

**Summary Minutes of the  
U.S. Environmental Protection Agency (EPA)  
Science Advisory Board (SAB)  
Lead Review Panel  
Public Meeting  
December 6-7, 2010**

Date and Time: Monday, December 6, 2010, 9:00 AM – 5:30 PM ET; Tuesday, December 7, 2010, 8:30 AM – 12:30 PM

Location: The Madison Hotel, 1177 15th Street, NW, Washington, DC 20005

Purpose: The purpose of the meeting was to peer review two EPA documents: (1) *Approach for Developing Lead Dust Hazard Standards for Residences (November 2010 Draft)*, and (2) *Approach for Developing Lead Dust Hazard Standards for Public and Commercial Buildings (November 2010 Draft)*.

Participants: Lead Review Panel (for full roster, see Attachment A)

Dr. Timothy Buckley, Chair  
Dr. Richard Canfield  
Dr. Scott Clark  
Dr. Kim Dietrich  
Dr. Philip E. Goodrum  
Dr. Sean Hays  
Dr. Andrew Hunt  
Dr. David E. Jacobs  
Dr. Michael A. Jayjock  
Dr. Michael Kosnett  
Dr. Bruce Lanphear  
Dr. Howard Mielke  
Dr. Joel Pounds  
Dr. Michael Rabinowitz  
Dr. Ian von Lindern  
Dr. Michael Weitzman

Mr. Aaron Yeow, Designated Federal Officer (DFO)  
Dr. Vanessa Vu, Director, EPA Science Advisory Board Staff Office  
Dr. Maria Doa, EPA Office of Pollution Prevention and Toxics (OPPT)  
Ms. Cathy Fehrenbacher, EPA OPPT  
Dr. Jennifer Seed, EPA OPPT  
Other Attendees (See Attachment B)

**Monday, December 6, 2010**

## **Opening Remarks**

Mr. Aaron Yeow, the DFO for the SAB Lead Review Panel, opened the meeting. He noted that as required under the Federal Advisory Committee Act (FACA), the Committee's deliberations are held in public with advanced notice given in the Federal Register<sup>1</sup>, and the meeting minutes will be made publicly available after the meeting. He noted that the Panel received two requests from the public to present oral comments, one on the Residential document and one on the Public and Commercial document, and received no written comments from the public. He also noted that the Panel members are all subject to federal ethics regulations and conflict-of-interest laws that pertain to them. He noted that Dr. Buckley was running late and that Dr. Bruce Lanphear would temporarily act as chair until Dr. Buckley arrived. He then turned the meeting over to Dr. Vanessa Vu, the Director of the SAB Staff Office.

Dr. Vanessa Vu welcomed everyone to the public meeting of the SAB Lead Review Panel. She thanked the members of the Panel for their participation in this meeting and for their public service. She stated that she is looking forward to the discussions and deliberations over the next few days. She then turned the meeting over to Dr. Bruce Lanphear.

Dr. Bruce Lanphear, welcomed everyone and indicated that the purpose of the meeting was to review the Agency's technical documents, *Approach for Developing Lead Dust Standards for Residences (November 2010 Draft)*<sup>2</sup> and *Approach for Developing Lead Dust Standards for Commercial and Public Buildings(November 2010 Draft)*<sup>3</sup>. He reviewed the Agenda for the meeting<sup>4</sup>, and introduced Ms. Cathy Fehrenbacher from EPA's Office of Pollution Prevention and Toxics (OPPT) for her presentation.

## **Approach for Developing Lead Dust Standards for Residences**

### *EPA Presentation*

Ms. Cathy Fehrenbacher, OPPT, provided a technical overview<sup>5</sup> of the document, *Proposed Approach for Developing Lead Dust Hazard Standards for Residences*. A Panel member asked EPA to provide background on why they were choosing the National Health and Nutrition Examination Survey (NHANES) Quasi-Likelihood (QL) model. EPA responded that the NHANES QL model provided the best fit of the data. Another Panel member asked EPA whether they considered an incremental risk assessment approach. EPA responded that they did consider it but did not implement it in this approach. One Panel member asked EPA how the standards will be used. EPA responded that the standards will be used to identify lead hazards and as clearance standards in abatements.

