73.9	72.6	73.0
90010017	Connecticut	Fairfield	80.3	72.1	71.2	71.5

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Step 3 – Response to Significance

- Determine if state has applied all cost effective control options
- Look at proportional contribution to downwind monitor’s nonattainment concentration (a.k.a., ‘red lines’ approach)
- Maintenance impairment response
 - 10 yr projection with no emission increase

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Maintenance: 10 Year Reduction Demonstration

State	Annual Anthropogenic NOx Emissions			
	2011 (Tons)	2023 (Tons)	Change (Tons)	Change (%)
District of Columbia	9,404	4,569	-4,834	-51%
Illinois	506,607	293,450	-213,156	-42%
Indiana	444,421	243,954	-200,467	-45%
Kentucky	327,403	171,194	-156,209	-48%
Michigan	443,936	228,242	-215,694	-49%
Ohio	546,547	252,828	-293,719	-54%
Pennsylvania	562,366	293,048	-269,318	-48%
Texas	1,277,432	869,949	-407,482	-32%
Virginia	313,848	161,677	-152,171	-48%
West Virginia	174,219	136,333	-37,886	-22%

As reported by EPA, final CSAPR update summaries

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Maryland 4 Step Analysis

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Step 1: Identify Problem Monitors

- Utilize SIP approvable modeling to demonstrate attainment (EPA Updated 12km)

				Dvf (2023) Average (ppb) - Nonattainment		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
240251001	Maryland	Harford	90.0	71.4	70.9	71.1

				Dvf (2023) Maximum (ppb) - Maintenance		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
240251001	Maryland	Harford	90.0	73.8	73.3	73.5

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Step 1 (cont.): International Contribution

- EPA / MOG both estimate relative contribution of Canadian and Mexican emissions to modeled ozone concentrations
 - EPA / APCA and MOG / OSAT

State	County	Monitor	2023	2023	2023 DV (ppb)	
			MDA8 DV (ppb)	Can / Mex (ppb)	w/o Can/Mex	
Maryland	Harford	240251001	DVb (2011)	90.0		
			MOG 12km OSAT	71.4	0.72	70.6
			EPA 12km APCA*	70.9	0.79	70.1
			MOG 4km OSAT	71.1	0.43	70.6

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Maintenance: 10 Year Reduction Demonstration

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As reported by EPA, final CSAPR update summaries

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Presidential Memorandum

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Presidential Memorandum

Presidential Memorandum (issued April 12, 2018) titled “Presidential Memorandum for the Administrator of the Environmental Protection Agency” directs the Administrator to take certain actions in the following areas. For many of these areas, the memorandum discusses developing a performance plan and performance goals.

- Timely processing of SIPs
- Cooperative engagement with states on regional haze SIPs
- Timely processing of preconstruction permit applications
- Timely action on exceptional events demonstrations and 179B petitions
- Consideration of international emissions in relevant program areas
- Consideration of data used for designations
- Consideration of modeling in permitting processes
- Consideration of offset policies
- Consideration of NAAQS review process
- Timely issuance of implementation regulations and guidance
- Considerations of support for CAA implementation

Exceptional Events

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NATURAL RESOURCES DEFENSE COUNCIL AND SIERRA CLUB, v.
ENVIRONMENTAL PROTECTION AGENCY

(D.C. Circuit, July 20, 2018, USCA Case #16-1413)

- CAA 319(b)(2)(B) requires EPA to “promulgate final regulations governing the review and handling of air quality monitoring data influenced by an exceptional event”
- “Exceptional Events” is defined as “an event that—
 - (i) affects air quality;
 - (ii) is not reasonably controllable or preventable;
 - (iii) is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and
 - (iv) is determined by the Administrator...to be an exceptional event.”

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NATURAL RESOURCES DEFENSE COUNCIL AND SIERRA CLUB,

v.

ENVIRONMENTAL PROTECTION AGENCY

- Natural Resources Defense Council and Sierra Club challenged an EPA rule the agency used to determine whether an event caused by recurring activity is “natural,” and thus “exceptional,” or “caused by human activity,” and thus not exceptional
- To determine whether a recurring event is natural, and thus exceptional, EPA looks at the activities that caused the emissions.
- An event is natural if it resulted from at least some natural activity and any amount, no matter how significant, of reasonably controlled human activity

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NATURAL RESOURCES DEFENSE COUNCIL AND SIERRA CLUB,

v.

