

Appendix 10b - BART Analyses Cumulative Haze Impacts E-mails

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BART Analyses - Cumulative Haze Impacts

Below is a summary of responses to the question of using cumulative or individual Class 1 area days above the BART threshold for BART determinations. Respondents included representatives from EPA Region 5, EPA Headquarters and from the states of Ohio, Michigan, Wisconsin and Minnesota. All states appear to favor the approach of summing up days for each individual Class 1 area instead of counting all modeled receptors at all the Class 1 areas modeled. States desire a constant approach to this

EPA Region 5 and EPA Headquarter Responses

Hello Mark,

Sept. 5, 2008

Just FYI. I had some discussions with Wisconsin last week about the single vs multiple Class I area determination question you asked back in June. I forwarded to them the communications I had sent to you, attached below. We further had some conversations with Tim Allen with the FWS and he stated that he's not seen the guidance interpreted that way. In the work he's seen, analysis done for Subject to BART has been single Class I area only. However, for BART determination work, they are advising a multiple Class I area analysis. I don't see the logic in that but that's what being done apparently. Of course, the bottom line on this is that States can be as conservative as they feel is needed. Maybe with the 0.5 dv threshold, additional conservatism is warranted.

I don't know if this will have any impact on your work but wanted to share it with you.

Randy.

P.S. Guess we'll see you on the 11th regarding Alcoa. We should probably talk briefly before the meeting.

Randy Robinson
USEPA Region 5
312 353-6713

06/17/2008 12:45 PM

To: "DERF, MARK" MDERF@idem.IN.gov
Randall Robinson/R5/USEPA/US@EPA
Cc:

Subject RE: Re: Fw: BART question

Very helpful. Thanks for passing along to Todd and getting back to me so quick. Enjoy the rest of your week off. Take care.

From: Robinson.Randall@epamail.epa.gov
[\[mailto:Robinson.Randall@epamail.epa.gov\]](mailto:Robinson.Randall@epamail.epa.gov)
Sent: Tuesday, June 17, 2008 1:40 PM
To: DERF, MARK
Subject: Fw: Re: Fw: BART question

Hi Mark,

I'm out this week but am trying to keep up with emails. I sent an email to Todd Hawes last week with your question. Below is his reply. The BART guidelines may provide additional support. I've retouched base with Todd regarding your latest email.

Randy

Randy Robinson
USEPA Region 5
312 353-6713

-----Forwarded by Randall Robinson/R5/USEPA/US on 06/17/2008 12:39PM

To: Randall Robinson/R5/USEPA/US@EPA
From: Todd Hawes/RTP/USEPA/US
Date: 06/12/2008 12:20PM
Subject: Re: Fw: BART question

As I recall, the protocol recommended the methodology described below in Mark's email in order to be conservative. That is entirely up to the state, so we would be fine with summing up the days. In addition to the Q&A, the BART Guidelines do provide some support for modeling multiple Class I areas (70 FR 39126, also see footnote 36). The Q&A, if I remember correctly, was advising to look at ALL receptors modeled, so if there are receptors on more than one Class I area, you would throw out the highest 7 days from the entire universe of receptors. Even if there is double counting, it is up to the state to determine if it wants to use that level of conservatism. We did not specify a position on double counting. I hope this is helpful.

Randall Robinson/R5/USEPA/US

-----Forwarded by Randall Robinson/R5/USEPA/US on 06/11/2008 7:27PM

To: Todd Hawes/RTP/USEPA/US
From: Randall Robinson/R5/USEPA/US@EPA
Date: 06/12/2008 12:20PM
Subject: Fw: BART question

Hello Todd,

I'm out of the office this week and next but wanted to get some information to Indiana. I haven't looked at the guidance in a while but my recollection is the characterization they provide below is correct. That is, you sum the days, for impacts at any Class I area. Is that correct? If so, I guess their approach would be conservative if they are doublecounting days. Lastly, is there any other guidance, beyond the Q and A to send to them.

Thanks for your help.

Randy
Randy Robinson
USEPA Region 5
312 353-6713

-----Forwarded by Randall Robinson/R5/USEPA/US on 06/11/2008 05:22PM

To: Randall Robinson/R5/USEPA/US@EPA

From: "DERF, MARK" <MDERF@idem.IN.gov>

Date: 06/10/2008 12:05PM

Subject: BART question

Need a quick clarification for our BART modeling. Using the MRPO BART modeling protocol and determining the output from Kirk Baker's software, Indiana has determined whether sources are subject to BART by adding the number of days for all the 16 Class 1 areas modeled for each year and comparing the 98th percentile. This approach has come under scrutiny from one of our BART sources. They are viewing their results in a slightly different way. They are only looking at the nearest Class 1 area and basing their results on that area only. For instance, they have 6 days over 0.5 DV at Mammoth Cave and 3 days over 0.5 DV at Mingo in 2003 but are only counting the 6 days at Mammoth Cave. I contacted them and said that I wanted additional information to show the days that the high days occurred at Mammoth and Mingo to determine if there were 9 different days over 0.5 DV for both Class 1 areas which would make them subject to BART or if there was double counting where impacts were over 0.5 DV at both Class 1 areas for the same day.

