ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1385 (and consolidated case Nos. 15-1392, 15-1490, 15-1491, 15-1494)

MURRAY ENERGY CORPORATION,
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

Petition for Review of Final Administrative Actions of the
United States Environmental Protection Agency

PROOF REPLY BRIEF OF PUBLIC HEALTH AND ENVIRONMENTAL PETITIONERS

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Pursuant to Circuit Rule 28(a)(3), the following is a glossary of acronyms and abbreviations used in this brief:

ATS	American Thoracic Society
CASAC	Clean Air Scientific Advisory Committee
CASAC Letter	EPA-HQ-OAR-2008-0699-0190
Comments	EPA-HQ-OAR-2008-0699-2720
Dkt	EPA-HQ-OAR-2008-0699
EPA	U.S. Environmental Protection Agency and Gina McCarthy, Administrator
ISA	EPA-HQ-OAR-2008-0699-0405
NAAQS	National ambient air quality standards
PA	EPA-HQ-OAR-2008-0699-0404
ppb	Parts per billion
ppm	Parts per million
PSD	Prevention of significant deterioration
RTC	EPA-HQ-OAR-2008-0699-4309

SUMMARY OF ARGUMENT

EPA does not dispute that, combined, the level and form of the primary (health) ozone national ambient air quality standard ("standard" or "NAAQS") mean communities meeting the standard will experience multiple days with ozone levels that EPA agrees cause adverse effects in healthy young adults. EPA tries to defend the standard with its "Exposure Assessment," but that document estimates that, in just 15 cities, 18,000 children will experience multiple exposures in one year to ozone levels EPA agrees are unsafe. And EPA affirms that most healthy adults exposed in a controlled human experiment to such ozone levels experienced adverse effects. EPA's own analyses thus confirm that because the standard allows harmful ozone levels to occur repeatedly, adverse effects will occur. Accordingly, this Court's case law requires the standard be strengthened.

The standard is independently arbitrary because EPA gave irrational explanations for finding that 0.072 parts per million ("ppm") was the lowest identified level at which ozone causes adverse effects. The Clean Air Scientific Advisory Committee ("CASAC") repeatedly provided scientific advice that sensitive populations virtually certainly experience adverse effects at 0.070 ppm and below, and controlled human exposure studies documented that, at even lower exposures, healthy adults suffered effects that EPA has consistently treated as proof of adverse effects in asthmatics and other sensitive groups.

EPA's brief also confirms that EPA unlawfully and arbitrarily reverse-engineered the secondary (welfare) standard to match the primary, rather than specifying a level that actually protects against ozone damage to plants, as the Act requires.

EPA is unable to manufacture authority to override the Act's unambiguous requirement that new or modified major sources of air pollution must demonstrate they will not cause or contribute to violations of the new standard. EPA thus illegally waived this requirement.

ARGUMENT

I. THE PRIMARY STANDARD IS UNLAWFUL AND ARBITRARY.

A. EPA's Standard Unlawfully and Arbitrarily Allows Children, Asthmatics, and Others to Suffer Effects EPA Acknowledges Are Adverse.

1. EPA's own estimates show that—in just the 15 cities studied—its 2015 ozone standard will consign thousands of children to experience adverse health effects. The centerpiece of EPA's defense, *see* Brief for Respondent ("EPA Br.") 53-64, EPA's Exposure Assessment estimates that if those 15 areas complied with the standard, hundreds of thousands of children, including tens of thousands of asthmatic children, would still experience dangerous ozone exposures, with 18,000 children repeatedly exposed to 0.070-0.079 ppm. Opening Brief of Public Health and Environmental Petitioners ("Health/Environmental Br.") 26-27. These

numbers are underestimates, for they are based on simulations covering only about 25% of children in the nation. *Id.* 27. Nor do they count exposures of the millions of adults who work outdoors (16.8 million), are elderly (over 40 million), or have asthma (over 18 million) or other respiratory diseases and thus are especially vulnerable to ozone pollution. *See* Dkt[1]-0404 ("PA") 3-88 & tbl.3-7, JA____.

EPA further agrees (at 49) that the majority of the healthy adults exposed in a similar way in a laboratory setting to 0.072 ppm ozone experienced adverse effects. *See* Health/Environmental Br. 27-28; 80 FR 65,292, 65,312/3 (Oct. 26, 2015) (Exposure Assessment "approximate[s] conditions in [relevant] controlled human exposure studies"), JA____. Because children are physiologically more vulnerable to ozone pollution, they will have at least as severe reactions, per EPA. PA 3-81 to -82, JA____-__. Thus, accepting *arguendo* EPA's own estimates, the standard allows tens of thousands to hundreds of thousands of children to suffer health harms from ozone pollution.[2] The exposures at issue can cause very serious harms, like asthma attacks, hospitalizations, emergency room visits, and deaths.

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[1] "Dkt" references are to document numbers in EPA docket EPA-HQ-OAR-2008-0699.

[2] EPA's own Risk Assessment predicts hundreds of thousands of children will repeatedly experience 15% lung function decrement, a level CASAC said was a "surrogate for adverse health outcomes in active healthy adults." 80 FR 65,315 tbl.2, JA____; Dkt-0190 ("CASAC Letter") 3, JA____.

See Dkt-4309 ("RTC") 13, JA____. Because adverse effects will occur, the standard is unlawful and arbitrary, for this Court has repeatedly held, "If a pollutant adversely affects the health of…sensitive individuals, EPA must strengthen the entire national standard." *Coal. of Battery Recyclers Ass'n v. EPA*, 604 F.3d 613, 618 (D.C. Cir. 2010) (alteration removed); *American Lung Ass'n v. EPA*, 134 F.3d 388, 389 (D.C. Cir. 1998); *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1153-55 (D.C. Cir. 1980) (similar).

