

**U.S. Environmental Protection Agency
Science Advisory Board**

**Summary Minutes for the Public Teleconference held on:
May 11, 2020**

Meeting Participants:

Chartered Science Advisory Board (SAB) Members

Dr. Michael Honeycutt, Chair	Dr. Robert E. Mace
Dr. Rodney Andrews	Dr. Clyde F. Martin
Dr. Hugh A. Barton	Dr. Sue Marty
Dr. Barbara Beck	Mr. Robert W. Merritt,
Dr. Deborah Hall Bennett	Dr. Larry Monroe
Dr. Frederick Bernthal	Dr. Thomas F. Parkerton
Dr. Bob Blanz	Dr. Robert Puls
Dr. Todd Brewer	Dr. Tara L. Sabo-Attwood
Dr. Joel G. Burken	Dr. Mara Seeley
Dr. Janice E. Chambers	Dr. Anne Smith
Dr. John R. Christy	Dr. Richard Smith
Dr. Samuel Cohen	Dr. Jay Turner
Dr. Louis Anthony (Tony) Cox, Jr.	Dr. Brant Ulsh
Dr. Alison C. Cullen	Dr. Donald van der Vaart
Dr. Otto C. Doering III	Ms. Carrie Vollmer-Sanders
Dr. Susan P. Felter	Dr. Kimberly White
Dr. Joseph A. Gardella	Dr. Mark Wiesner
Dr. John Guckenheimer	Dr. Peter J. Wilcoxon
Dr. Margaret M. MacDonell	Dr. S. Stanley Young

Science Advisory Board Drinking Water Committee

Dr. Craig Adams
Dr. Amy Childress
Dr. Baolin Deng
Dr. Raymond Hozalski
Dr. Mark LeChevallier
Dr. Richard Sakaji
Dr. Craig Steinmaus
Dr. June Weintraub
Dr. Lloyd Wilson
Dr. Yuefeng Xie

SAB Staff Office

Dr. Thomas Armitage, Designated Federal Officer (DFO) for the Chartered SAB
Mr. Thomas Brennan, SAB Staff Office Director

Other Attendees

See Attachment A.

Meeting Summary:

Convene the meeting

The Chartered Science Advisory Board (SAB) and SAB Drinking Water Committee held a public teleconference on May 11, 2020. Dr. Thomas Armitage, DFO for the Chartered SAB, convened the teleconference at approximately 1:00 pm (Eastern Time) and noted that the SAB was meeting to discuss the SAB Draft Report on the scientific and technical basis of EPA's proposed Lead and Copper Rule Revisions. Dr. Armitage provided introductory remarks in his capacity as DFO. He stated that the Chartered SAB and SAB Drinking Water Committee are independent Federal Advisory Committees. He noted that the SAB is chartered under the Federal Advisory Committee Act (FACA). He indicated that the SAB is empowered by law to provide scientific and technical advice to the EPA Administrator. Dr. Armitage noted that summary minutes of the teleconference would be prepared and certified by the SAB Chair following the meeting. He also and noted the SAB's compliance with ethics requirements.

Dr. Armitage indicated that all meeting materials were available on the SAB website. He noted that the meeting materials included Chartered SAB and SAB Drinking Water Committee rosters,^{1, 2} and meeting agenda.³

Dr. Armitage noted that seven individuals had registered to provide oral public comments on the teleconference and that their names were on the list of public speakers posted on the SAB website.⁴ He also noted that written public comments had been received, posted on the SAB website, and made available to SAB and SAB Drinking Water Committee members. Dr. Armitage also indicated that public access to the meeting had been provided through a telephone line. Dr. Armitage called the roll the Chartered SAB and the SAB Drinking Water Committee members and turned the meeting over to Dr. Michael Honeycutt, Chair of the Chartered SAB.

Purpose of the Teleconference and Review of the Agenda

Dr. Honeycutt welcomed Chartered SAB members, SAB Drinking Water Committee members EPA Staff, and others to the teleconference and reviewed the purpose of call and the agenda. He indicated that: (1) the SAB would first hear public comments, (2) following public comments the SAB would brief remarks from the EPA Office of Water, and (3) the SAB would discuss its draft report titled "Consideration of the Scientific and Technical Basis of EPA's Proposed Rule titled National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions."