### *Public Comment*

Mr. Matthew Watkins, National Association of Home Builders (NAHB) provided an oral statement<sup>6</sup>. Mr. Watkins was representing the views of NAHB and the Window and Door Manufacturers Association (WDMA). He stated that NAHB and WDMA were concerned about

EPA revising the dust hazards. He stated that EPA should balance the uncertainties in the modeling and that EPA should seek balance between practicability and health protection in establishing the standards.

Dr. Lanphear proceeded with asking certain panel members to lead the discussion of responding to the first question of the charge to the Panel<sup>7</sup> for this document.

#### *Charge Question 1 – Overall Approach*

The Panel commended EPA for incorporating NHANES data into the overall approach and for including a comparison between the epidemiologic and biokinetic models. The Panel reiterated prior advice from individual Panel members to consider implementing an incremental risk assessment approach. The Panel did not find that an adequate context was provided for how the standards would be used and recommended that EPA provide this context in the documents. The Panel believes that the clarity and transparency of the document can be improved by adding an executive summary.

Dr. Lanphear then turned the meeting over to Dr. Timothy Buckley, Chair of the SAB Lead Review Panel.

#### *Charge Question 2 – Empirical Modeling*

The Panel supported the Agency's use of the NHANES data, but noted that EPA did not examine lead data below  $5 \mu\text{g}/\text{ft}^2$ . They recommended that EPA look at the full range of data. The Panel agreed that the NHANES QL model provided the best fit of the data and supported its use, but did not agree with EPA's criticisms of the Dixon model. The Panel did not support the dust lead loading to dust lead concentration conversion applied to the NHANES QL model and recommended that EPA revise the NHANES QL model to directly relate dust lead loading to blood lead levels. The Panel recommended that the results from the revised NHANES QL model be compared with the Dixon model and the biokinetic modeling. The Panel also recommended that the results of the empirical modeling be compared with other epidemiological data.

#### *Charge Question 3 – Biokinetic Modeling*

The Panel stated that the incremental risk assessment approach is more beneficial, has less uncertainty, and has more scientific credibility than an absolute blood lead level approach. The Panel recommended that EPA consider implementing such an approach. The Panel noted that the Leggett model was not validated for children, and therefore the IEUBK was preferred over the Leggett for assessing children. It was recommended to move the Leggett results into an appendix. It was recommended that the dust lead loading to dust lead concentration take place in the biokinetic modeling section and not in the empirical modeling section.

#### *Charge Question 4 – Uncertainty and Variability*

The Panel encouraged EPA again to consider using an incremental risk assessment approach, which would considerably reduce uncertainty. The Panel stated that uncertainty also arises from

the dust lead loading to dust lead concentration conversion. There was some question as to what the consequences of this uncertainty would be for decision-making.

#### *Charge Question 5 – Choice of Model*

The Panel concluded that it was premature to choose a model given the Panel's concerns with the empirical and biokinetic modeling. The Panel stated that they would need to see a comparison of the NHANES QL modeling without the dust lead loading to dust lead concentration conversion, the Dixon model, and the IEUBK modeling with default input parameters before making a recommendation. The Panel recommends that EPA consider an incremental risk assessment approach. The Panel agreed that the Leggett model should not be used for this approach.

### **Approach for Developing Lead Dust Standards for Commercial and Public Buildings**

#### *EPA Presentation*

Dr. Jennifer Seed provided a technical overview<sup>8</sup> of EPA's *Approach for Developing Lead Dust Standards for Commercial and Public Buildings (November 2010 Draft)*.