2. Though the standard is unlawful and arbitrary even under the Exposure Assessment's estimates, it must fall for a more basic reason: under the combination of form and level EPA selected, areas that comply with the standard will have air quality that EPA agrees is harmful for ordinary people engaging in ordinary activities. *See* EPA Br. 63 (standard's protectiveness "is due to the combination of all of the elements of the standard (*i.e.*, indicator, averaging time, form, level)"). Indeed, EPA does not deny that the standard allows harmful air quality, and that areas that meet the standard will continue to experience ozone levels EPA agrees cause adverse effects in healthy adults, Health/Environmental Br. 21-23. *See* EPA Br. 48-49 (confirming that ozone causes "adverse effects at 72 ppb[3]"), 58 (noting "cities where a revised standard of 70 ppb will allow multiple

[3] To convert parts per billion ("ppb") to ppm, divide by 1,000. Thus, 72 ppb is 0.072 ppm.

days with a highest daily level above 72 ppb"). This combination of form and level means communities will experience numerous days annually with air pollution levels that cause human health harms. Under this Court's case law, the standard thus must be strengthened. *See, e.g.*, *American Lung*, 134 F.3d at 389; *see also* S. Rep. No. 91-1196, at 10 (1970) (defining when "[a]mbient air quality is sufficient to protect" sensitive populations' health).

EPA's own logic leads to the same conclusion. EPA explains revision of the 2008 standard was justified because "people exposed to air quality that would meet the 2008 standard can experience adverse health effects caused by ozone." EPA Br. 51; *accord id.* 40-41 (relying on "evidence showing that large numbers of people experience or can experience adverse effects when exposed to air quality allowed by the 2008 standard"). The same justification holds for the 2015 standard. EPA does not dispute that areas just meeting the standard average two days annually with ozone levels above 0.072 ppm, and some will have many more (*e.g.*, 16 in Columbia, SC), including some very high peaks (*e.g.*, 0.091 ppm in Akron, OH; 0.085 ppm in Columbia, SC). Health/Environmental Br. 22-23. Thus, when exposed to air quality allowed by the 2015 standard, large numbers of people can and will experience adverse effects. Accordingly, for the same reasons EPA found the 2008 standard failed to satisfy § 7409(b)(1)'s requirements, the 2015 standard is unlawfully and arbitrarily underprotective.

EPA cannot salvage the standard by claiming (at 56-57) that ozone levels it allows are harmful only when people breathe at elevated rates. These "elevated rates" result from "light" or "moderate exercise"—in ordinary terms, walking slightly briskly. *See* 80 FR 65,332/1-2 & n.93, JA____; Dkt-0405 ("ISA") 6-7 tbl.6-1, JA____. Under the standard, ozone levels will reach and exceed the 0.072 ppm level EPA says causes harm on multiple days annually, in areas throughout the nation where ordinary people walk, work, and exercise outside. It is not legal or rational for EPA to set a standard that allows air pollution that's unsafe for people engaged in ordinary activities. Health/Environmental Br. 19-24.[4]

Indeed, EPA previously correctly found that "[s]tandards must be based on a judgment of a safe air quality level and not on an estimate of how many persons will intersect given concentration levels." *Id.* 25 (quoting 44 FR 8202, 8210/1 (1979), JA____); *see also Nat'l Ass'n of Mfrs. v. EPA*, 750 F.3d 921, 926 (D.C. Cir. 2014) ("The point of the NAAQS program is to safeguard the quality of the 'ambient air….'"); S. Rep. No. 91-1196, at 10 (standards must ensure "absence of

[4] Industry Intervenors' claims (at 9 nn.3-4) that adverse effects the standard allows are purportedly minor and the standard is purportedly close to background levels are irrelevant because EPA did not rely on them, and wrong because EPA must protect against adverse effects, yet the standard allows ozone levels above 0.072, 0.080, and even 0.100 ppm, where adverse effects unquestionably occur. Health/Environmental Br. 23. Further, proximity to background is legally irrelevant in standard-setting. Health Int. Br. 15-25.

adverse effect on the health" of people "who in the normal course of daily activity are exposed to the ambient environment"). Contrary to EPA's current claim (at 57), in 1979 the agency was rebutting a commenter's argument that the 1979 ozone standard was overprotective because EPA had not "accounted for the portion of time that persons are indoors and, thus, not exposed to higher ambient concentrations." 44 FR 8210/1, JA____. EPA squarely rejected that argument in 1979, but now embraces that illegal, anti-protective position, relying (at 53-64) almost entirely on its Exposure Assessment. That Assessment roughly estimates numbers of people in certain areas who might be exposed in certain ways to certain ozone levels based on assumptions and predictions about emission reductions, weather conditions, and people's activities. Health/Environmental Br. 10. It is hardly a substitute for adopting standards that assure the air is actually safe on any given day for children to play outside and for people to engage in ordinary outdoor activities.

EPA says (at 60) it estimates "more than 99% of [about 19 million] children" in certain cities will not experience dangerous "exposures of concern." As well as disregarding dangerous exposures for asthmatic adults, outdoor workers, and other sensitive populations, a percentage estimate is not a rational basis for allowing adverse effects to persist. EPA's percentage is a function of the choice of denominator: the adverse effects that result from dangerous exposures do

not become insignificant just because some or even most people do not suffer them. *See American Lung*, 134 F.3d at 389 ("NAAQS must be set at a level at which there is an absence of adverse effect on…sensitive individuals" (internal quotation marks omitted)); *id.* 392 ("'localized,' 'site-specific' or even 'infrequent' events might nevertheless create a public health problem, particularly since, in some sense, all pollution is local and site-specific….").