ENVIRONMENTAL PROTECTION AGENCY

- Decision is based on Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984): “If the Act unambiguously authorizes or forecloses EPA’s . . . rule, step one of the Chevron analysis requires that we follow Congress’s express policy choice. If the Act is unclear on the matter, step two of Chevron requires that we defer to EPA’s reasonable interpretation.” *Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008) (citing *Chevron*, 467 U.S. at 842-43).
- “The statutory language is far from unambiguous and is, instead, a classic example of Congress leaving a gap for EPA to fill with reasonable regulations.”

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NATURAL RESOURCES DEFENSE COUNCIL AND SIERRA CLUB,

v.

ENVIRONMENTAL PROTECTION AGENCY

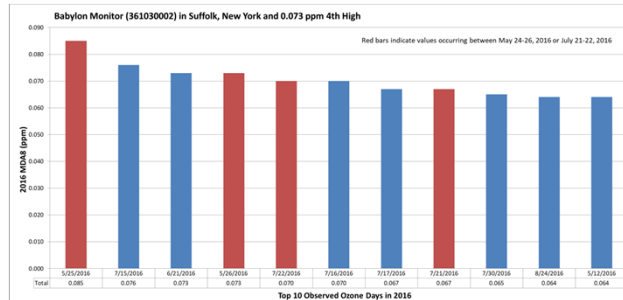
- “It is at Chevron step two that we determine if the 2016 Rule “fill[s] the statutory gap in reasonable fashion.”
- “We think the 2016 Rule preserves the Act’s distinct treatment of natural events. Although we recognize the possibility raised, but not demonstrated, by the environmental groups that extreme and unforeseen applications of the rule might have problematic results, the 2016 Rule still passes muster under Chevron step two. The ‘possibility that the rule, in uncommon particular applications, might exceed EPA’s statutory authority does not warrant judicial condemnation of the rule in its entirety.’ EPA v. EME Homer City Generation, L.P., 134 S. Ct. 1584, 1609 (2014)”

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Consideration of Exceptional Events (319) would bring NY’s worst monitor into attainment

AQS_SITE_ID 361030002

Date	Sum of Daily MDA8 (ppm)
5/25/2016	0.085
7/15/2016	0.076
6/21/2016	0.073
5/26/2016	0.073
7/22/2016	0.070
7/16/2016	0.070
7/17/2016	0.067
7/21/2016	0.067
7/30/2016	0.065
8/24/2016	0.064
5/12/2016	0.064



Ozone

Value	MDA8 (ppb)
2016 4th (fire)	73
2016 4th (no fire)	67
2014-16 DV (fire)	72
2014-16 DV (no fire)	70

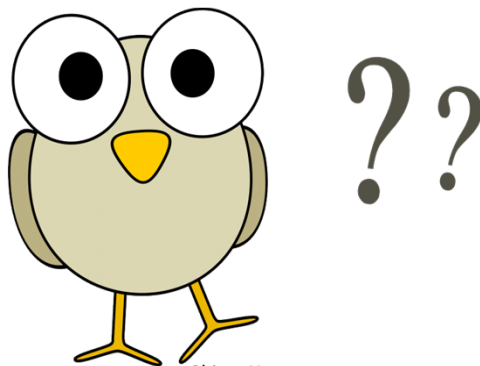
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Conclusion

- So-called “upwind states” are under attack several ways
- Resolution of attack:
 - So-called “downwind” states must address local mobile source contributions first
 - EPA should allow alternative modeling platforms
 - EPA must force so-called “downwind” states to address Exceptional Events
 - EPA must address international emissions
 - Prorate any needed control requirement
 - Allow “maintenance” to be addressed through a no emission increase demonstration

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QUESTIONS



Skipp Kropp
Steptoe & Johnson PLLC
317-946-9882

Skipp.Kropp@Steptoe-Johnson.com

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