

April 25, 2023

Office of Environmental Health Hazard Assessment
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Sacramento, CA 95814

Submitted electronically at <https://oehha.ca.gov/comments>

RE: Second Data Call-In for the Hexavalent Chromium Public Health Goal Update

To Whom It May Concern:

The undersigned organizations appreciate the opportunity to offer recommendations to the Office of Environmental Health Hazard Assessment (OEHHA) in response to the second data call-in for updating the Public Health Goal for hexavalent chromium, or Cr(VI), in drinking water. Members of our organizations serve the vast majority of drinking water consumers in California, and have a strong interest in the toxicity of Cr(VI) when ingested orally. We are aware of a growing body of scientific research on this subject, including relevant studies published before and after the 2016 call-in period. We support OEHHA's decision to include in this PHG review many published reports that were also previously available for the 2016 review.

The announcement for this data call-in indicates that OEHHA will also consider studies cited in the U.S. Environmental Protection Agency's (EPA's) draft IRIS toxicological review of Cr(VI). With reference to that review, we recommend OEHHA consider the letter submitted by AWWA¹ that poses serious concerns about the process EPA followed, leading to flawed conclusions as to the Mode of Action (MOA). We raise this point to emphasize that OEHHA must undertake a completely original and independent review: one that is based on the quality of the scientific works reviewed, their relevance to human health, and indifference to the source of funding for the research. However, if OEHHA does look to external evaluations of the literature on Cr(VI) toxicity via drinking water ingestion, the analysis of other national bodies should be considered along with that of the EPA. Specifically, OEHHA should consider the technical analysis published by Health Canada in 2016.² Since the Canadian action, similar conclusions were made by the regulatory body in Japan,³ by the Texas Commission on Environmental Quality,⁴ and by the World Health Organization.⁵ Contradicting the EPA position, strongly suggesting that the thesis of a mutagenic MOA for cancer has been, and should be supplanted on the basis of more recent scientific data.

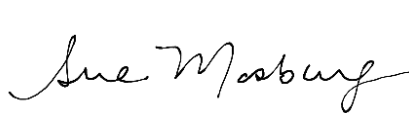
A convincing body of research conducted since 2016 builds on earlier works available to OEHHA for the last PHG review, and adds substantially more clarity on the crucial question of what happens in the human body when Cr(VI) is ingested at doses comparable to the concentrations found in drinking water. The linear dose response previously posited, which OEHHA relied on in setting the 2011 PHG, is not supported. Rather, there is now more authoritative evidence of a non-linear, threshold MOA for carcinogenic effects. This body of scientific research, largely produced and published by the researchers at ToxStrategies, also point to non-cancer effects, such as intestinal hyperplasia, that would be the appropriate marker for OEHHA to use in updating a non-cancer PHG. Moreover, the dose producing intestinal hyperplasia would be sufficiently protective against cancer, supporting the reasoning for other health regulatory authorities cited above to adopt threshold based toxicity criteria for Cr(VI).

On the pages that follow, we have attempted to list the important publications that OEHHA should analyze, starting with a clean slate to establish a PHG for hexavalent chromium. Our list begins with the most recent publications, and we additionally include studies published before 2016 that will help to inform the necessary PHG review.

Our organizations appreciate this opportunity to add to the public record for such an important task. The PHG serves as a foundation for a Maximum Contaminant Level in drinking water. With naturally occurring Cr(VI) found widely throughout California in groundwater and even surface water, these two regulatory determinations potentially bear a combined impact in the hundreds of millions of dollars for water treatment. Those costs will ultimately be passed to consumers through water rates, intensifying the challenge to keep drinking water affordable to residents with low and moderate financial means.

If we can be of any further support to OEHHA in its risk assessment effort, please contact any of the undersigned at the email addresses shown.

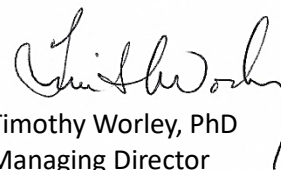
Sincerely,



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Enclosures (2)

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¹ AWWA, Comment letter regarding "Draft IRIS Toxicological Review of Hexavalent Chromium, Docket No. EPA-HQ-ORD-2014-0313," December 19, 2022.

² Health Canada, "Guidelines for Canadian Drinking Water Quality: Guideline Technical Document - Chromium," March 2016. Accessed at <https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-chromium.html>, April 19, 2023.

³ FSCJ. Risk Assessment Report Hexavalent Chromium (Beverages). Food Safety Commission of Japan. 2019;7(2):56-57.

⁴ TCEQ. Hexavalent Chromium Oral Reference Dose: Development Support Document (Final). 2016.

⁵ WHO. Chromium in Drinking Water: Background Document for Development of WHO Guidelines for Drinking-water quality. 2020;WHO/HEP/ECH/WSH/2020.3.

RECOMMENDED DATA SOURCES

Published Present to 2017

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4. Chappell GA, Wikoff DS, Thompson CM. 2021. Assessment of mechanistic data for hexavalent chromium-induced rodent intestinal cancer using the key characteristics of carcinogens. *Toxicol Sci* 180(1):38-50, <https://doi.org/10.1093/toxsci/kfaa187>.
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