EPA's selective reliance (at 62) on CASAC's "endorsement" of "EPA's approach" in the Exposure Assessment is unavailing. CASAC warned that the Assessment "may give the false impression" of being more certain than it truly is. Dkt-0188 at 6, JA____. That CASAC supported EPA's analysis in part says nothing about whether EPA can lawfully adopt a standard that allows exposures at levels EPA acknowledges cause adverse effects. *See* Health/Environmental Br. 33-34 (CASAC's recommendations about ozone's effects at various levels are scientific, but recommendations about final level for standard are legal judgments).

Contrary to EPA's claim (at 62), its action is barred—not supported by—*Lead Industries*, 647 F.2d at 1144, 1160-61. Petitioners there challenged only that the standards were overprotective, and EPA explained its numerical goals were "allowances for a margin of safety." *Id.* 1156, 1161. Far from holding EPA could allow known adverse effects to persist, the Court held that if a pollutant adversely

affects a sensitive population, EPA must strengthen the standard. *Id.* 1153; *accord Battery Recyclers*, 604 F.3d at 618; *American Lung*, 134 F.3d at 389.

3. Even if it were permissible to adopt a standard that allows known adverse effects to persist, EPA has failed to provide a rational explanation for why the allowed adverse effects do not present a public health problem. Contrary to EPA's claim (at 60), the situation here is even more egregious than in *American Lung*, 134 F.3d at 392. There, it was hotly disputed (and left unresolved) whether EPA had found certain pollution levels adversely affect asthmatics' health. *Id.* 391-92. Here, by contrast, EPA expressly found that ozone exposure at 0.072 ppm over a 6.6-hour period causes adverse health effects in healthy adults. *E.g.*, 80 FR 65,363/2, JA____; *see* EPA Br. 21, 45. There is no dispute that the standard allows these harmful exposures to occur, based on real-world monitoring data and EPA's own Exposure Assessment. EPA nowhere rationally explained why tens of thousands of repeated exposures to admittedly unsafe ozone levels are "not a public health problem." *American Lung*, 134 F.3d at 392; Health/Environmental Br. 26-27.

Further, EPA confirms its inconsistency about protecting children who spend substantial time outdoors, like summer campers, Health/Environmental Br. 28-29 (describing how EPA failed to rationally consider results of "sensitivity analysis" examining predicted exposures of such children). Though EPA agrees

that this population must be protected under the Act, RTC 118, 121, JA____, ____, it would (at 61) write off the sensitivity analysis's results as "appl[ying] only to a very small number of people." EPA thus still provides no rational explanation of how its standard protects that population, or why the impacts are not a public health concern.

Finally, EPA confirms that its secondary reliance on "stability" to justify the standard's form relied entirely on the unexplained potential harm to public health from shifting more areas into nonattainment. *See* EPA Br. 64 (citing 79 FR 75,234, 75,294/3 (Dec. 17, 2014), JA____; PA 4-7 to -8, JA____-__). EPA has given no explanation for how such shifts undercut public health protection, which is the sole allowable basis for the standard. *See* Health/Environmental Br. 29-30. To the extent EPA's lawyers seek to rely on potential harm to public health from areas shifting from nonattainment to attainment, that *post hoc* argument is not cognizable. *E.g.*, *NRDC v. EPA*, 755 F.3d 1010, 1020-21 (D.C. Cir. 2014). Because any such harm results from EPA's other voluntary regulatory decisions, *see* 40 C.F.R. § 51.1118, it would be arbitrary to rely on it.

B. EPA Arbitrarily Dismissed CASAC Findings and Evidence That Adverse Effects Occur in Sensitive Populations at and Below 0.070 ppm.

Independently, the health standard is arbitrary because EPA failed to rationally explain the basis for its key conclusion that the lowest identified level at

which adverse effects occurred is 0.072 ppm. *See* EPA Br. 21 (citing 80 FR 65,363/2, JA____). The issue here is not whether EPA had "to pick a level of 60 ppb," as EPA's lawyers wrongly insist (at 36, 53), but whether EPA rationally concluded that 0.072 ppm was the lowest level at which adverse effects occurred. For the reasons discussed below, it did not.

1. EPA Failed to Rationally Explain Its Departure from CASAC's Scientific Finding That Adverse Effects Occur at 0.070 ppm.

Contrary to EPA's assertions (at 66-68), CASAC repeatedly offered plain scientific (not policy) advice that ozone at 0.070 ppm (and not just at 0.072 ppm) "almost certainly" and with "substantial scientific certainty" causes adverse health effects, CASAC Letter 6, 8, JA____, ____. Health/Environmental Br. 31-34. Petitioners identified (at 31, 33) multiple instances where CASAC so found—not just a "single" instance as EPA falsely implies (at 67). EPA thus completely disregards CASAC's "scientific conclusion[]…that in healthy subjects, decreases in lung function and respiratory symptoms occur at concentrations as low as 72 ppb and that these effects almost certainly occur in some people, including asthmatics and others with low lung function who are less tolerant of such effects, at levels of **70 ppb** and below." CASAC Letter 6 (emphasis added), JA____. EPA agrees the combination of decreased lung function with other symptoms is an adverse effect, yet offers no scientific (or other) explanation for departing from

CASAC's finding that this combination occurs "at levels of 70 ppb and below." That is arbitrary. Health/Environmental Br. 32 (quoting *Mississippi v. EPA*, 744 F.3d 1334, 1355, 1357-58 (D.C. Cir. 2013)).

