EPA Reinforces Standards to Use “Representative Data” After Sierra Club

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On January 22, 2013, in Sierra Club v. EPA, the US Court of Appeals for the District of Columbia issued an opinion that addressed some Prevention of Significant Deterioration (PSD) permitting program issues. Following this case, on March 4, 2013, the EPA issued guidance entitled “Draft Guidance for PM2.5 Permit Modeling,” and on May 20, 2014, issued its final “Guidance for PM2.5 Permit Modeling.” Sierra Club held that the Environmental Protection Agency lacked the legal authority to create an exemption to the PSD preconstruction data-gathering requirement through the use of Significant Monitoring Concentrations (SMCs).

The purpose of this article is to assess whether Sierra Club, or the EPA PM2.5 Modeling Guidance, affects a state permitting authority’s discretion with regard to satisfying the preconstruction monitoring, or data-gathering, requirements mentioned above through the use of “representative data” from existing off-site monitors. This question is relevant with respect to a source, including natural gas-fired electric generation, which has to go through PSD permitting during initial construction or major modifications. Having to install on-site preconstruction monitors is costly, causes project delays, and typically leads to additional compliance burdens. The ability to use existing monitors, off-site, provided the data is “representative,” is an important time- and cost-saving mechanism for sources that have to go through PSD permitting.

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As outlined herein, it is within a state permitting agency’s discretion to allow a source to use existing monitors to satisfy preconstruction monitoring and data-gathering requirements, notwithstanding Sierra Club, provided that the monitors provide “representative data.” This article also discusses what factors and considerations determine whether data from an existing monitor is “representative” for a particular project site.

PRECONSTRUCTION DATA-GATHERING REQUIREMENTS

Sierra Club did not directly discuss or address whether the use of data from off-site monitors could be used to satisfy the preconstruction gathering requirement. However, Sierra Club did state that the preconstruction data-gathering requirement was extremely rigid and had no exceptions or exemptions. Therefore, it is important to understand the Clean Air Act’s (CAA’s) preconstruction data-gathering requirements for PSD permitting.

The CAA requires a PSD application to contain an “Air Quality Analysis,” which includes, among
other things, an analysis of whether emissions of pollutant for which an emissions standard exists would cause or contribute to a violation of the standard or “any maximum allowable increase.”

To complete this analysis, a source must collect and use between four and 12 months of “continuous air quality monitoring data.” The total time period for data gathering is determined by the appropriate permitting authority with respect to each pollutant for which there is a standard that will be emitted by the source. However, the time period must be at least four months, and is typically a year.

With respect to natural gas-fired generation, typically an air quality analysis is required with respect to the following (in an Attainment or Unclassified area for purposes of National Ambient Air Quality Standards):

- Carbon monoxide (CO)
- Particulate matter less than 10 microns in diameter (PM$_{10}$)
- Particulate matter less than 2.5 microns in diameter (PM$_{2.5}$)
- Nitrogen oxides
- Sulfur dioxide

Consequently, a natural gas-fired electric generation facility applying for a PSD permit, or for a modification thereof, will likely be required to gather and use between four and 12 months of continuous air quality monitoring data for the aforementioned pollutants. Sierra Club makes clear that this is a strict requirement, and that there are no exemptions. Therefore, the use of data from existing off-site monitors is only permissible and defensible if it is “representative” and is not considered or characterized as an exception to the preconstruction data-gathering requirement. For example, a source in a rural area cannot simply use monitoring data from a nearby metropolitan area, and conclude that the data can be used because it is conservative and overpredicts impacts. Rather, the source must demonstrate why the data from a particular monitor is “representative” of the conditions of the source and thus satisfy the preconstruction monitoring requirements.

**SCOPE OF SIERRA CLUB AND THE EPA GUIDANCE ON PM2.5 PERMIT MODELING**

It is worth noting that Sierra Club has a very narrow holding, pertaining to the challenged provisions regarding SILs and SMCs for PM2.5. On its face, the case does not impact a state agency’s discretion to use representative data for any pollutant. The holding was effectively summarized by the EPA as follows:

The EPA is currently reviewing the January 22, 2013, decision from the D.C. Circuit Court of Appeals that, on the EPA’s request, vacated and remanded to the EPA for further consideration certain portions of two Prevention of Significant Deterioration (PSD) regulations (40 CFR 51.166 and 40 CFR 52.21) that address Significant Impact Levels (SILs) for PM2.5. The EPA requested this vacatur and remand of two of the three provisions in EPA regulations that contain SILs for PM2.5, because the wording of these two SIL provisions (40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)) is inconsistent with the explanation of when and how SILs should be used by permitting authorities that we provided in the preamble to the Federal Register notice when we promulgated these provisions. The third SIL provision (40 CFR 51.165(b)(2)) was not vacated and remains in effect. The Court also vacated the parts of these two regulations that establish a PM2.5 Significant Monitoring Concentration (SMC), having found that the EPA was precluded from using the SMC as a de minimis exemption from the statutory requirement to do preconstruction monitoring. The court’s decision does not affect the PSD increments for PM2.5, which are also part of the two affected PSD regulations. (Retrieved from http://www.epa.gov/nsr/documents/summ_court_020613.pdf)

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Sierra Club does not address the use of “representative data” from existing off-site monitors. But it provided an indication that the preconstruction monitoring requirement must be strictly complied with. Rather, dicta in Sierra Club left open the question of whether “representative data” from existing off-site monitors would be prohibited as an exemption in lieu of on-site monitor installation and data gathering specific for the source.
The data-gathering rule states that the preconstruction data for use in the air impacts analysis must come from “continuous air quality monitoring data gathered for purposes of determining whether emissions of that pollutant would cause or contribute to a violation of the standard or any maximum allowable increase.” Therefore, if the data-gathering rule is as rigid as implied by Sierra Club, one could read it as requiring the data used in the analysis be only from monitors installed for the purpose of “determining whether emissions of [a particular] pollutant would cause or contribute to a violation of the standard or any maximum allowable increase” associated with the source’s activities triggering the PSD application requirements.

However, the EPA’s Guidance for PM2.5 Permit Modeling (both the Draft and Final) reflects that a state agency’s discretion for using preconstruction monitoring data with respect to all pollutants was not changed in light of Sierra Club, stating “the EPA believes PSD permit applicants may continue to meet the preconstruction monitoring requirements in these regulations by using data from existing monitors that are determined by the applicable permitting authority to be representative of background conditions in the affected area.”

The EPA Guidance likewise clarified that, from the agency’s perspective, Sierra Club has an extremely narrow holding, and that existing data representative of ambient conditions at the proposed site of the new source data (“representative data”) may still be used to satisfy the preconstruction monitoring requirement of PSD permitting.

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It is worth noting that in the EPA Environmental Appeals Board (EAB)6 decisions cited in the EPA Guidance, and generally, use of “representative data” is characterized as being used in lieu of preconstruction monitoring data. However, the EPA guidance, and the way to characterize the use of “representative data” from an existing off-site monitor is support of a PSD application, is permissible because “applicants may continue to meet the preconstruction monitoring requirements in [the CAA regulations] by gathering for purposes of the permitting analysis data already available from existing monitors that are determined by the applicable permitting authority to be representative of background conditions in the affected area.”

Summarily, Sierra Club did not impact the ability of a state permitting authority to use “representative data” from an existing monitor to satisfy the PSD preconstruction monitoring requirements. However, the use of “representative data,” as opposed to requiring the installation of on-site monitors for data collection, is within the discretion of the permitting authority.

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Consequently, the question becomes what constitutes “representative” and what can a source do to support and encourage a permitting authority to accept the use of a particular data set as “representative” notwithstanding the fact that it comes from an existing off-site monitor?

EAB DECISIONS ABOUT USE OF REPRESENTATIVE DATA

To understand the legal parameters of a permitting authorities’ discretion with respect to using “representative data,” one must examine the various agency guidance materials and any applicable decisions of the EAB. The EAB decisions described herein pertain to a permitting agency’s discretion to identify representative monitoring data to satisfy the preconstruction monitoring requirements of PSD permitting.

As reflected in the EPA’s guidance following the DC Circuit Court decision, there is a longstanding practice that allows a state permitting authority to use data from existing monitors to establish background concentrations in satisfaction of the preconstruction monitoring requirement. This practice is referenced generally in the Guideline on Air Quality Models, referenced in the Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), and has been repeatedly upheld as valid by the EAB.

