

Sent Via E-Mail

November 15, 2010

Angela Nugent, Ph.D.  
Designated Federal Officer (DFO)  
EPA Science Advisory Board (1400F)  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

**Re: Comments for the November 22 SAB Review of the SAB Workgroup's "Review Comments on EPA's Responsiveness to SAB 2007 Recommendations for the Revision of Cancer Assessment of Inorganic Arsenic"**

Dear Dr. Nugent:

The following comments are submitted on behalf of the undersigned organizations, which are deeply concerned with the controversy and uncertainty surrounding EPA's draft cancer hazard assessment of inorganic arsenic for IRIS. Given the crucial importance and influence of the imposition of an oral cancer slope factor (CSF) on a naturally-occurring and ubiquitous chemical like arsenic for regulatory programs at EPA, other federal regulatory agencies, and state environmental agencies, it is imperative that EPA get the science right and is responsive to the recommendations made by its Scientific Advisory Board (SAB). The SAB is a highly respected group of subject matter experts and is the primary means for outside peer-review of EPA's draft assessment.

As the 2010 SAB Workgroup for the Arsenic Cancer Review pointed out in its revised draft October 25 report to EPA Administrator Lisa Jackson, "The SAB was not asked to conduct a full peer review of the assessment, including EPA's calculation of the cancer risk estimate." Furthermore, as discussed more fully below, we believe the record indicates numerous instances where EPA has either ignored the SAB's clear recommendations or has implemented them inadequately.<sup>1</sup> This situation has put the SAB in an unfortunate position where it is being asked by EPA to approve an assessment that the Agency has failed to adequately revise in response to the SAB's scientific recommendations. Given this result, the undersigned groups request that the SAB not approve the Workgroup's draft October 2010 report or EPA's draft cancer assessment for IRIS.

Should EPA respond fully to the 2010 SAB Workgroup's comments, the draft arsenic hazard assessment would be a substantially revised document. Unfortunately, based on past experience there is little evidence the Agency will revise the document sufficiently in response to the Workgroup's comments. We believe the history of EPA ignoring the SAB is one of the chief reasons why there is so much concern and uncertainty surrounding EPA's proposed cancer potency value for inorganic arsenic. Below are some examples where EPA either ignored or failed to respond adequately to recommendations by the SAB regarding key technical deficiencies in its draft hazard assessment:

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<sup>1</sup> "The SAB finds that the agency was partially responsive to the previous recommendations." (From the cover letter to the SAB Workgroup's "Review Comments on EPA's Responsiveness to SAB 2007 Recommendations for the Revision of Cancer Assessment of Inorganic Arsenic").

1. **Improve transparency and scientific rationale for exposure factors used in dose-response modeling for arsenic.** Although EPA revised its assessment in response to 2007 SAB comments regarding its dose-response modeling, the 2010 Workgroup noted a number of aspects of the modeling sensitivity analysis that should be described in greater detail, including more detailed description of the Taiwanese datasets used in developing the risk model; a better description of the distribution of well water arsenic concentrations across and within the 42 exposed villages; and further explanation of the sensitivity displayed for female bladder cancer risks.
2. **Perform non-linear dose-response modeling without the use of an outside comparison population.** The 2007 SAB report to EPA was clear that the Agency should explore non-linear models, but left many of the important details on how to do it to EPA. The Agency used non-linear models to estimate cancer potency but restricted the analysis to a set of assumptions, including use of an outside comparison population that limited its ability to estimate risk at the low arsenic exposure levels representative of the U.S. On page 143 in EPA's 2010 revised draft assessment, the Agency notes that the use of non-linear models "predict risks that increase more or less rapidly in the extremes than the linear additive Poisson regression" model used by EPA. This statement indicates that at the low dose range the non-linear models predict different risks for arsenic than the linear models for the same exposure level. Non-linear modeling is also consistent with the fact that all of the reported carcinogenic modes-of-action (MOA) for inorganic arsenic in the peer-reviewed literature are consistent with a non-linear dose-response model.
3. **Use multiplicative terms in its non-linear dose-response modeling.** The 2007 SAB and 2010 Workgroup both recommended EPA quantitatively assess how different key exposure factors in its dose-response modeling (e.g., arsenic drinking water concentration, arsenic dietary intake, etc.) affect the cancer hazard estimate when used in combination and not in isolation as EPA did in its revised 2010 draft assessment.

Since 2007 EPA has either ignored the SAB's clear recommendations regarding deficiencies in its draft arsenic assessment or has implemented them inadequately. This situation has put the SAB in a difficult position where it is being asked by EPA to approve an assessment that the Agency has failed to adequately revise in response to the SAB's recommendations. The undersigned groups request that the SAB not approve the Workgroup's draft October 2010 report or EPA's draft cancer assessment for IRIS.

Respectfully submitted,

American Farm Bureau Federation  
American Petroleum Institute  
Industrial Minerals Association - North America  
Mulch & Soil Council  
National Rural Electric Cooperative Association  
National Stone, Sand, and Gravel Association  
North American Metals Council  
Organic Arsenical Products Task Force  
The Fertilizer Institute  
Treated Wood Council  
USA Rice Federation  
Wood Preservative Science Council