

**FOR PUBLICATION**  
**UNITED STATES COURT OF APPEALS**  
**FOR THE NINTH CIRCUIT**

SIERRA CLUB,

*Petitioner,*

IMPERIAL COUNTY AIR POLLUTION  
CONTROL DISTRICT,

*Intervenor,*

v.

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY; MICHAEL O.  
LEAVITT,

*Respondents.*

No. 01-71902

EPA No.  
Clean Air Act

ORDER AND  
AMENDED  
OPINION

On Petition for Review of an Order of the  
Environmental Protection Agency

Argued February 10, 2003

San Francisco, California

Submission Deferred February 10, 2003

Resubmitted October 9, 2003

Filed October 9, 2003

Amended December 18, 2003

Before: William C. Canby, Jr., Diarmuid F. O'Scannlain, and  
William A. Fletcher, Circuit Judges.

Opinion by Judge O'Scannlain

**COUNSEL**

David S. Baron, Earthjustice Legal Defense Fund, Washington, D.C., argued the cause for petitioner Sierra Club and submitted briefs.

Thomas H. Pacheco, United States Department of Justice, San Francisco, California, argued the cause for respondent Environmental Protection Agency and submitted briefs. Thomas L. Sansonetti, Assistant Attorney General, Jan Taradash, Associate Regional Counsel, Environmental Protection Agency, and Geoffrey Wilcox also were on the briefs.

Rick R. Rothman, McCutcheon, Doyle, Brown & Enersen, LLP, Los Angeles, California, argued the cause for intervenor Imperial County Air Pollution Control District and submitted briefs. William H. Freedman and Michael S. McDonough also were on the briefs.

Michael S. Rhodes, Colley Godward LLP, San Diego, California, filed a brief on behalf of *amicus curiae* American

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Lung Association of San Diego and Imperial Counties. Andrea S. Hoffman, Robert R. Veith, and Craig A. Guthery also were on the brief.

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### ORDER

The opinion filed October 9, 2003 is hereby amended as follows:

Slip. Op. at 15008, lines 10-8 *from the bottom*: Replace the sentence that currently reads “The best evidence adduced by EPA is the windrose from Calipatria, several miles south of Brawley, which reveals very slight south-southeasterly winds” with the following:

“The evidence most supportive of EPA’s position is the windrose from Calipatria, 10.5 miles north of Brawley, which reveals very slight south-southeasterly winds.”

With this amendment, the petition for rehearing is hereby DENIED.

Intervenor Imperial County Air Pollution Control District’s motion to stay the mandate is GRANTED until March 17, 2004 to permit said Intervenor to file a petition for certiorari with the United States Supreme Court. If before that date a petition for certiorari is filed, this stay shall remain in effect until final disposition by the Supreme Court.

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### OPINION

O’SCANNLAIN, Circuit Judge:

We must decide whether the U.S. Environmental Protection Agency lawfully concluded that a Southern California county

would have achieved the 24-hour air quality standards required by the Clean Air Act but for the negative effects of transborder emissions from Mexico.

## I

Imperial County encompasses approximately 4,600 square miles in Southeastern California and is bordered by Riverside County to the north, Mexico to the south, Arizona to the east, and San Diego County to the west. The county shares approximately 80 miles of border with Mexico. Calexico, one of three significant population centers in the county, sits close by the border, not far from the Mexican city of Mexicali. Moving north from the border, the county's other two major population centers are El Centro and Brawley. As of 1999, the county had approximately 142,000 inhabitants.

The Imperial Valley runs roughly through the center of the county, from the northwest to the southeast, and across its southern border into Mexico. Most of Imperial County, save for a small stretch of land on the county's eastern end, falls within the Imperial Valley Planning Area ("Imperial Valley"), and Intervenor Imperial County Air Pollution Control District<sup>1</sup> serves as the local governmental agency charged with administering and enforcing the requirements of the Clean Air Act and other federal, state and local air quality laws and regulations.

In 1987, pursuant to the Clean Air Act, 42 U.S.C. §§ 7401-7671q ("CAA" or "Act"), the U.S. Environmental Protection Agency ("EPA") adopted new national ambient air quality standards ("NAAQS") based on health studies demonstrating the harmful health effects of particulate matter.<sup>2</sup> *See* 42 U.S.C.

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<sup>1</sup>The parties refer to Intervenor as "the State." We adopt their practice.