The guidance materials and EAB decisions reflect that “[t]he choice of appropriate data sets...
Several cases, outlined below, demonstrate that the EAB will remand and reopen a permit if the state agency’s record fails to provide sufficient justification as to why particular data should be considered “representative” of background conditions, or fails to adequately respond to comments regarding the same during the permitting process. These cases likewise reflect the need for a source to actively ensure that the administrative record associated with its PSD permitting process, including the responses to comments, supports the exercise of the permitting authority’s discretion in selection of a particular dataset as “representative.” The first two EAB decisions below provide a concise statement of the broad nature of the permitting authority’s discretion in selecting an offsite monitor as a source of “representative data.” These two decisions reflect that an agency’s discretion, while broad, is defensible only when the record is support by the factors outlined in the EPA’s Ambient Monitoring Guidelines for Prevention of Significant Deterioration.

- In Re: Encogen Cogeneration Facility, 8 E.A.D. 244 (EAB 1999), a PSD permit was issued to Encogen Hawaii, L.P., and would authorize Encogen to construct a 65-megawatt cogeneration facility in Honokaa on the Big Island of Hawaii. The EAB approved the use of background data with higher pollution concentrations (i.e., a conservative dataset), noting that such provides “an additional margin of safety for future air quality at the site.”

- In Re: Knauf Fiber Glass, 8 E.A.D. 121 (EAB 1999), the Shasta County, California, Air Quality Management District issued a PSD permit to Knauf Fiber Glass, authorizing the construction of a new fiberglass manufacturing plant to be located in the city of Shasta Lake. The EAB approved the use of background data with higher pollution concentrations (i.e., a conservative dataset), noting that such provides “an additional margin of safety for future air quality at the site.”

- Relevant EAB Decisions: In one of the earliest EAB decisions discussing the use of “representative data,” the EAB denied the regional EPA’s petition for review and stated that “EPA allows substitution of existing representative air quality data in lieu of having the source generate its own preconstruction monitoring data, provided these data meet the criteria in the Ambient Monitoring Guidelines for Prevention of Significant Deterioration.” Taconite has been consistently cited and relied upon for the proposition that a state agency has broad discretion to use data it determines to be “representative” from existing monitors to satisfy the preconstruction monitoring requirements of PSD permitting.

Ambient Monitoring Guidelines for Prevention of Significant Deterioration. This guidance provides, and has been cited to and relied upon as the standard for, the following:

- The guidance determines the factors for establishing which monitoring sites have representative data.
- With respect to location, the existing monitoring data should be representative of three types of areas: (1) the location(s) of maximum concentration increase from the proposed source or modification, (2) the location(s) of the maximum air pollutant concentration from existing sources, and (3) the location(s) of the maximum impact area (i.e., where the maximum pollutant concentration would hypothetically occur based on the combined effect of the existing sources and the proposed new source).
- If the proposed source will be constructed in an area that is generally free from the impact of other point sources and area sources associated with human activities, then monitoring data from a regional site may be used as “representative data.” Such a site could be out of the maximum impact area but must be similar in nature to the impact area.

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[ Guidance documents on representativeness of data identify important factors to consider in evaluating the need for on-site data collection, but do not dictate exactly when... ]
on-site data must be used rather than data from nearby locations, such as the Redding data in this case. We will be inclined to support a permitting authority’s technical judgment on this issue, provided that its decision is adequately justified in the record.

- **In *In Re: Hawaii Electric Light Company*, 8 E.A.D. 66 (EAB 1998),** several petitions were filed opposing the state agency’s (DOH’s) issuance of a PSD permit to the Hawaii Electric Company to allow it to expand an existing generation facility. Several petitions argued “that DOH used background ambient air data that were either out of date or measured at an unrepresentative location. Several petitions also argue that the meteorological data used by DOH and the data regarding other pollution sources were not representative.”

The EAB ultimately remanded the permit to DOH to either provide a sufficient explanation of why the CO and ozone data used in its air quality analysis are reasonably representative of the air quality in the area to be affected by the expansion or perform a new air quality analysis based on either on-site data or other data shown to be representative of the air quality in the area to be affected by the expansion. The EAB indicated that evaluating the representativeness of data required one to consider the monitor’s location, the quality of the data, and the currentness of the data. With respect to the expansion project, the DOH used data from monitors that were more than 60 kilometers away and whose data was from the mid-1980s.

The EAB noted that decisions as to representativeness of data are generally left to the agency, but ultimately remanded the permit, reopening it, because the DOH had failed to adequately respond to concerns regarding the representativeness of the data.

