



The Western Coalition of Arid States
WESTCAS

October 28, 2009

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Michael Baes

Pesticide and Environmental Toxicology Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency
1515 Clay Street, 16th floor
Oakland, California 94612

Dear Mr. Baes:

The Western Coalition of Arid States (WESTCAS) is pleased to provide comments on the Draft Public Health Goal (PHG) for hexavalent chromium in California drinking water.

WESTCAS is a coalition of approximately 125 water and wastewater districts, cities, towns, and professional organizations focused on water quality and water quantity issues in the States of Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, and Texas. Our mission is to work with Federal, State, and Regional water quality and quantity agencies to promote scientifically-sound laws, regulations, appropriations, and policies that protect public health and the environment in the arid West.

The proposed PHG is of great interest to WESTCAS members. Elevated levels of naturally occurring hexavalent chromium occurs in groundwater found in the California Mojave and Sonoran deserts, which shares hydrological characteristics found in many areas within the arid West.

Your agency's draft PHG of 0.06 parts per billion (ppb) is based on select data that includes the results of a recent National Toxicology Program (NTP) study that concluded cancer of the oral cavity in rats and cancer of the small intestine in mice occurs when hexavalent chromium is ingested in very high doses.

WESTCAS believes the results of the NTP study and other referenced studies do not sufficiently demonstrate that human carcinogenicity is caused by ingesting hexavalent chromium in drinking water. WESTCAS supports those comments submitted by

The Voice of Water Quality in the Arid West

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the Association of California Agencies (ACWA) and we share with ACWA the concerns raised in these comments.

As indicated in the draft PHG document, several studies previously estimated that saliva and stomach fluids have the capacity to reduce hexavalent chromium to trivalent chromium in amounts much larger than the “maximum plausible levels of hexavalent chromium in water that would likely be ingested by humans...” The document further asserts that “...exhaustion of the capacity of saliva and gastric fluids to reduce hexavalent chromium appears unlikely.”¹ WESTCAS understands other studies exist and are referenced in the document providing evidence that complete reduction may not always occur, but believes the administered doses in the NTP study are so large they easily overwhelmed the reductive capacity of both the oral cavity and the stomach in the rodents. This is especially significant as the NTP study did not find excess cancers at the lowered studied doses in both rats and mice. Equally as important, the stomach composition of humans and rodents is very different, with humans having a much more sophisticated and higher level of gastric juices than rodents.

WESTCAS is also concerned with the interpretation and use of data from two key studies submitted as evidence that hexavalent chromium in drinking water is a human carcinogen. The first of these studies was completed in 1968 by Borneff *et al.* After extensive review, an expert panel report concluded this study was seriously flawed due primarily to poor hygiene, which killed most of the parent and first generation mice and could have been the cause of the specific adverse effects that the authors attributed to hexavalent chromium. This study has no merit and should not be used to support the subject PHG. In the work completed in 1987 and 1997 by Zhang and Li, the data shows a negative dose-response between chromate exposure in drinking water and cancer rates found in about 10,000 villagers exposed to groundwater contaminated with hexavalent chromium levels as high as 2,600 ppb. The authors concluded there was no association between chromate exposure and any form of cancer in this population. Using a selective re-analysis of this study, the PHG document concludes a statistically significant increase in stomach cancer occurred based on unsupported assumptions about water consumption practices, plume migration and population distributions.

Sound science is critical for the development of PHGs and WESTCAS believes the science presented in the subject report is flawed and does not support the draft PHG for hexavalent chromium in drinking water. Additional scientific studies

¹ “Draft Public Health Goal for Hexavalent Chromium in Drinking Water,” Office of Environmental Health Hazard Assessment, August 2009

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and an additional external peer review of this PHG document is needed prior to establishing a final PHG for hexavalent chromium in drinking water.

Your consideration of these comments is appreciated.

Respectfully submitted,



Robert Hollander
President, WESTCAS

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