

Mr. George Allen Preliminary Review Comments on Ozone Network Design Issues

Urban Network Design Requirements

1. *Considering the ozone minimum monitoring requirements that are already promulgated through 40 CFR Part 58, is the considered change to these requirements sufficient to ensure a minimally adequate network in urban areas?*

Yes, these changes should result in an urban network that is “minimally adequate”. Most urban areas are “ozone holes” due to NO scavenging; exceptions to this are very large urban areas such as NYC and LA.

2. *We are considering a timeline that would require newly required ozone monitors to be operational no later than January 1, 2011, based on the expectation that final rulemaking will be completed in 2009. Is this schedule appropriate or should EPA consider providing an additional year for new monitors to be deployed (or relocated)? What would be the advantages or disadvantages of a staggered deployment schedule?*

While it is desirable to deploy network changes sooner than later, State, Local and Tribal Air Agencies (“SLT”) are presently under substantial pressure to meet other required new monitoring such as NCore. At the same time, these agencies are under severe budgetary constraints that effect staffing levels, and this is expected to continue for the near future. To the extent that it does not adversely impact compliance designation, a staggered deployment schedule that extends the period for another year would probably be helpful to air agencies.

Non-Urban Network Design Requirements

1. *We are considering a new requirement that each State operate a minimum of three non-urban ozone monitors to meet certain objectives (described above). Considering the stated objectives of the non-urban ozone monitoring requirements, is three required monitors per state sufficient?*

Specifying this on a per state basis may not be the best way. Three may be excessive for RI and insufficient for TX. There are additional variables that could drive this need on a regional basis such as regional transport, transport over large bodies of water (allowing formation without sinks), etc. In general, for a pollutant like ozone that is often regionally transported, requiring any component of network siting design on a state by state basis may not be the best approach. A design that is relatively ignorant of state boundaries may be better.

2. *What factors should be considered in the siting of ozone monitors to assess impacts on ozone sensitive vegetation in national parks, wilderness areas, and other ecosystems?*

Site elevation and over-water transport are two factors that may need to be considered. Distance downwind from major precursor sources could be another.

3. *In addition to the objectives that have been described for non-urban ozone monitors, what other objectives should be considered in the final network design? How would the consideration of additional objectives, if any, effect the minimum number of non-urban required monitors?*

In these resource constrained times, a careful balance between meeting network objectives and the resources required to implement additional monitoring must be met.

4. *Current ozone monitoring regulations (described in Appendix E of 40 CFR part 58) include requirements for station and probe siting (e.g., vertical distance of inlets, set-back distances from roadways). Are these requirements (that have been developed for urban monitors) appropriate for non-urban ozone monitors? What changes, if any, should be considered?*

Setbacks from roadways or other local sources that may impact measured ozone may need to be increased, since non-urban ozone sites are presumably regional in spatial scale.

5. *We believe that States should have the option of designating that existing non-urban ozone monitors that are potentially operated by another agency (e.g., CASTNET monitors operated by the National Park Service) be utilized for meeting certain non-urban minimum monitoring requirements. What factors should States use to determine if such monitors are appropriate to include in their networks?*

Any existing or future “third party” ozone sites should meet all siting and operational QC requirements required of SLT sites if data from those sites is going into AQS and would be used for meeting required network design goals and NAAQS compliance purposes.

Ozone Monitoring Season

1. *We are considering changes to the required ozone monitoring seasons based on analyses of the patterns of ozone exceedances and occurrences of the Moderate level of the Air Quality Index, during periods outside of the currently required seasons. What other factors should be considered, if any, in the determination of the length of the required monitoring season for each State?*

First, for something like the 50 largest cities, or perhaps locations of the 54 core STN sites, ozone should be measured year round for use in health effect studies. NCore will presumably provide this. For other sites, it may be difficult to determine an appropriate season from existing data if there are no year-round or extended season site data presently available that represent a given area. In these cases, an analysis of several year’s worth of start and end ozone season months’ data is the best that can be done; if there is a reasonable chance of an exceedance occurring outside of the current season, then the required monitoring season should be extended by at least one month. In the northeast US for example, it is clear that April needs to be included in the revised season. April has substantial solar radiation, and “leaf-out” does not occur until early May. These and perhaps other factors contribute to high observed ozone levels during that month from the limited year-round network currently in place. It is less likely that October needs to be included for this northeast example, since solar radiation is substantially less than in April.

2. *We believe that ozone monitors that are located at NCore stations should be operated on a year-round monitoring schedule. Under what circumstances might it be appropriate to require year-round monitoring at other stations beside NCore?*

It might be informative for certain sites such as high-elevation transport locations to run year-round. Stratospheric intrusion can occur, and there is a level of ozone present that is of interest (from a non-compliance perspective) even in the winter. Another possible need for year-round monitoring might be the situation observed in Wyoming’s Green River Basin, where there are intensive natural gas wells in valley locations. It appears that the reported winter ozone is real and not an interference with the UV monitoring method; situations like these have the potential for increasing our understanding of ozone formation in non-traditional scenarios like this with cold temperatures and decreased incoming solar radiation.

3. *We are considering that changes to the required ozone monitoring season be applicable to existing monitors beginning in 2010, one year ahead of the deployment schedule for newly required ozone monitors. Is this schedule reasonable for existing monitors?*

Yes it is reasonable. For existing monitors, extending the season by a month or two does not have a large impact on SLT agency resources.