EPA did not rationally address CASAC's finding merely by "not[ing] several times that CASAC had judged that" these effects "will 'almost certainly occur in some people'…at levels below 72 ppb," Br. of Industry Respondent-Intervenors 15. EPA falsely stated that "CASAC did not" "provide advice as to" or "specify or otherwise indicate how far below" 0.072 ppm adverse effects would occur. Health/Environmental Br. 32-33 (emphasis added; quoting 80 FR 65,353/2, 65,357/3, JA____, ____; RTC 202, JA____). CASAC was clear that "at levels of 70 ppb," "these [adverse] effects almost certainly occur." CASAC Letter 6 (emphasis added), JA____. Arbitrarily, without acknowledgment or explanation, EPA departed from CASAC's advice that EPA itself quoted repeatedly, 80 FR 65,318/3, 65,322/3, JA____, ____. Health/Environmental Br. 32-33.

Contrary to EPA's claims (at 66-67), CASAC's scientific finding that "[a]t 70 ppb, there is substantial scientific certainty of a variety of adverse effects" did not somehow become policy advice merely because CASAC also provided legal and policy advice on the level at which the standard should be set, CASAC Letter 8, JA____. Examining the "scientific evidence" about ozone's effects and explaining its "scientific conclusions," CASAC repeatedly identified 0.070 ppm as

a level where adverse effects are likely to occur. *Id.* 5-6, 8, JA____-__, ____. EPA cannot justify its failure to give any explanation for its departure from CASAC's scientific advice by hiding behind CASAC's legal and policy advice. *See* Health/Environmental Br. 33-34; *Mississippi*, 744 F.3d at 1357-58.

2. EPA Arbitrarily Dismissed Evidence of Health Effects It Previously Deemed Proof of Adverse Effects for Asthmatics.

Several controlled human exposure ("chamber") studies showed lung function decrements of over 10% in healthy adults exposed to concentrations at and around 0.060 ppm, and EPA conceded that the decrements were "not isolated effects on idiosyncratically responding individuals." RTC 23, JA____; *see also* Dkt-2720 ("Comments") 62, 64-68, JA____, ____-__. EPA dismisses these results by claiming that evidence of significant lung function decrements in healthy adult test subjects is no longer considered evidence of adverse effects in untested sensitive populations without other evidence of respiratory effects in these healthy subjects. EPA Br. 68-71. This claim is irrational because when chamber studies show with certainty that exposures to a certain concentration of ozone will cause a significant number of healthy adults to suffer 10% or greater lung function decrements, sensitive populations will not only also suffer at least the same deterioration in lung function but will also likely change their activities and increase use of medication—which EPA has always found meets the definition of

an adverse effect. Health/Environmental Br. 38-40; *see, e.g.*, 73 FR 16,436, 16,463/1-3 (2008) (explaining logic), JA____.

Instead of offering any technical defense, EPA asserts (at 69-70) that its dismissal of the evidence was consistent with guidance from the American Thoracic Society ("ATS") and CASAC. Importantly, EPA is not applying some new or different ATS definition of "adverse effect" than it has previously. What changed here is that EPA is irrationally requiring chamber study evidence of the combination of lung function decrements and symptomatic responses in healthy adults in order to demonstrate adverse effects in sensitive people. The Act requires EPA to protect sensitive people against adverse effects, and EPA has long agreed that chamber studies demonstrating 10% or more decrement in lung function of healthy adults alone satisfies the ATS definition because for sensitive people, "even moderate functional responses (e.g., …decrements ≥ 10% but < 20%) would likely interfere with normal activities for many individuals, and would likely result in more frequent medication use," (*i.e.*, symptomatic responses). 73 FR 16,463/2-3, JA____; *see also Mississippi*, 744 F.3d at 1349 ("EPA considers [10% lung function decrement] to be harmful (or 'adverse') to asthmatics") (citing 73 FR 16,454-55) (emphasis added). EPA has not explained why ignoring how people with lung diseases like asthma would be adversely affected by the 10% lung

function decrements found in healthy adults was consistent with ATS guidance or protective of sensitive populations. *See* Health/Environmental Br. 37-40.

Nor was its approach consistent with CASAC's advice. As EPA admits, CASAC made the same finding that EPA had, until this rulemaking, consistently made: "lung function decrements of 10% or greater observed in some individuals after exposure to 60 ppb ozone 'could be adverse in individuals with lung disease.'" EPA Br. 70 (quoting CASAC Letter 7, JA ____) (emphasis omitted). CASAC further advised that such decrement "is a scientifically relevant surrogate for adverse health outcomes for people with asthma and lung disease" and emphatically stated that a standard allowing "11% to 22% of school age children…to experience at least one day with" such decrements was "not protective of public health." CASAC Letter 3-4, JA____-__. EPA's response was not consistent with this advice that such decrement alone demonstrates adverse effects in people with lung disease, EPA Br. 69-70, but was to dismiss it without offering any scientific grounds for disagreeing with CASAC or any acknowledgment that this has consistently been EPA's own conclusion.

EPA tries (at 70) to obfuscate the significance of its irrational conclusion on adverse effects by claiming that it based its decision on reducing "population-level" risks. But EPA concluded that the 0.070 ppm standard was adequate to protect public health in part because it is "below the lowest [ozone] exposure

concentration shown to result in the adverse combination of lung function decrements and respiratory symptoms (*i.e.*, 72 ppb)." 80 FR 65,363/2, JA____. This conclusion that 72 ppb was the lowest concentration with demonstrated adverse effects is only true for healthy adults, and ignores the overwhelming record evidence that asthmatics and other sensitive individuals are likely to suffer adverse effects at lower concentrations. EPA must set standards at a level at which there is an absence—not just a reduction—of adverse effects in sensitive individuals. *See supra* pp.4-9.