#### *Public Comments*

Mr. Thomas Jackson, Baker Botts LLP, provided an oral statement<sup>9</sup> on behalf of the Real Estate Industry Coalition. Mr. Jackson noted the uncertainty due to the lack of data regarding lead dust exposures in public and commercial buildings. He stated that EPA needs to comply with the congressional mandate to conduct a study of lead exposures in public and commercial buildings. He also noted that EPA needs to take into account the lack of children and the differing exposure scenarios in public and commercial buildings. The Panel asked Mr. Jackson if he or the Real Estate Industry Coalition were aware of any studies showing that lead dust levels in public and commercial buildings differed from lead dust levels in residences. Mr. Jackson stated that he was not aware of any studies.

The Panel proceeded to discuss the charge questions<sup>10</sup> for this document.

#### *Charge Questions 1 and 2 - Overall Approach and Empirical Modeling*

One Panel member stated that there is a lack of data indicating a difference in lead dust exposures between residences and public and commercial buildings. Therefore the assumption that lead exposures between the two are similar is reasonable. There was some question regarding the amount of time adults spend in public and commercial buildings. The Panel reemphasized that the Agency should consider using an incremental risk assessment approach.

The panel recessed for the day at 5:10 pm ET.

**Tuesday, December 7, 2010**

The Panel was reconvened at 8:30 am ET and the Panel proceeded to discuss their responses to the remaining charge questions.

*Charge Questions 3, 4, and 5 – Biokinetic Modeling; Uncertainty and Variability; Choice of Model*

The Panel discussed that in assessing children in public and commercial buildings, the IEUBK model was preferred over the Leggett model and recommended moving the Leggett results into an appendix. They found the Adult Lead Methodology to be reasonable in assessing adults in public and commercial buildings. Many of the comments regarding uncertainty and variability and choice of model discussed for the Residential document also apply to the Public and Commercial document.

Dr. Buckley provided a summary of key points and discussed next steps and action items.

With the business concluded, the Designated Federal Officer adjourned the meeting at 12:30 PM ET.

Respectfully Submitted:

Certified as True:

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Mr. Aaron Yeow  
Designated Federal Officer  
EPA SAB Staff Office

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Dr. Timothy Buckley  
Chair  
SAB Lead Review Panel

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Panel members during the course of deliberations within the meeting. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the Panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings.

## Materials Cited

The following meeting materials are available on the SAB website: <http://www.epa.gov/sab>, at the [December 6-7, 2010 SAB Lead Review Panel Meeting page](#):

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<sup>1</sup> Federal Register Notice Announcing the Meeting

<sup>2</sup> PDF for Approach for Developing Lead Dust Hazard Standards for Residences (November 2010 Draft)

<sup>3</sup> PDF for Approach for Developing Lead Dust Hazard Standards for Public and Commercial Buildings (November 2010 Draft)

<sup>4</sup> Agenda for December 6-7, 2010 Public Meeting

<sup>5</sup> Presentation by Cathy Fehrenbacher, “Approach for Developing Lead Dust Hazard Standards for Residences”

<sup>6</sup> Comments from Mr. Matthew Watkins, National Association of Home Builders (NAHB)

<sup>7</sup> Charge Questions for the Approach for Developing Lead Dust Hazard Standards for Residences (November 2010 Draft)

<sup>8</sup> Presentation by Dr. Jennifer Seed, “Approach for Developing Lead Dust Hazard Standards for Public and Commercial Buildings”

<sup>9</sup> Comments from Mr. Thomas Jackson, Baker Botts LLP on behalf of the Real Estate Industry Coalition

<sup>10</sup> Charge Questions for the Approach for Developing Lead Dust Hazard Standards for Public and Commercial Buildings (November 2010 Draft)

## **ATTACHMENT A - ROSTER**

### **U.S. Environmental Protection Agency Science Advisory Board Lead Review Panel**

#### **CHAIR**

**Dr. Timothy Buckley**, Associate Professor and Chair, Division of Environmental Health Sciences, College of Public Health, The Ohio State University, Columbus, OH