Dr. Honeycutt indicated that the objective of the teleconference was to reach agreement on any changes needed in the draft report. He indicated that SAB and SAB Drinking Water Committee members would discuss the report section-by-section. He stated that, if revisions were needed, he would assign members to send revised text to the DFO after the teleconference or ask members to agree that he could work with the DFO to incorporate changes into the report. Dr. Honeycutt indicated that, in discussing the report, he wanted members to focus on points that: (1)

lacked consensus, (2) were inaccurate, (3) needed additional explanation or context, or (4) needed to be added to the report.

Public Comments

Dr. Honeycutt next called each individual on the list of public speakers to provide oral comments. He asked each speaker to limit the comments to three minutes.

Lynn Thorp of Clean Water Action commented that it was important to consider the safety of water lines regardless of ownership of the lines. She noted, for example, that the District of Columbia's replacement of water lines addressed only lines owned by city, not those on private property. She noted that this caused disproportionate effects on lower income people. She also commented that more should be done to support full lead-line replacement. In addition, she commented on the importance of considering the cardiovascular effects of lead exposure.

Joseph Cotruvo commented on the complexity of the lead and copper rule proposed in 1989 and noted that the original rule had not been fully implemented. He commented on the importance of identifying the costs of the proposed rule and technologies for corrosion control. He noted that, if there was a lack of compliance with rule requirements, enforcement action was needed. He noted that EPA's proposed rule addressed effects after the water treatment plant. He noted that, line service line replacement did not address problems associated with in-home galvanized plumbing. He commented that real estate transfer requirements could address this issue and improve the water line system over time.

Ronnie Levin of the Environmental Protection Network (EPN) noted that he had retired from EPA and was now at EPN. He commented that the proposed rule failed to expedite implementation of measures needed to reduce lead levels, strengthen compliance, record violations, and address under-reporting. He commented that 90% of violations of lead levels were not reported and this undermined the effectiveness of proposed rule. He commented that EPA should commit to 6-year review of compliance reported by states using a shared data system. An SAB member asked for the source of the information indicating that 90% of violations were not reported. The speaker responded that the 90% violation rate was reported in a recent GAO study.

Elin Betanzo of Safe Water Engineering commented on options to protect drinking water that could be discussed in the Science Advisory Board report. She noted that the proposed rule must address tests beyond only the standard sampling of the first liter of water, which primarily represented water quality within galvanized pipe. She also noted that: chloramination increased compliance challenges; in-home treatment and training on filter strategies was needed; and communication of risks needed to be clear, accurate, and complete. She noted that communities should be asked what information they need. She suggested that complete replacement of lead lines should be mandated.

Eric Olsen of the Natural Resources Defense Council commented that the SAB report on the proposed rule was a good first draft. He commented that the first draw was not a representative sample. He expressed support for a 5th liter + 1st liter sampling approach. He cautioned against

using random sampling, which would overlook peak lead concentrations. Regarding use of a “trigger level,” he recommended dropping the trigger level to 10 or even 5µg/l as a single action level. He noted that a survey of replacement of lead service lines indicated that it would take 33 years to complete full replacement. He did not support partial service line replacement and indicated that it should be banned. He commented that sampling should be required after any change in water treatment, and should be done by an independent engineer. He commented that the EPA should involve public in obtaining input on how to prepare useful public communications.

Michelle Mabson of Earthjustice commented on EPA’s proposed rule, noting that there was no justification for decreasing the requirement to replace 7% of lead service lines annually to 3%. She commented that cardiovascular effects of lead exposure should be included in the benefit-cost analysis for the proposed rule. She commented that technical guidance was needed for sampling in schools. She noted that sampling should be conducted by priority need and indicated that there was no safe level of lead exposure. She noted that this should be taken into consideration by the SAB.

Steve Via of the American Waterworks Association noted that the American Waterworks Association was an international non-profit organization with 50,000 professional members. He expressed appreciation for the SAB’s rapid review of the proposed rule. He noted that many water systems were already developing new approaches and that the SAB’s input would be very helpful. He commented on the importance of maintaining and enhancing current corrosion control and providing assistance for lead line inventories.

Dr. Honeycutt thanked the speakers for their comments and indicated that the SAB would next hear remarks from the EPA Office of Water.