<sup>2</sup>Particulate matter, for the purposes of the NAAQS, is defined as air-borne material having an aerodynamic diameter of 10 microns or less. Hence the common abbreviation "PM-10." Studies showed that, when inhaled, PM-10 particles can penetrate deep into the respiratory tract where they can lodge in the lung tissue and lead to a variety of respiratory problems.

§ 7409. To comply with such standards, the expected concentration of PM-10 in a given area of the country cannot exceed (1) 150  $\mu\text{g}/\text{m}^3$  for more than one day per calendar year (the “24-hour standard”) or (2) an expected annual arithmetic mean of 50  $\mu\text{g}/\text{m}^3$  (the “annual standard”). 40 C.F.R. §§ 50.6(a) and (b). The States are responsible for ensuring compliance with both standards for PM-10 and must formulate a state implementation plan (“SIP”) for doing so. *See* 42 U.S.C. §§ 7407(a) and 7410(a).

In 1990, Congress once again amended the Act to classify areas of the country as “attainment” or “nonattainment,” the former classification comprising those areas that had met the NAAQS for PM-10, the latter those that had not. 42 U.S.C. § 7407(d).<sup>3</sup> The amendments provided for a further level of classification among those areas designated as nonattainment as either “moderate” or “serious.” *Id.* § 7513.

Imperial Valley was classified as a moderate PM-10 nonattainment area.<sup>4</sup> The Act required such “moderate” areas to meet the NAAQS by December 31, 1994 (the “attainment date”). *id.* § 7513(c)(1). Moderate areas failing to comply with the NAAQS, by the terms of the Act, would be reclassified as “serious,” *id.* § 7513(b)(2), and assigned a later attainment date, December 31, 2001, but would be required to adopt more stringent pollution controls. *Id.* §§ 7513(c)(2) & 7513a(b).

The 1990 Amendments also included a provision, CAA § 179B, which spared from § 7513(b)(2) reclassification “any State that establishes to the satisfaction of the Administrator

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<sup>3</sup>There is an additional category, “unclassifiable,” for those areas where there is insufficient information upon which to base a classification.

<sup>4</sup>The sources of PM-10 in Imperial County are dust (“primary geological material,” contributing more than 70 percent of the concentration), motor vehicle emissions (10 to 15 percent), and agricultural burning (4 to 8 percent).

that, with respect to a PM-10 nonattainment area in such State, such State would have attained the national ambient air quality standard for carbon monoxide<sup>5</sup> by the applicable attainment date, but for emissions emanating from outside the United States.” 42 U.S.C. § 7509a(d). EPA issued administrative guidance in 1994 setting forth “several types of information [that] may be used to evaluate the impact of emissions emanating from outside the U.S.” and demonstrate that a border area’s failure to meet the NAAQS was due to such foreign emissions. State Implementation Plans for Serious PM-10 Nonattainment Areas, and Attainment Date Waivers for PM-10 Nonattainment Areas Generally; Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 59 Fed. Reg. 41,998 (Proposed Aug. 16, 1994) (“General Preamble guidance” or “guidance”).

The five examples suggested by the EPA’s General Preamble guidance are:

1. The use of PM-10 monitors and meteorological information near the border to “[e]valuate and quantify any changes in monitored PM-10 concentrations with a change in the predominant wind direction.” 59 Fed. Reg. at 42,001.
2. The compilation of a comprehensive inventory of PM-10 emissions “within the U.S. in the vicinity of the nonattainment area . . . [to] demonstrate that the impact of those sources on the nonattainment area after application of reasonably available controls does not cause the NAAQS to be exceeded.” *Id.*
3. Analysis of “ambient sample filters for specific types of particles emanating from across the border (although not

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<sup>5</sup>All parties agree that the use of the term “carbon monoxide” instead of “PM-10” is simply an editorial mistake. See Petitioner’s Opening Br. at 7 n.2; Response Br. at 6 n.5; and Intervenor’s Br. at 7 n.4.

required, characteristics of foreign sources may be helpful.” *Id.*

4. A comparison between inventories of emission sources on both sides of the border and the relative magnitude of each. *Id.*
5. The use of “air dispersion and/or receptor modeling to quantify the relative impacts on the nonattainment area of sources located within the U.S. and of foreign sources of PM-10 (this approach combines information collected from the international emission inventory, meteorological stations, ambient monitoring network, and analysis of filters).” *Id.*