We had emailed each other about a similar situation on Dec 15, 2005 and Nov. 29, 2006. Your December email provided a Q & A Part 1 document with reference to this question. I wanted to provide this document to the source (or updated guidance if available). As the guidance reads in Question/Response #24, the highest modeled delta-DV for each day should be used for all modeled receptors, regardless of location. The modeled receptors represent those in all the Class 1 areas.

Is this your understanding of the guidance? I guess IN's approach is a little conservative in that some days could be over 0.5 DV for more than one Class 1 area and we would count them more than once towards the determination of subject to BART. It looks like if the source considers the highest delta-DV from all modeled receptors for each day, that meets guidance for BART.

Let me know if you need me to explain better. Thanks.

Mark Derf

Office of Air Quality

Indiana Department of Environmental Management Indianapolis, IN 46206

Phone: 317 233-6870

Fax: 317 233-2342

mdarf@idem.in.gov

Mark

We have interpreted the federal regulation as each Class I Area. Thus, the count starts over at each Class I area. In your case, we would have counted Class I area "A" as 6 and Class I area "B" as 3. BWCA and VOYA (in Minnesota) are adjacent to one another and we still interpreted it this way (although the end-result would not change were we to use your approach). I've never before heard of a State using a compilation of all receptors at all Class I areas to make a subject-to-BART determination, so this is a new concept to me.

Margaret

-----Original Message-----

From: DERF, MARK [<mailto:MDERF@idem.IN.gov>]

Sent: Thursday, June 19, 2008 1:28 PM

To: Abigail Fontaine; James G Haywood; Matthew Johnson; Michael A Majewski; Scott Leopold; McCourtney, Margaret;

dana.thompson@epa.state.oh.us; Sarah.Vanderwielen@epa.state.oh.us;

Carolina.Prado@epa.state.oh.us; david.brown@dnr.iowa.gov

Subject: BART question

Indiana has received three separate BART exemption modeling analysis. One source had conducted a more refined analysis at 4 km using the VISTAS protocol. The issue is the results showed that there were 6 days modeled over 0.5 DV at the nearest Class I area and 3 additional days over 0.5 DV at the next closest Class I area. Both areas are within 300 kms of the source. The source is arguing that since this is a refined analysis, the only results that matter are those at the most affected (closest) Class I area. Indiana has summed all modeled Class I receptors with impacts over 0.5 DV to make subject to BART determinations, based on Kirk's CALPOST output files. In that case, the source would have 9 days over 0.5 DV for one year. The source says that it should only be 6 days over.

Randy Robinson and Todd Hawes have replied with references to 70 FR39126 and also footnote 36. I haven't found any specific citation in the BART modeling guidelines and Appendix Y that directly address this issue so I wanted to get other opinions or see if anyone else had run up against this issue. The source points out that in accepted modeling protocols in other states, there is language that mentioned a given Class I area or the relevant Class I area. I tend to think that for exemption modeling, if a source is trying to demonstrate they are not subject to BART, the threshold should include all modeled receptors below the 98th percentile of 0.5 DV.

If anyone has any thoughts, I would appreciate it. Thanks.

Mark Derf

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Indianapolis, IN 46206

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Mark:

It has been Ohio's understanding, for at least the last couple of years, that what governs is the number of days above threshold at any single Class I area. The aggregate of all the days at all the downwind Class I areas has nothing to do with anything. Two or three years ago, Kirk provided an analysis that seemed to indicate the aggregate over multiple areas was, in fact, pertinent. To me, and I think to Bill, that was a totally outlandish interpretation. After we got the question clarified and resolved, I'm sure we decided that only the most-impacted single area governs.

-- Dana

>>> "DERF, MARK" <MDERF@idem.IN.gov> 6/19/2008 2:28 pm >>>

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We get people trying to color outside the box, too, on BART issues. We have little guidance to go on, so I'll be interested to hear what you determine...

Jim Haywood
Senior Meteorologist
Michigan Department of Environmental Quality
Phone: (517) 241-7478
Fax: (517) 335-3122
E-mail: HaywoodJ@michigan.gov

>>> "DERF, MARK" <MDERF@idem.IN.gov> 06/19/2008 2:28:17 PM >>>

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Hi Mark...

Just a thought, are you basing your results on the CALPUFF 36 km runs? If the source is using the 4 km met data they get to compare their results to the annual average and not the 20% "worst days" we have to use.

Mike

From: DERF, MARK [<mailto:MDERF@idem.IN.gov>]

Sent: Thu 6/19/2008 1:28 PM

To: Abigail Fontaine; James G Haywood; Matthew Johnson; Majewski, Michael A - DNR; Scott Leopold; Margaret McCourtney; dana.thompson@epa.state.oh.us; Sarah.Vanderwielen@epa.state.oh.us; Carolina.Prado@epa.state.oh.us; david.brown@dnr.iowa.gov

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