Remarks from the EPA Office of Water

Dr. Honeycutt invited Ms. Charlotte Bertrand, Deputy Assistant Administrator in EPA’s Office of Water, to provide remarks. Ms. Bertrand thanked the SAB for its review of the proposed Lead and Copper Rule. She noted that the proposal was the first revision of the Rule since 1991. She indicated that the proposal would require more water systems to upgrade and provide greater health protection. She commented that the draft SAB report appeared to include both scientific and policy recommendations and she requested that the Board distinguish between the two. Dr. Honeycutt asked Ms. Bertrand to provide examples of policy recommendations that had been included in the SAB draft report. Ms. Bertrand responded that the issue of whether to develop a new rule versus updating the current rule was an example of policy judgment rather than science. Ms. Bertrand indicated that the Agency was continuing to review the public comments received on the proposed rule and was working to promulgate a final rule by end of summer, 2020.

Dr. Honeycutt thanked Ms. Bertrand for her remarks and indicated that the SAB would next discuss its draft report.

Discussion of the SAB Draft Report

Dr. Mark Wiesner, Chair of the SAB Drinking Water Committee, summarized the draft report. He indicated that the report had been developed by a workgroup of 17 Chartered SAB and SAB Drinking Water Committee members. The report focused on topics discussed by the Chartered SAB and SAB Drinking Water Committee at a teleconference held on March 20th, 2020. The topics included provisions in the proposed rule for water sampling and treatment, trigger levels, public education, and risk communication as well as the EPA's benefit-cost analysis and analysis of children's blood lead levels and IQ. Dr. Wiesner noted that the EPA had provided some additional charge questions to the SAB and the workgroup had responded to these questions. Dr. Honeycutt thanked Dr. Wiesner and called for discussion of the draft report.

Members of the Chartered SAB and SAB Drinking Water Committee first discussed Section 3.1 (Water Sampling Requirements) of the report. A member noted that in Section 3.1, corrections were needed to change units listed from mg/L to ug/ L. Members discussed the recommendations for public education. A member noted that it would be difficult for schools, states, and child-care facilities to implement some of the recommendations without additional funding.

Members discussed the sampling recommendations in the draft report. A member suggested that the SAB clarify advice to homeowners about flushing pipes. Members discussed recommendations for random sampling. Some members commented that, although random sampling would provide a more accurate estimate of lead exposure, it could be difficult to implement. A member commented that the SAB report should recommend that the objectives of the water sampling program be more clearly discussed in the proposed rule. A member commented that 5th liter sampling would provide an estimate of lead in service lines. He noted that this sampling could be conducted by professional samplers. Members discussed the benefits and implementation problems associated random sampling. A member commented that random sampling was a good sampling approach but a more detailed description of random sampling should be provided in the SAB report. Members of the SAB workgroup agreed to revise the report to provide more detailed information about sampling objectives, random sampling and implementation of a 5th liter approach. Dr. Honeycutt asked Dr. Childress to revise the text on page 8 lines 32-35 of the draft report to clarify the recommendation concerning random sampling. Dr. Childress indicated that randomization referred to the day and time of sampling. Members also discussed removing the report text indicating that it might be preferable to develop a new rule and not revise the existing rule.

SAB and SAB Drinking Water Committee members discussed Section 3.2 of the draft report (Water Treatment). Members discussed SAB recommendations concerning polyphosphate corrosion treatment. A member noted that the SAB recommendations should not disallow the use of polyphosphate corrosion treatment if plants could show that it was working to reduce corrosion. A member commented that the SAB recommendations in the draft report should be revised to allow the use of polyphosphate treatment for corrosion control if plants had previously used it successfully. Another member commented that the report should not suggest that free chlorine be used for corrosion control.

A member commented that the SAB draft report did not include discussion of the increased costs of waste water treatment associated with the use of orthophosphate for corrosion treatment. Dr. Honeycutt commented that clarifying language should be included in the report to indicate that the Board did not assess these increased costs. He asked Dr. Sakaji to revise the report to address the water treatment issues that had been discussed. Drs. LeChevallier and Weintraub indicated that they would work with Dr. Sakaji to provide revised text for this part of the draft report.