EPA prefaced these examples by noting that “the State may use one or more of these types of information or other techniques, depending on their feasibility and applicability, to evaluate the impact of emissions emanating from outside the U.S. on the nonattainment area.” *Id.* EPA added that it “will consider the information presented by the state for individual attainment areas on a case-by-case basis in determining whether an area may qualify for treatment under section 179B.” *Id.*

Imperial Valley’s attainment date — December 31, 1994 — came and went, but EPA took no action regarding reclassification. Almost six years later, when EPA still had not taken any action, the Sierra Club filed suit in U.S. District Court for the District of Columbia to compel EPA to make a reclassification determination regarding Imperial Valley. The suit was resolved by consent decree, under the terms of which EPA agreed to make a reclassification determination for Imperial Valley by October 9, 2001.

On August 10, 2001, EPA issued a notice of proposed rule-making (“NPR”) in which it proposed “to find that the State of California has established to EPA’s satisfaction that the

Imperial Valley Planning Area (Imperial County) . . . would have attained the national ambient air quality standards (NAAQS) for particulate matter . . . by the applicable . . . attainment date, but for emissions emanating from outside the United States, i.e., Mexico.” Clean Air Act Finding of Attainment and Alternative Finding of Nonattainment and Reclassification to Serious; California-Imperial Valley Planning Area; Particulate Matter of 10 microns or less (PM-10), 66 Fed. Reg. 42,187 (proposed August 10, 2001).<sup>6</sup> The EPA action was based on the “Imperial County PM-10 Attainment Demonstration,” a document filed on July 18, 2001 and developed by the State which used data culled from six PM-10 monitors in the county, spatial plots,<sup>7</sup> windroses,<sup>8</sup> back trajectories,<sup>9</sup> and a model based upon an inventory of emissions sources in the Imperial Valley. Based upon this information, the State contended that but for emissions from Mexico which were borne aloft and across the border by the wind, the county would

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<sup>6</sup>As the title of the proposed rule indicates, if it were convinced by the public comments, EPA would conclude that the State failed to make a sufficient showing under § 179B. The NPR was accompanied by a technical support document (“TSD”) that examined the evidence put forward by Imperial Valley in support of its assertion that it would have attained the NAAQS but for emissions from Mexico.

<sup>7</sup>Spatial plots demonstrate the concentration of PM-10 measurements at various monitoring stations in a given area. In this case, the State contends that spatial plots tend to show a high concentration of PM-10 at those stations close to the border, with decreasing levels the further one moves north, consistent with its theory that windblown emissions from Mexico waft into Imperial County, causing exceedances of PM-10 NAAQS.

<sup>8</sup>A windrose is a diagram showing the percentage of time that wind blows from each compass direction for various ranges of wind speeds.

<sup>9</sup>A back trajectory is a map that, by measuring the speed and direction of winds a certain distance above the ground, attempts to show where a given parcel of air that hits a monitor most likely originated. According to the State’s Attainment Demonstration, “[t]he trajectories demonstrate 1) when the air passes through Mexico and then into Imperial County; 2) when the air might have circumvented the monitors in Calexico and impacted the northern monitors in Imperial County; and 3) when air may have come from Mexico, but not necessarily through Mexicali.”



have met both the annual and 24-hour standards by the attainment date.

Sierra Club submitted comments opposing the proposed rule, arguing that the State had failed to make the required demonstration. Specifically, Sierra Club contended that (1) under the Act, the State was required to use a certain kind of modeling in order to make the required demonstration; (2) the emissions inventory used by the State in its model was neither current nor accurate; (3) the State had failed to show that emissions from Mexico have actually caused violations to occur at U.S. monitors, but instead had merely assumed such causation; and (4) the State had failed to account for exceedances of the NAAQS after the December 31, 1994 attainment date, let alone show that those exceedances were the result of emissions from Mexico.<sup>10</sup>

Rejecting Sierra Club's challenge to the State's demonstration, EPA issued a final rule on October 19, 2001, finding that "the State of California has established to EPA's satisfaction that the Imperial Valley Planning Area (Imperial County) . . . would have attained the national ambient air quality standards for [PM-10] . . . by the applicable Clean Air Act attainment date, December 31, 1994, but for emissions emanating from outside the United States, i.e., Mexico." Clean Air Act Finding of Attainment; California-Imperial Valley Planning Area; Particulate Matter of 10 Microns or Less (PM-10), 66 Fed. Reg. 53,106 (adopted October 19, 2001). EPA found that the State demonstration "provides the best qualitative analysis of the emissions from Mexico possible for the Imperial County area for the period in question." *Id.* at 53,109. EPA concluded that

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<sup>10</sup>Sierra Club also contended that the refusal to reclassify Imperial Valley as a serious nonattainment area would be unlawful because the State had failed to submit a state implementation plan. This claim is not raised in its petition for review.

