

State Water Resources Control Board

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State Water Resources Control Board
1001 I Street Sacramento, California 95814

DATE: January 22, 2019

SUBJECT: REQUEST TO ESTABLISH PUBLIC HEALTH GOAL (PHG) for 1,4- DIOXANE

1,4-dioxane is a solvent and mainly a stabilizer for chlorinated solvents. It is used in a variety of industrial and commercial applications. The chemical causes cancer in laboratory animals, is reasonably anticipated to be a human carcinogen, and was first listed in the Annual Report on Carcinogens in 1981. In 1988, 1,4-dioxane was added to the list of chemicals known to the State of California to cause cancer (Title 27, California Code of Regulations, Section 27001). The United States Environmental Protection Agency (U.S. EPA) also considers it to pose a cancer risk.

In 1997, the California Department of Public Health's Drinking Water Program, now the State Water Resources Control Board Division of Drinking Water, requested OEHHA concurrence on a proposed action level, now known as a notification level, for 1,4-dioxane. In 1998, concurrence was received from OEHHA and a 3 µg/L action level was established. The action level was based on a U.S. EPA's 1990 determination that a drinking water concentration of 3 µg/L corresponded to a 10⁻⁶ theoretical lifetime cancer risk. In 2010, U.S. EPA revised its 1,4-dioxane risk evaluation, such that a 10⁻⁶ theoretical lifetime cancer risk level corresponds to a drinking water concentration of 0.35 µg/L. In November 2010, based on U.S. EPA's revised risk determination, and considering analytical capabilities and limitations at the time, the Drinking Water Program revised the notification level to 1 µg/L.

While drinking water systems are not currently required to routinely monitor for 1,4-dioxane, some systems have either voluntarily sampled, or have been directed to sample pursuant to Health and Safety Code section 116400. Based on occurrence data gathered since January 1, 2014, there are 184 sources impacted by 1,4-dioxane. These sources supply 54 public water systems and serve a population of approximately 7.4 million people. Each of these sources has reported at least one result with a detection above the current reporting limit of 1 µg/L. As the

reporting limit is greater than U.S. EPA's established cancer risk level of 0.35 µg/L, the total number of persons impacted by 1,4-dioxane is likely underestimated.

An enforceable drinking water Maximum Contaminant Level (MCL) has not been established for 1,4-dioxane. Based on U.S. EPA risk assessments, the population impacted, and California's policy to reduce cancer-causing chemicals in drinking water to the lowest level feasible and ensure that water delivered by public water systems is at all times pure, wholesome, and potable, the State Water Board intends to promulgate a Maximum Contaminant Level for 1,4-dioxane.

Health and Safety Code §116365(a) requires an MCL to be established at a level as close to its Public Health Goal (PHG) as is technologically and economically feasible, placing primary emphasis on the protection of public health. The State Water Board hereby requests that OEHHA establish a PHG for 1,4-dioxane so that the 1,4-dioxane MCL rulemaking work may proceed.