EPA's lawyers' claims (at 70-71) that the agency does not have a bright-line test for determining adversity and that it has looked at other levels of decrements in assessing adversity are false and misleading. Here, EPA newly and arbitrarily followed an approach whereby evidence of a 10% or greater lung function impact in healthy adults in chamber studies is no longer evidence of adverse effects in asthmatics and other sensitive individuals without evidence of other symptoms in healthy adults. In 2008, EPA said chamber studies showing 10% decrement in healthy test subjects were evidence of adverse effects in asthmatics. *See* 73 FR 16,454/3-55/1, JA____-__; *Mississippi*, 744 F.3d at 1349 (citing same). Here, EPA is saying, with no scientific explanation, that it will not rely on such evidence to demonstrate adversity in asthmatics. Since this new, arbitrary test for judging

chamber studies was a foundation of EPA's rejection of a more protective standard, that rejection was arbitrary and capricious.

II. THE SECONDARY STANDARD FAILS TO PROVIDE REQUISITE PROTECTION FOR PUBLIC WELFARE.

EPA's brief confirms that EPA reverse-engineered the secondary standard to match the primary, rather than specifying a level that actually protects against any known or anticipated adverse welfare effects, as the Act requires.

A. EPA's Decision on the Level of Air Quality Requisite to Protect Against Ozone Harms to Plants and Ecosystems Was Illegal and Arbitrary.

CASAC's 2% Target: Contrary to EPA's claim (at 80), CASAC did not propose a "range" of standards to protect against tree growth loss: It recommended a 7 ppm-hours standard for this purpose, finding that 7 ppm-hours "is the only level analyzed for which the relative biomass loss for the median tree species is less than or equal to 2%"—a percentage CASAC found was "an appropriate scientifically based value to consider as a benchmark of adverse impact." CASAC Letter 14, JA____; *see also* Dkt-0189 at 6 (finding "2% relative biomass loss per year is an appropriate criterion for adverse effect"), JA____; PA 6-10 (referring to CASAC's "2%…benchmark[] for tree seedlings"), JA____. CASAC recommended levels above 7 ppm-hours for protection against other effects, such as leaf and crop damage. Health/Environmental Br. 41-42. Because EPA focused

entirely on protecting against growth loss, 7 ppm-hours was the relevant level. *See id.* 42.

Contrary to EPA's claim (at 80), CASAC clearly justified its 2% growth-loss target based on the cumulative effect of such losses over multiple years, and relying also on the expert judgment of leading scientists from a 1996 Consensus Workshop. Health/Environmental Br. 44. EPA suggests (at 80-81) that the workshop findings were not adequately explained, but EPA itself has said those findings are probative, noting they were based on "the potential for compounding effects over multiple years." 75 FR 2938, 3011/1 (2010), JA____. Indeed, EPA went on to say that "[w]hile it would always be more useful to have documentation of the reasoning and basis for an expert's advice, in this case the Administrator judges that the 1996 Consensus Workshop recommendations should be given substantial weight." *Id.* 3025/2 (emphasis added), JA____.

Moreover, EPA fails to cite an independent scientific basis for using a 6% growth-loss benchmark instead of 2%. CASAC deemed 6% "unacceptable" only by highlighting its severity relative to the 2% benchmark. CASAC Letter 14 ("We do not consider a value of 17 ppm-hrs…because even though only 5 of 12 tree species are estimated to have relative biomass loss of 2 percent or less at this level, the median species has relative biomass loss of 6.0 percent, which is unacceptably high"), JA____. It was arbitrary for EPA to reject CASAC's 2% growth-loss

benchmark as inadequately explained, while accepting a 6% growth-loss level that lacked any separate scientific basis at all. *See Gen. Chem. Corp. v. United States*, 817 F.2d 844, 846 (D.C. Cir. 1987) ("internally inconsistent" action held arbitrary).

EPA's Alteration of CASAC's Analysis: EPA's brief confirms (at 82-83) that EPA unilaterally changed CASAC's recommendation by excluding cottonwood data from the growth-loss analysis on which CASAC relied, thereby raising to 19 ppm-hours (up from 15 ppm-hours) the ozone level at which 6% growth loss would occur in the median species. CASAC did not support such an approach, as EPA wrongly claims (at 81-82). It expressly based its recommendations on a table of median growth-loss figures for 12 species that included cottonwood. Health/Environmental Br. 43-44 & n.6. Accepting EPA's position requires implausibly concluding that this committee of eminent scientists somehow overlooked that the table they relied on for their core recommendation included a tree species they thought should be excluded. *See id.* 43-44.

Averaging out Damaging Annual Levels: Contrary to EPA's claims (at 83-84), CASAC found that a 1-year cumulative standard was warranted by science, not policy. CASAC endorsed the 1-year benchmark because "[t]he scientific analyses considered in this review, and the evidence upon which they are based, are from single-year results." CASAC Letter 13 (emphasis added), JA____. EPA cites (at 84) various factors it allegedly considered (*e.g.*, that ozone effects can

vary year-to-year), but fails to explain why any of them justify allowing single-year exposures EPA agrees are "unacceptably high."