Members discussed Section 3.3 (Benefit-Cost Analysis) of the draft report. Members discussed EPA's use of discount rates in the benefit-cost analysis. A member commented that the OMB had provided guidance on this issue. Members discussed the studies EPA had used to establish benefits for the analysis. A member expressed concern about some studies that had been cited in the SAB draft report. The member noted that on page 13, lines 45 – 47 the draft report cited a study that indicated statistical association. The member commented that the study dichotomized smoking history and overlooked error. The member commented that the continuous variables left "residual confounding" errors. The member pointed out that the SAB report should indicate that association did not equal causation. Another member commented that he was not inclined to overstress residual confounding. Members agreed to include additional text in the draft report to discuss confounders. Dr. Richard Smith agreed to incorporate these revisions.

A member commented that the SAB report should focus on whether EPA's effort in summarizing, interpreting, and applying data to develop the proposed rule was appropriate. She commented that it was not particularly helpful to include in the SAB report a detailed discussion of specific studies that EPA had used.

Members suggested edits in parts of the draft report to clarify statements concerning documentation of benefits and causation. A member indicated that EPA's benefit-cost analysis had understated benefits and thus a different action level could be supported. Another member commented that the SAB report should include caveats regarding conclusions of causality to be drawn from published studies. The member suggested that the SAB report refer to association rather than causation. A member indicated that the executive summary and the main body of the report should be revised to include the changes suggested by SAB members.

Members discussed the need to conduct benefit-cost analyses at different lead exposure levels. A member commented that the OMB Guidelines for Economic Analysis called for conducting the analysis at high, medium, and low levels of exposure. Members agreed and suggested that on page 14, lines 38- 39 the report should indicate that best practice would be to assess benefits and costs at higher and lower levels. Dr. Richard Smith indicated that he would provide edits to revise the report text on pages 13 and 14. Dr. Felter noted that she would also provide edits on page 14, line 8 of the report.

Members discussed Section 3.4 of the draft report (Trigger Level). Members commented on the new trigger level that had been proposed by the EPA. Members discussed text in the SAB draft report that indicated the trigger level did not have a scientific basis. Members suggested that the report state that no safe level of lead had been identified. A member suggested that the report

indicate that trigger and action levels were “engineering levels,” for treatment. She suggested that a Center for Disease Control (CDC) report be cited as a reference. A member commented that the proposed trigger level could help initiate lead service line replacement. Other members questioned whether both a trigger level and an action level were needed. Members suggested that adding a new trigger level would confuse the public and create more work for EPA. A member commented that, rather than adding a new trigger level in the proposed rule, it would be better to make the action level lower because no safe level of lead had been identified. Other members recommended that the EPA conduct a benefit-cost analysis associated with three action levels - 5, 10, and 15 ug/L. Members commented that the issue of whether to identify a trigger and an action level was a policy decision. Members suggested that the EPA establish one level based on benefit-cost analyses. Dr. Honeycutt asked Drs. Wilson and Weintraub to revise the report to incorporate the revisions discussed.

Members discussed Section 3.5 of the draft report (Analysis of Children’s Blood Lead Levels and IQ). A member noted that this was an important area of research. She suggested that the SAB report acknowledge that EPA’s analysis had been good and make some suggestions for improvements. A member commented on the use of mother’s blood level in IQ studies noting the importance of IQ inheritability. Another member responded that mother’s blood lead level had been used because of the availability of data. She suggested that the SAB report focus on providing advice about EPA’s use of the available data. A member commented that the SAB report should indicate that the availability of multiple studies strengthened the benefits assessment. Members discussed and agreed on other edits to clarify some points concerning statistical analysis and cite some more recent papers which showed generally lower exposures.

Members discussed Section 3.6 of the draft report (Public Education, Notification, and Risk Communication Provisions in the Proposed Rule). Dr. Wilson commented that in the SAB report the word “Prime” should be deleted before SIDWIS. Dr. Wilson indicated that he would provide edits on page 23, lines 23-30 of the draft report. Members discussed reporting requirements in the proposed rule and several members suggested edits in the SAB draft report. Dr. Honeycutt noted that some of the issues discussed by the Board focused on enforcement and were not science issues. A member suggested that the SAB report encourage the EPA to work with non-profit organizations to conduct public education and communicate with the public. Dr. Honeycutt asked Drs. Gardella and Chambers incorporate a revision into the report to address this suggestion.