#### **MEMBERS**

**Dr. Richard Canfield**, Senior Research Associate, Division of Nutritional Sciences, Cornell University, Ithaca, NY

**Dr. Jack Caravanos\***, Associate Professor, Environmental & Occupational Health Sciences, School of Health Sciences, Hunter College of the City University of New York, New York, NY

**Dr. Scott Clark**, Professor, Environmental Health, College of Medicine, University of Cincinnati, Cincinnati, OH

**Dr. Kim Dietrich**, Professor, Department of Environmental Health, College of Medicine, University of Cincinnati, Cincinnati, OH

**Dr. Philip E. Goodrum**, Senior Project Manager, Environmental Resources Management (ERM), Dewitt, NY

**Dr. Sean Hays**, President, Summit Toxicology, Allenspark, CO

**Dr. Andrew Hunt**, Assistant Professor, Department of Earth and Environmental Sciences, University of Texas at Arlington, Arlington, TX

**Dr David E. Jacobs**, Adjunct Associate Professor, School of Public Health, Division of Occupational and Environmental Health MC922, University of Illinois at Chicago, Chicago, IL

**Dr. Michael A. Jayjock**, Senior Analyst, The LifeLine Group, Langhorne, PA

**Dr. Michael Kosnett**, Associate Clinical Professor, Division of Clinical Pharmacology and Toxicology, Department of Medicine, University of Colorado Health Sciences Center, Denver, CO

**Dr. Bruce Lanphear**, Professor, Children's Environmental Health, Faculty of Health Sciences, Simon Fraser University, Vancouver, BC, Canada

**Dr. Thomas Louis\*\***, Professor, Department of Biostatistics, Johns Hopkins University  
Bloomberg School of Public Health, Baltimore, MD

**Dr. Howard Mielke**, Research Professor, Department of Chemistry and Center for  
Bioenvironmental Research, Tulane University, New Orleans, LA

**Dr. Joel Pounds**, Scientist, Cell Biology & Biochemistry, Biological Sciences Division, Battelle  
- Pacific Northwest National Laboratory, Richland, WA

**Dr. Michael Rabinowitz**, Geochemist, Clinical Instructor in Neurology, Harvard University,  
Newport, RI

**Dr. Ian von Lindern**, President, TerraGraphics Environmental Engineering, Inc., Moscow, ID

**Dr. Michael Weitzman**, Professor, Pediatrics; Psychiatry, New York University School of  
Medicine, New York, NY

**SCIENCE ADVISORY BOARD STAFF**

**Mr. Aaron Yeow**, Designated Federal Officer, United States Environmental Protection Agency,  
Washington DC

\* Did not participate in the review.

\*\* Provided written comments only.

**ATTACHMENT B – Other Attendees  
SAB Lead Review Panel Public Meeting**

**December 6, 2010**

<b>Name</b>	<b>Affiliation</b>
Bevington, Charles	EPA
Burgess, Michele	EPA
Desiderio, Duane	The Real Estate Roundtable (RER)
Dixon, Sherry	National Center for Healthy Housing
Eftim, Sorina	ICF
Henry, Tala	EPA
Inks, Jeff	Window and Door Manufacturers Association
Konz, James	EPA
Kurtz, Katharine*	US Navy
Lee, Eileen	National Multi Housing Council (NMHC)
Mendez, William	ICF
Mosby, Jackie	EPA
Odina, Elizabeth	National Association of Home Builders (NAHB)
Pfahles-Hutchens, Andrea	EPA
Riggs, Russell	National Association of Realtors (NAR)
Wadlington, Christina	EPA
Watkins, Matt	NAHB
Winchester, Erik	EPA

**December 7, 2010**

<b>Name</b>	<b>Affiliation</b>
Eftim, Sorina	ICF
Kurtz, Katharine*	US Navy
Mosby, Jackie	EPA
Wadlington, Christina	EPA

\*Participated via teleconference