EPA is also wrong in claiming (at 84-85) that CASAC agreed EPA had policy discretion to adopt its 3-year average benchmark. CASAC said only that "[i]f, as a policy matter, the Administrator prefers to base the secondary standard on a three-year averaging period…then the level of the standard should be revised downward such that the level for the highest three-month summation in any given year of the three-year period would not exceed the scientifically recommended range of 7 ppm-hrs to 15 ppm-hrs." CASAC Letter at iii-iv (emphasis added), JA____-__. EPA wrongly asserts (at 85) that it "gave effect" to this recommendation merely by picking a 3-year average benchmark of 17 ppm-hours, which was "somewhat below" the 19 ppm-hours level that EPA said was associated with a 6% annual growth loss. Even assuming 6% growth loss was the requisite target, a 3-year average of 17 ppm-hours plainly does not prevent exceedance of 19 ppm-hours "in any given year," as CASAC called for.

Indeed, as Petitioners pointed out (at 46-47), numerous parks and wilderness areas—the very places EPA says the welfare standard must focus on protecting—have repeatedly met a 3-year average of 17 ppm-hours while recording individual years above 19 ppm-hours. Contrary to EPA's assertion (at 85), Petitioners' Comments (at 197-99 & Exh.15, JA____-__, ____-__) plainly argued and

documented that a 3-year average standard did not prevent damaging single-year levels exceeding 19 ppm-hours. EPA's assertion (at 85) that the standard is 0.070 ppm, not 17 ppm-hours, is disingenuous: EPA set the welfare standard at 0.070 ppm (8-hour average) solely because of the alleged association of that standard with achieving a 3-year average 17 ppm-hours benchmark. *See* EPA Br. 74. Regardless, numerous parks and wilderness areas Petitioners identified in fact met an 8-hour standard of 0.070 ppm while recording single-year W126 values above 19 ppm-hours—sometimes in multiple 3-year periods: Chiricahua (19.8 ppm-hours single-year while meeting 0.070 ppm 8-hour standard); Grand Canyon (21.7-0.070); Superstition (19.6-0.070); Saguaro (20.2-0.069); Maroon Bells (23-0.070); Mesa Verde (22.0-0.070; 22.0-0.069; 22.0 & 19.5-0.069; 19.5-0.067; 19.5-0.068, 21.2-0.070); Wind Cave (20.5-0.070); Canyonlands (21.1 & 23.6-0.070); Zion (19.8-0.070 (twice)); and Weminuche (20.8-0.070). Dkt-4249, JA____-__.

B. EPA Illegally and Arbitrarily Refused to Adopt a Separate Standard to Protect Against Ozone Harms to Plants and Ecosystems.

EPA fails to identify any sound scientific reason for rejecting CASAC's repeated calls for a separate cumulative seasonal standard to protect vegetation against ozone damage. Far from finding this metric ill-suited for use as a standard, as EPA's lawyers wrongly imply (at 91-92), EPA, CASAC, and the National Park Service all agree it is the most biologically relevant way to relate ozone levels to

the harms of concern. Health/Environmental Br. 48. EPA failed to provide any reason relevant to the statute for rejecting the recommended cumulative metric.

EPA cites (at 94) data showing that in certain years, most (but not all) sites that met a 0.070 ppm 8-hour standard also met a weak form and level for the W126 standard (*i.e.*, a 3-year average of 17 ppm-hours). At best, this data shows the past happenstance of 0.070 ppm levels coinciding with W126 values at or below 17 ppm-hours. It does not show any direct relationship between the two metrics, and, indeed, EPA concedes they are not equivalent. EPA Br. 94-95 (EPA has "never claimed equivalency" in protection from the two metrics). Nor does EPA's comparison show that measures to reduce pollution levels that exceed 0.070 ppm down to that 8-hour level will also reduce W126 levels to 17 ppm-hours. Indeed, EPA offers no answer to CASAC's specific finding that measures to meet an 8-hour standard will not necessarily produce compliance with a cumulative standard. CASAC Letter 11-12, JA____-__.

EPA also fails to refute its own data cited by Petitioners (at 49) showing 3-year W126 averages higher than 17 ppm-hours during periods when a 0.070 ppm 8-hour level was met at Grand Canyon, Canyonlands, Mesa Verde, and Zion National Parks, and Maroon Bells-Snowmass and Weminuche wilderness areas. Contrary to EPA's assertion (at 95), commenters clearly noted that a number of national parks (including several cited above) had shown elevated cumulative

levels even while meeting a 0.070 ppm 8-hour standard. Comments 195-99, JA____-__.[5] EPA's lawyers allege that the 8-hour values cited by Petitioners (which come from EPA's own table) are unsound because they were calculated using the 2008 rules, but this rationale is impermissibly *post hoc*, as EPA itself never made such a claim. In any event, even the "Wells" data the lawyers say should be used also shows that four of the six parks and wilderness areas cited exceeded a 17 ppm-hours 3-year average, and the fifth reached 17 ppm-hours, while meeting a 0.070 ppm 8-hour standard. *Compare* Dkt-4249, JA____-__, *with* Dkt-4325 attach.std70 (monitors 040058001, 040170119, 080671004, 080830101, and 490530130), JA____-__.

Nor did EPA even attempt to show that a 0.070 ppm 8-hour standard would prevent annual cumulative levels well above the agency's 17 ppm-hours benchmark. Again, Petitioners cited (at 50) EPA's own data showing multiple parks and wilderness areas where annual W126 levels exceeded 17 ppm-hours and even 19 ppm-hours while meeting an 8-hour standard of 0.070 ppm. EPA's lawyers again impermissibly question, *post hoc*, the 8-hour values in EPA's own table that Petitioners used for these comparisons, but even using the Wells 8-hour

[5] EPA never claimed this comment was in error despite calculating the underlying data itself, *see* PA app.2B at 2B-1, JA____. EPA itself relied on the same data, and said the "Wells" data (which the lawyers say (at 95) Petitioners should have used) "are similar to" the analyses on which the comment relied. RTC 273, JA____.

values, the results are unchanged in almost all cases.[6] Notably, EPA does not claim otherwise.

