General comments

The review summary fails to capture the critical tenor of my comments. There is a welcome call for a probabilistic analysis of the many component distributions in the methodology and reevaluation of the choices of single-value parameters to represent individual components. However the current document retains the existing single-value parameter choices made previously without making any such probabilistic analysis. Therefore there can be no confidence that the current RTR methodology represents a known, let alone an appropriate proxy for the results of applying a more sophisticated analyses that might ultimately be needed to understand just how protective the RTR guidance is likely to be, and what residual risks can be expected.

I think EPA should change its fundamental approach of doing this kind of analysis. Currently the practice is to pick a series of what are intended to be "conservative" values for multiple parameters and imagine that the combined result will be an analysis system that represents and appropriately "conservative" set of prescriptions to protect public health. Without a probabilistic analysis, however I think there is no one on the green earth who can reasonably integrate in his/her head the combined effects of three or more uncertainty distributions. This must be done in a full formal probabilistic analysis representing the uncertainty distributions for each parameter and then "run" to assess the combined uncertainty in all appreciably uncertain parameters. I think a final RTR system should therefore await a detailed probabilistic analysis and be calibrated to achieve specific risk levels or better (less) with a defined degree of confidence.

More detailed comments on specific sections of the document.

Charge Question #1 (Three-tiered approach.)

Similar to my general comments, the current three-tiered approach fails to reflect any probabilistic analysis of the many distributions of risk-related. EPA has not analyzed what the uncertainty distributions of the many uncertain parameters in the models are likely to be, or what the overall uncertainty of the model outputs are likely to be. How far can be expect the overall estimates to be from an overall "expected value" (arithmetic mean), and how far from an overall 95th percentile of the combined uncertainty distribution for the risks to be protected against? I agree, in general, that case-study analyses should be done to address these issues, but they must have an integrated probabilistic character. 10 such case studies, done in parallel, should be sufficient to allow EPA to judge how often specific characterizations from the 3-tiered modeling approach will yield results that appropriately reflect the degree of "conservatism" it wishes to achieve in specific contexts. I therefore agree with the draft panel comment that such "ground-truthing" with specific case studies will be an important step toward the design of an RTR system that will perform as intended.

Charge Question #2 (Risk Equivalency Method.)

I agree with the overall stated conclusion in this part of the report:

"this read across extrapolation of environmental fate could benefit 24 substantially from an alternative approach and has identified two options for improving 25 the EEF estimate as follows: 26
• Conduct further statistical evaluation of the relationship between Kow and LADD 27 to yield an upper bound on the regression slope and then apply this to derive EEFs 28 for data poor chemicals; 29
• Conduct further evaluation of the underlying fate and transport parameters to 30 develop distributions for each influential parameter and then perform a 31 probabilistic analysis that replaces the Fig 3.2 regression slope; EPA can then 32 make a transparent choice of which percentile of the distribution of LADDs for a 33 given Kow (and/or additional parameters) will be used in evaluating exposure and 34 risk for data poor POMs. "

"The SAB also finds that the current documentation of key parameter inputs to this fate, 36 transport and bioaccumulation model for PB-HAPs is not adequately described. The 37 range of potential values and key citations should be presented in an appendix for all of 38 the modeled PB-HAPs. The document states that the EEF will change based upon 39 environmental and geospatial conditions (e.g., Page 19, paragraph 1) but examples of this 40 dynamic relationship are not provided, which further precludes a full review. For 41 example, how are the effects of age/weathering incorporated to account for the loss of 42 lighter dioxin congeners over time or with distance? "

I would signal the EPA analysts even more strongly, as I did in my own summary comments on this charge question:

"**This basic methodology—multiplying supposedly "conservative" values of several uncertain factors—is profoundly deficient. EPA has used this in the past many times, but it is high time EPA should routinely do probabilistic analyses combining the effects of distributions of multiple uncertain factors into a coherent analysis from which arithmetic means and specific "conservative" fractiles could be derived. Anything less is simply not sustainable as a modern analysis.**

Moreover, The document in its present form does not even appear to provide reviewers or the public with the actual single-point allegedly conservative values chosen for these parameters in the screening analyses. Without these values and the distributions they come from, no evaluation of whether the set of values "adequately accounts" for differences in environmental fate and transport among the different chemicals is possible."

Charge Question #3 (Fishing, lake, and pond assumptions.)

I agree with the general conclusory statement, “The SAB encourages the EPA to consider other data available to make more realistic assumptions such using as the most recent NHANES data to estimate fish consumption. Additionally, the EPA could refine the assumptions on chemical runoff and erosion from the watershed by using relevant USGS data that is available for the region in interest. This approach would result in a more balanced approach for tiers 2 and 3, since there are refinements in air modeling at these tiers.”

Charge Question #4 (Lake data, plume rise, and meteorology assumptions.)

I agree with the draft panel comments on this charge question.

Charge Question #5 (Inclusion of the gardener scenario.)

I agree with the draft panel comments on this charge question.

Charge Question #6 (Environmental risk screening methodology.)

I agree with the draft panel comments on this charge question.

Charge Question #7 (Enhancements of inhalation risk estimates.)

I agree with the draft panel comments on this charge question.

Charge Question #8 (Census block receptor check tool.)

I agree with the draft panel comments on this charge question.