[w]hile Sierra Club raises some important issues, EPA was aware of those issues prior to the proposed rulemaking and has not been convinced by Sierra Club that the State's 179B(d) demonstration is inadequate and that the finding of nonattainment and reclassification to serious should be finalized.

*Id.* at 53,107.

Sierra Club timely petitions this court for review of the EPA Administrator's decision.

## II

“Review of agency action to determine its conformity with . . . the CAA . . . is governed by the judicial review provisions of the [Administrative Procedure] Act, [(“APA”)] 5 U.S.C. §§ 701-706.” *Pub. Citizen v. Dep’t of Transp.*, 316 F.3d 1002, 1021 (9th Cir. 2003). Under § 706 of the APA, the court must satisfy itself that the agency action was not “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). We have interpreted this statutory provision as requiring the agency to “articulate[ ] a rational connection between the facts found and the choice made.” *Arizona Cattle Growers’ Ass’n v. U.S. Fish & Wildlife Serv.*, 273 F.3d 1229, 1236 (9th Cir. 2001).

[1] We recognize that where, as here, a court reviews an agency action “involv[ing] primarily issues of fact,” and where “analysis of the relevant documents requires a high level of technical expertise,” we must “defer to the informed discretion of the responsible federal agencies.” *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 377 (1989); *see also Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983) (“When examining this kind of scientific determination . . . a reviewing court must generally be

at its most deferential.”); *Arizona Cattle Growers’ Ass’n*, 273 F.3d 1229, 1236 (9th Cir. 2001) (“We are deferential to the agency’s expertise in situations, like that here, where resolution of the dispute involves primarily issues of fact.”). While our deference to the agency is significant, we may not defer to an agency decision that “is without substantial basis in fact.” *Fed. Power Comm’n v. Florida Power & Light Co.*, 404 U.S. 453, 463 (1972). Indeed, the Supreme Court has made clear that, in considering an agency’s explanation for its action, courts “must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.” *Motor Vehicle Mfrs. Ass’n of U.S. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks omitted). One example provided by the Court of such a “clear error of judgment” sufficient to constitute arbitrary and capricious agency action is when “the agency offer[s] an explanation that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Id.*

At oral argument, we questioned counsel for EPA about two specific dates, January 19 and January 25, 1993, on which exceedances of the 24-hour PM-10 standard were recorded at Brawley, twenty-one miles north of the County’s border with Mexico. Examining the evidence produced by the State, EPA agreed with the State’s assertion that these exceedances likely were caused by wind-borne PM-10 from Mexico. Sierra Club challenged this conclusion — both in its briefs before this court and at oral argument — by noting that the wind data on those two days do not comport with the theory of cross-border transport of PM-10. Specifically, on January 19 and January 25, 1993, the winds in Imperial County show significant — even predominately — westerly components. That is, the winds were largely out of the west. Given that Brawley is, obviously, north of the Mexican border — and northwest of Mexicali, the Mexican city alleged to be the

principal source of transborder PM-10 — Sierra Club argues that it is highly unlikely that such exceedances could be attributed to emissions from Mexico. Sierra Club buttresses its assertion that emissions from Mexico could not have caused the two exceedances at Brawley by noting that, on the two days in question, monitors south of Brawley (and thus closer to the border with Mexico) recorded significantly lower levels of PM-10 than those recorded at Brawley. Presumably, if wind-borne emissions traveling northward from Mexico were the cause of the exceedances at Brawley, one could expect similarly high levels of PM-10 closer to the border. The record indicates that such was not the case.

There was some uncertainty at oral argument — neither the parties nor the record provided an answer — as to whether either or both exceedance days were sufficient, standing alone, to constitute a violation of the 24-hour PM-10 NAAQS. To put it another way, the question is: If the wind-borne emissions from Mexico did not cause either or both of such exceedances, must the panel grant the petition and vacate EPA's finding?