C. EPA Illegally and Arbitrarily Failed to Identify the Level of Air Quality Requisite to Protect Against Adverse Effects From Visible Leaf Damage.

Contrary to its lawyers' assertion (at 87-88), EPA never claimed tree growth loss was a "surrogate" for visible leaf damage. Rather, EPA expressly stated that its chosen welfare protection target of 17 ppm-hours was "not based on specific consideration of" leaf damage. 80 FR 65,408/1 (emphasis added), JA____. Further, EPA never said there were "too many uncertainties," EPA Br. 87, to base a standard on leaf injury. It alleged only "challenges" and "uncertainties" of the same sort this Court has previously rejected as excuses for EPA's failure to specify requisite levels of welfare protection. *Compare id.* (citing, *e.g.*, "challenges" in deciding on "what amount of leaf injury was adverse," and in "predict[ing] the severity and extent of leaf injury under various air quality conditions"), *with Mississippi*, 744 F.3d at 1360 (EPA claimed "significant uncertainties" in quantifying ozone risk to vegetation and determining degree of protection from different cumulative standards), *and Am. Farm Bureau Fed'n v. EPA*, 559 F.3d

[6] *Compare* Dkt-4249, JA____-__, *with* Dkt-4325 attach.std70 (monitors 040058001, 040170119, 040190021, 080830101, 490370101, 490530130, 460330132, 040038001, 040139702, and 080671004), JA____-__.

512, 529-30 (D.C. Cir. 2009) (EPA claimed evidence of visibility impacts was "uncertain" because "studies could not identify the precise level…at which there is an adverse effect").

Petitioners do not contend a separate standard is required for each welfare effect, as EPA wrongly implies (at 88), but EPA must by law "specify a level" that is sufficient to protect against "any known or anticipated" adverse welfare effects. 42 U.S.C. § 7409(b)(2) (emphasis added). EPA, its staff, and CASAC have repeatedly found that visible leaf damage is an "adverse" welfare effect of ozone. *See, e.g.*, 75 FR 3003/2-3 ("[t]he presence of visible symptoms due to [ozone] exposures can…by itself, represent an adverse impact to the public welfare" (emphasis added)), JA____; *id.* 3014/2 (an expanded body of evidence "demonstrate[s] adverse levels of [ozone]-induced…incidence of visible foliar injury"), JA____; 73 FR 16,496/2 (citing "visible foliar injury" as an ozone-induced adverse effect), JA____; CASAC Letter 15 (basing recommendations on "the breadth of adverse welfare effects for ecosystem services, foliar injury, and crop loss" (emphasis added)), JA____. That EPA once referred to leaf damage as "potentially" adverse, EPA Br. 88, hardly negates its repeated findings that leaf damage is an adverse welfare effect of ozone. At most, it emphasizes the need for EPA to specify the level at which effects are, or may become, adverse.

EPA's final action made no claim that specifying a level was impossible, nor could it. In addition to CASAC's advice (which, contrary to EPA's assertion (at 89), was based on science, not policy, CASAC Letter 14, JA____), EPA had before it significant professional advice that EPA's brief completely ignores, including the Consensus Workshop's recommendation of a 5-9 ppm-hours level for leaf protection and the National Park Service's comments and 2011 guidelines, cited at Health/Environmental Br. 55-56, specifying W126 levels to protect against leaf damage. These authorities refute EPA's claim (at 87) that it "lacked criteria" on which to base a level of protection against leaf damage.

III. EPA UNLAWFULLY WAIVED PERMITTING REQUIREMENTS DESIGNED TO PREVENT VIOLATIONS OF THE NEW STANDARDS.

EPA is unable (at 130-38) to identify any ambiguity in the Act's prohibition against commencing construction of a new or modified major source of air pollution without first demonstrating that the source "will not cause, or contribute to, air pollution in excess of any" standard, including the new ozone standards, 42 U.S.C. § 7475(a)(3). Nor has EPA pointed to any authority in the Act that would allow the agency to waive this prohibition for certain sources. *See* Health/Environmental Br. 57-62. Thus, EPA's grandfathering waiver is unlawful.

Rather than offer a textual argument, EPA first suggests (at 130-31) the statute is ambiguous because "nothing in the Act expressly precludes EPA…from

issuing" grandfathering regulations to waive the statutory provision. That argument is specious. "To suggest…that *Chevron* step two is implicated any time a statute does not expressly negate the existence of a claimed administrative power…, is both flatly unfaithful to the principles of administrative law…and refuted by precedent." *Ry. Labor Execs.' Ass'n v. Nat'l Mediation Bd.*, 29 F.3d 655, 671 (D.C. Cir. 1994) (*en banc*) (emphasis in original); *accord, e.g.*, *Am. Petroleum Inst. v. EPA*, 52 F.3d 1113, 1120 (D.C. Cir. 1995) ("[W]e will not presume a delegation of power based solely on the fact that there is not an express withholding of such power.").

EPA further seeks (at 131-32) to avoid the plain text of § 7475(a)(3)(B) by claiming there is "friction" between that provision's prohibition and permit-issuers' obligation in § 7475(c) to grant or deny a completed "prevention of significant deterioration" ("PSD") permit application within one year. EPA's assertion (at 132) that complying with § 7475(a)(3)(B) for the 2015 standards "could hinder compliance with" § 7475(c) fails because there is no obligation under § 7475(c) to approve a permit at all. *See* Health/Environmental Br. 59. The fact that EPA can comply with § 7475(c) without approving a permit is not evidence of ambiguity. *Cf.* EPA Br. 132. EPA's "friction" is based on a false assumption that the Act requires approval when the plain language says otherwise. 42 U.S.C. § 7475(c); *see Am. Corn Growers Ass'n v. EPA*, 291 F.3d 1, 12 (D.C.