- **In *In Re: Vulcan Construction Materials*, 2011 WL 776140 (EAB 2011),** the Illinois Environmental Protection Agency (IEPA) issued to Vulcan Construction Materials, Inc., LP, for renewed operation of a lime manufacturing plant in Manteno, Illinois. The Sierra Club petitioned the EAB to review the PSD for clear error with respect to, in part, IEPA conducting the required PSD preconstruction monitoring and analysis by relying on regional monitoring data.

With respect to this issue, the EAB held that IEPA failed to provide sufficient justification for the use of regional data in conducting required preconstruction monitoring and analyses and on remand IEPA must re-evaluate whether the use of regional monitoring data was appropriate and reopen the public comment period to provide the public with an opportunity to review and comment.

**LESSONS LEARNED FROM EAB DECISIONS**

In support of selecting a particular off-site monitor, and a corresponding dataset, as representative data, a state permitting authority’s administrative record should meet a number of requirements.

- The data should be relatively recent. Generally, data from the previous year, or the highest of the previous three years, is considered adequate.
• There are requirements concerning location of the monitor.
• Generally, if the monitor is situated such that it is either in close proximity to the new or modified source or its location is indicative of the maximum impacts associated with the new or modified source, then it is considered representative.
• The use of conservative data (i.e., data that presents a higher background concentration than is likely to actually occur) is typically considered representative data. However, state permitting authorities cannot avoid explaining the factors that make a particular site one with representative data by merely claiming the data is conservative.
• The data must be of a sufficient quality. Data recovered and/or whose quality is deemed adequate by the EPA’s monitor guidance will generally be considered sufficient.

CONCLUSION

It would be reasonable for state permitting authorities and industry stakeholders who are considering their needs in applying for a PSD permit to conclude that Sierra Club and the EPA guidance stemming from it have not altered the ability to use representative data from an existing offsite monitor to satisfy the preconstruction data-gathering requirements associated with PSD permitting.

Sierra Club and the EPA guidance stemming from it have not altered the ability of a PSD permit applicant or permitting authority to use “representative data.”

Ultimately, the administrative record associated with the PSD permitting must provide justification as to how data is determined to be representative. The applicant, to ensure a defensible permit if challenged, and assuming the air analysis used representative data from existing off-site monitors, should ensure the record demonstrates why existing data is representative using the framework established in guidance and EAB decisions.

It is also beneficial if the source, as part of its modeling protocol, identifies alternative monitoring sites with representative data, to allow the permitting agency to pick the most representative site. This helps demonstrate reasoned decision making by the agency, and shows the agency, not the source, is exercising discretion.

Additionally, a source should be prepared to respond to challenges against using existing representative data.

NOTES

1. 705 F.3d 458 (D.C. Cir. 2013) (Sierra Club).
2. Available online at http://www.epa.gov/scram001/guidance/guide/Draft_Guidance_for_PM25_Permit_Modeling.pdf. With respect to whether the use of existing “representative” data to satisfy the preconstruction monitoring requirements, there were no substantive changes between the Draft and Final Guidance, and consequently the Draft and Final Guidance are referred to collectively and generally herein as the EPA Guidance on PM2.5 Permit Modeling.
3. See 40 C.F.R. § 52.21(m)(1) and 42 U.S.C.A. § 7475(e).
4. See 40 C.F.R. § 52.21(m) and 42 U.S.C.A. § 7475(e).
5. Citing In Re: Northern Michigan University Ripley Heating Plant, PSD Appeal No. 08-02, slip op. at 58 (February 18, 2009) (“EPA has long implemented the PSD program pursuant to the understanding that representative data may be substituted where circumstances warrant.”).
6. The EAB allows permit applicants or holders, members of the public, and agencies the opportunity for appeals of the following:
   • PSD permitting decisions
   • EPA enforcement actions
   • Citizen suits appealing state permitting actions regarding state permitting programs such as PSD.
7. See Note 2, p. 22, stating: “EPA has long implemented the PSD program pursuant to the understanding that representative data may be substituted where circumstances warrant” (internal citations and quotations omitted).
9. See also H.R. Rep. No. 95-294, at 171 (1977) (“preconstruction, on-site air quality monitoring may be for less than a year if the basic necessary information can be provided in less time, or it may be waived entirely if the necessary data [are] already available”).
10. See, e.g., In Re: Knauf Fiber Glass, GMBH, 8 E.A.D. 121 (EAB 1999).
11. State permitting authorities will often have comparable guidance, but typically such guidance relies upon and incorporates the use of “representative data” from the EPA guidance cited herein.