Members discussed Section 4 of the draft report (SAB Responses to Specific EPA Questions). A member commented that the first question was difficult to answer. Members indicated that the general framework provided in the response to the first subpart of the first question provided a general framework that could help identify the needed variables for statistical modeling to predict the presence of lead service lines. Members commented that they did not have specific recommendations to answer the second subpart of the first question. A member commented it was likely that people know where lead service lines are located. Another member commented that the most useful predictor of information about lead service lines was the age of a home. The member indicated that sampling of homes could be conducted to augment records that were 50 –

100 years old. A member commented that the factors most predictive of lead service lines were age of home, blood lead levels, and socioeconomic status. Dr. Honeycutt asked Dr. Lloyd to provide revisions in the response to the first question.

Disposition of the SAB Draft Report

After the discussion of the draft report, Dr. Honeycutt suggested that the letter to the Administrator and executive summary be revised to reflect the report changes discussed. He suggested pulling some specific points from report into the executive summary. He then asked for a motion to approve the report with the revisions discussed. A motion was made to approve the report with the changes discussed. The motion was seconded and Chartered SAB and SAB Drinking Water Committee members unanimously approved the report with the changes discussed.

Summary and Next Steps

Dr. Honeycutt thanked Chartered SAB and SAB Drinking Water Committee members for developing the report. He indicated that the DFO (Dr. Armitage) would send an email to members who had follow-up assignments discussed on the call. He asked any members who had editorial comments to send them to the DFO by Monday, May 18th. He indicated that the report would be revised and sent to SAB and SAB Drinking Water Committee members for final concurrence. He asked members if they had additional questions. There were no additional questions so he asked the DFO to adjourn the meeting

Meeting adjourned

Dr. Armitage He thanked members for their work and adjourned the meeting at approximately 5 pm (Eastern Time).

Respectfully Submitted:

Certified as Accurate:

/s/
Dr. Thomas Armitage
Designated Federal Officer

/s/
Dr. Michael Honeycutt
Chartered SAB Chair

Date: October 5, 2020

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive 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.

Appendix A: Additional meeting participants who requested the teleconference call-in number.

Name	Affiliation
Elin Betanzo	Safe Water Engineering
Tom Carpenter	
Jeff Cohen	Xpansiv
Joseph Cotruvo	
Will Craft	APM Reports
Catherine DiPietro	
Zaida Figueroa	EPA
Stiven Foster	EPA
Olivia Fromm	Environmental Protection Network
Andrew Geller	EPA
Iris Goodman	EPA
Sabrina Haydt	Pennsylvania DEP
Erik Helm	EPA
Jane Houlihan	Healthy Babies Bright Futures
Joe Hubbard	EPA
Amanda Kasper	EPA
Vic Kimm	
Heather Klemick	EPA
Sandra Kutzing	CDM Smith
France Lemieux	Health Canada
Ronnie Levin	Harvard University
Michelle Mabson	Earthjustice
Lindsay McCormick	EDF
Jennifer Mundt	NCDEQ
Tom Neltner	EDF
Hannah Northey	E&E News
Suzanne Novak	Earthjustice
Suzanne Novak	Earthjustice
Erik Olson	NRDC
Mekela Panditharat	Earthjustice
Thomas Poy	EPA Region 5
Geena Reed	Union of Concerned Scientists
Carl Reeverts	Environmental Protection Network
George Rizzo	EPA Region 3
Blake Robinson	Mutch & Associates
Lauren Rosenthal	APM Reports
Amena Saiyid	Bloomberg Environment
Andrew Sallach	EPA Region 9
Manthan Shah	EPA
Annie Snyder	Politico
Lynn Thorp	Clean Water Action

Name	Affiliation
Steve Via	American Waterworks Association
Antonia Wilfred	State of Delaware
Valerie Zartarian	EPA

Materials Cited:

All meeting materials are available on the SAB website (<http://www.epa.gov/sab>) at the page for the May 11, 2020 teleconference. The direct web link is:

<https://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/3e311ac029ab1878852585130053b489!OpenDocument&Date=2020-05-11>

¹ Chartered SAB Roster

² SAB Drinking Water Committee Roster

³ Agenda

⁴ List of Public Speakers