Cir. 2002) ("[N]othing in the [Clean Air Act] provides for issuance of a PSD permit as a matter of right.").

Moreover, EPA's claim of potential delays lacks record documentation. As the new standards' form is the same as the previous standards', EPA has failed to explain why a source that modeled its impact on ozone levels for the old standards would need to do any different modeling for the new. Nor could sources reasonably rely on the ozone standards' remaining unchanged, for standard review/revision is required every five years. *Treasure State Resource Indus. Ass'n v. EPA*, 805 F.3d 300, 306 (D.C. Cir. 2015).

Also meritless is EPA's insinuation (at 132) that § 7475(a)(3)(B)'s plain text does not control because EPA must review standards regularly. Congress barred construction of major sources "unless" they show they "will not cause, or contribute to, air pollution in excess of any" standard. 42 U.S.C. § 7475(a)(3) (emphasis added). In the Act, "any" means "any." *E.g.*, *NRDC v. EPA*, 489 F.3d 1250, 1259-60 (D.C. Cir. 2007). Congress need not use unnecessary words to make itself clear. *New York v. EPA*, 443 F.3d 880, 887 (D.C. Cir. 2006). Any prior grandfathering EPA allowed is irrelevant, *contra* EPA Br. 132-33. As this Court has explained, "previous statutory violations cannot excuse the one now before the court." *New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008).

Nor does *Citizens to Save Spencer County v. EPA*, 600 F.2d 844 (D.C. Cir. 1979), relied on by EPA (at 133), support EPA's claim that its general rulemaking authority authorizes it to waive permitting requirements here. That case addresses the transition following adoption of the 1977 statutory PSD program, where it was "indisputable that…one section allows what…[an]other prohibits." *Citizens to Save Spencer Cty.*, 600 F.2d at 862. The Court cited EPA's authority under § 7601 to adopt rules where "clearly 'necessary'…to resolve the conflict between sections [7475] and [7478]." *Id.* 873. Because there is no statutory conflict here, the case is inapposite. *See* Health/Environmental Br. 58-59.

Even if the statute were somehow ambiguous, EPA's resolution of that ambiguity does not "balance" competing objectives, but instead impermissibly nullifies § 7475(a)(3) for certain sources, *see Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 485 (2001) (under *Chevron* step 2, "EPA may not construe the statute in a way that completely nullifies textually applicable provisions meant to limit its discretion"). EPA cannot and does not give any explanation for how allowing sources to demonstrate compliance only with the 2008 standard that EPA here found inadequate to protect public health, 80 FR 65,342/2-3, 65,343/2, JA____-__, serves "to protect public health and welfare from any actual or potential adverse effect," 42 U.S.C. § 7470(1). Accordingly, EPA's policy arguments (at 135) cannot overcome Congress' clear statutory command. In any event, the statute nowhere

states a goal of "maximiz[ing]" economic growth, as EPA wrongly asserts (at 135). To the contrary, the statute states as one purpose "insur[ing] that economic growth will occur in a manner consistent with preservation of existing clean air resources." 42 U.S.C. § 7470(3) (emphasis added).

EPA finally relies (at 136-37) on legislative history that is inapposite because it addresses only separate, express statutory provisions Congress included in the Act to address its concerns about economic disruption—provisions that do not modify § 7475(a)(3). *See* Health/Environmental Br. 58 (citing 42 U.S.C. § 7478(b)). Even so, EPA has no answer to the point that grandfathering would increase the economic disruptions Congress actually highlighted because it would allow new sources to create violations, then require them (or other sources) to install less cost-effective controls. *See* Health/Environmental Br. 60-61; H.R. Rep. No. 94-1175, at 114 (1976) ("it is substantially less expensive to prevent air pollution problems—and health problems—before they develop than it is to abate dangerous pollution levels."); *see also Sierra Club v. EPA*, 705 F.3d 458, 465 (D.C. Cir. 2013) ("[R]elying on permitting authorities to address violations, rather than to prevent violations by requiring demonstration that a proposed source or modification will not cause a violation, conflicts with th[e] statutory command [of § 7475(a)(3)].").

CONCLUSION

EPA insists that, stuck between competing petitioners, it found a middle-ground, Solomonic compromise. *See, e.g.*, EPA Br. 4-6, 36. But splitting the baby doesn't make a rational decision, especially when the health and welfare of the baby is what matters. *See* 1 *Kings* 3:16-28 (Judgment of Solomon). Indeed, the purpose of ambient air quality standards is to protect health and welfare.

For the foregoing reasons and those given in the Health/Environmental Opening Brief, the Court should grant the relief sought in that brief.

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Respectfully submitted,

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CERTIFICATE REGARDING WORD LIMITATION

Counsel hereby certifies, in accordance with Federal Rule of Appellate Procedure 32(a)(7)(C), that the foregoing **Proof Reply Brief of Public Health and Environmental Petitioners** contains 6,976 words, as counted by counsel's word processing system, and thus complies with the applicable word limit established by the Court.

DATED: September 14, 2016

/s/Seth L. Johnson
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CERTIFICATE OF SERVICE

I hereby certify that on this 14th day of September, 2016, I have served the foregoing **Proof Reply Brief of Public Health and Environmental Petitioners** on all registered counsel through the Court's electronic filing system (ECF).

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