

concludes that, much like the qualitative evidence on direct adverse effects potentially associated with long-term inhalation exposures, the newly considered available evidence on potential indirect beneficial effects is not well enough understood at this time to serve as the basis for establishing a less restrictive 8-hour standard than was promulgated in 1997. Rather, EPA believes that the most recent evidence and credible analyses of potential long-term, indirect beneficial effects should be considered in the next review in conjunction with the most recent information on long-term, direct adverse effects.

D. Final Response To Remand on the Primary O₃ NAAQS

After carefully considering the scientific information available in the record on adverse effects on public health associated with direct inhalation exposures to O₃ in the ambient air and on the potential for indirect benefits to public health associated with the presence of ground-level O₃ and the resultant attenuation of naturally occurring UV-B radiation from the sun, taking into account the weight of that evidence in assessing the net adverse health effects of ground-level O₃, considering comments received on the proposed response, and for the reasons discussed above, the Administrator is now responding to the remand by reaffirming the 8-hour primary O₃ standard promulgated in 1997. In leaving unchanged the 1997 O₃ standard at this time, the Administrator has fully considered the available information in the record of the 1997 O₃ NAAQS review on potential beneficial health effects of ground-level O₃ using the same approach as for her consideration of the adverse respiratory-related effects, as directed by the Court's remand. Based on such consideration, she has determined that the information linking (a) changes in patterns of ground-level O₃ concentrations likely to occur as a result of programs implemented to attain the 1997 O₃ NAAQS to (b) changes in relevant exposures to UV-B radiation of concern to public health is too uncertain at this time to warrant any relaxation in the level of public health protection previously determined to be requisite to protect against the demonstrated direct adverse respiratory effects of exposure to O₃ in the ambient air.⁷⁰ Further, it is the Agency's view that even when using plausible but

highly uncertain assumptions about likely changes in patterns of ground-level ozone concentrations, associated changes in UV-B radiation exposures of concern would likely be very small from a public health perspective.

In the past, the Administrator has been confronted with situations where there has been both quantifiable and unquantifiable evidence, and has moved forward with a NAAQS decision. The inability to quantify all related effects does not preclude the Agency from making a NAAQS decision, particularly in situations where there is strong quantifiable evidence of significant adverse health effects. Moreover, in this case, as noted above, EPA believes that while the potential beneficial effects are not quantifiable at this time, they are likely very small from a public health perspective. Accordingly, the Administrator believes it is inappropriate to wait for additional information on such effects prior to responding to this remand.

In determining now that the 0.08 ppm, 8-hour O₃ standard set in 1997 is requisite to protect public health with an adequate margin of safety, the Administrator is finding that such a standard is both necessary and sufficient. Consideration of the potential beneficial effects of ground-level O₃ did not, of course, call into question whether this standard was sufficient to protect against the adverse respiratory-related effects of O₃ addressed in EPA's 1997 final rule. However, it did raise the question as to whether this standard was still necessary to protect against O₃'s net effects. Having determined that any potential UV-B radiation-related effects associated with this more stringent standard are likely very small from a public health perspective, and having judged that the evidence of any such effects should be weighed no more heavily in a determination of O₃'s net effects than the record evidence on O₃'s potential chronic adverse effects, the Administrator has concluded that O₃'s net adverse effects necessitate a standard no less stringent than the standard set in EPA's 1997 final rule.⁷¹

The 0.08 ppm, 8-hour primary standard is met at an ambient air quality monitoring site when the 3-year average of the annual fourth-highest daily maximum 8-hour average O₃ concentration is less than or equal to 0.08 ppm. Data handling conventions are specified in a new appendix I to 40

CFR part 50, as discussed in the 1996 proposal and 1997 final rule.⁷²

As discussed previously, the Administrator recognizes that relevant information on indirect potentially beneficial health effects of ground-level O₃ (as well as information on direct adverse health effects of ground-level O₃) is now available that was not part of the 1997 rulemaking record. In that regard, she notes that the next periodic review of the O₃ NAAQS is now well underway, having been formally initiated by EPA's Office of Research and Development with a call for information (65 FR 57810; September 26, 2000). To ensure that the current review of the O₃ criteria and standards now underway can be based on a comprehensive and current body of relevant scientific information, EPA continues to encourage the submission of new scientific information on the relationships between ground-level O₃, associated attenuation of UV-B radiation and other indirect effects of the presence of O₃ in the ambient air, and effects on public health such as those associated with changes in relevant exposures to UV-B radiation.

The EPA's ongoing review and revision of the O₃ Criteria Document is addressing a number of issues related to indirect potentially beneficial health effects of ground-level O₃. In particular, available information on the role of ground-level O₃ in attenuating solar UV-B radiation is being considered. Attention will be focused on the gaps in information, identified above in section II.B.2, that precluded the development of area-specific quantitative assessments of potential beneficial effects of ground-level O₃. For example, the review is considering the available information related to understanding relevant spatial and temporal patterns in changes in ground-level O₃, and associated spatial and temporal patterns in changes in solar UV-B radiation flux. The review will also consider available information on changes in human exposure to solar UV-B radiation as mediated by changes in ground-level O₃, including information related to characterizing how UV-B radiation exposures of sensitive populations may be affected by human activity patterns and variable sun-seeking and sun-avoidance behaviors. In addition, available information on the nature of health

⁷⁰ As noted above, the D.C. Circuit has already upheld EPA's determination that the 0.08 ppm 8-hour O₃ NAAQS was requisite to protect against adverse respiratory effects. See *ATA III*, 283 F.3d at 379.

⁷¹ In so doing, EPA is applying the same decision making standard as it applied in its 1997 final rule, based on the plain meaning of the word "requisite," consistent with the U.S. Supreme Court's decision in *Whitman*, 121 S. Ct. at 911–12, 914.

⁷² Subsequent to the 1997 final rule, EPA has promulgated further revisions to 40 CFR part 50 with regard to the applicability of the 1-hour O₃ standards (65 FR 45182; July 20, 2000). In addition, EPA notes that recent legislation addresses the timing of future actions on nonattainment designations with regard to the 8-hour O₃ standards (Pub. L. 106–377, 114 Stat. 1441 (2000)).