We ordered supplemental briefing on the matter. The parties' supplemental briefs informed us that the Brawley monitor sampled the air quality only on every sixth day. In order to determine whether the two recorded exceedances constituted a violation of the 24-hour NAAQS for PM-10, which allow only for one exceedance per year of the 24-hour standard in a given area, the actual number of exceedances is adjusted to take account of the days that are not sampled. The adjustment is made according to a formula set forth at 40 C.F.R. Part 50, Appendix K. Applying this formula to the two recorded exceedances at Brawley reveals that the expected number of exceedances of the 24-hour standard is 4.3 days per year, far above the one day exceedance allowed under the NAAQS. Applying the formula to only one of the two days in question results in exceedance of the 24-hour standard on 2.14 days per year. Thus, both parties agreed in their supple-

mental briefs that either one of the two recorded exceedances would have been enough to trigger a violation of the 24-hour PM-10 NAAQS. EPA continued to assert, however, that the cause of both exceedances was emissions from Mexico and thus, Imperial Valley would have attained the 24-hour standard but for such emissions.

[2] We disagree. The pattern of recorded PM-10 levels on January 19 and January 25, 1993, does not comport with the State's theory that emissions from Mexico — and Mexicali in particular — caused the Brawley monitors to exceed the 24-hour NAAQS for PM-10. We believe that EPA's conclusion that Imperial Valley would have satisfied the 24-hour standard but for emissions from Mexico "runs counter to the evidence" before the agency concerning the exceedances at Brawley. *State Farm*, 463 U.S. at 43. As noted above, the data upon which EPA relies show winds trending, at best, in a southwesterly direction, but even then only nominally so. The windroses, meanwhile, show a similar west to southwesterly component. The evidence most supportive of EPA's position is the windrose from Calipatria, 10.5 miles north of Brawley, which reveals very slight south-southeasterly winds. But that same windrose shows stronger winds from the northwest. At oral argument, counsel for EPA had no explanation for the decided lack of southerly winds on the days in question, but nevertheless insisted that the data showed winds with a southerly component. There are two problems with counsel's assertion, which was reiterated in EPA's supplemental brief. First, EPA's notion of what constitutes a southerly wind in the windroses is, at the least, expansive and, at most, positively incorrect. Second, the "southerly component" EPA professes to locate in the wind data would appear to be inconsistent with its theory of the case: that is, whatever "southerly component" the wind data reveals is of the west-southwesterly variety and thus does not support the theory of transport from Mexico.

### III

Although the normal course of action when the record fails to support an agency's decision "is to remand to the agency

for additional investigation or explanation,” *Florida Power & Light Co. v. Lorion*, 470 U.S. 729, 744 (1985), both Supreme Court and Ninth Circuit precedent acknowledge the propriety of remanding with instructions in exceptional cases. *See, e.g., id.* (“except in rare circumstances”); *Alvarado Cmty. Hosp. v. Shalala*, 155 F.3d 1115, 1125 (9th Cir. 1998) *as amended by* 166 F.3d 950 (9th Cir. 1999) (remanding with instructions to recalculate Medicare service provider reimbursements using newly-available data); *Smolen v. Chater*, 80 F.3d 1273, 1292 (9th Cir. 1996) (remanding with instructions to award Social Security benefits because “the record has been fully developed and . . . further administrative proceedings would serve no useful purpose”); *see also Sierra Club v. EPA*, 311 F.3d 853 (7th Cir. 2002) (remanding with instructions where the EPA had exceeded its statutory authority by granting a nonattainment exception on statutorily-unenumerated grounds).

[3] We think this is such a case. Based on the data and the reports in the record, there simply is no possibility that Mexican transport could have caused the observed PM-10 exceedences on January 19 and January 25. We fail to see how further administrative proceedings would serve a useful purpose; the record here has been fully developed, and the conclusions that must follow from it are clear. We therefore GRANT the petition, VACATE the order, and REMAND WITH INSTRUCTIONS that the EPA classify Imperial Valley as a “serious” nonattainment area.<sup>11</sup>

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<sup>11</sup>Because we have reversed EPA’s conclusion with respect to the 24-hour NAAQS, and because the Ninth Circuit has previously held that an area must meet both the 24-hour and annual NAAQS in order to comply with Clean Air Act requirements, *see Ober v. EPA*, 84 F.3d 304, 309 (9th Cir. 1996), we need not reach the merits of Sierra Club’s challenge to EPA’s conclusion regarding Imperial Valley’s attainment of the annual PM-10 NAAQS.