CCLHO

California Conference of Local Health Officers
Department of Health Services
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Roberta Lawson, RDH, MPH, Executive Administrator

March 8, 2005

Dear Health Officer:

The California Conference of Local Health Officers (CCLHO) has reviewed current knowledge and evidence regarding the efficacy and safety of monochloramine used for residual disinfection of the public drinking water supply. Based on the best available evidence in the biomedical literature, we conclude that:

- Monochloramine, when used as a public water system disinfectant, will adequately protect the public's health by controlling exposure to waterborne organisms known to cause infectious diseases in humans.
- Drinking water treated with monochloramine is not known to cause significant adverse human health effects.
- Relative to chlorine, monochloramine will result in lower levels of potentially hazardous chemical disinfection by-products, allowing utilities to meet or exceed current regulatory requirements for limiting disinfection by-products.
- Monochloramine appears to be the better available method when compared with chlorine for residual disinfection of public drinking water supplies in which high concentrations of trihalomethanes or haloacetic acids result from chlorination.

CCLHO further recommends that studies to monitor for possible health effects related to the use of monochloramine continue, and that public drinking water utilities be attentive to technical considerations related to water chemistry when initiating and maintaining monochloramine disinfection.

Attached are a bibliography of reviewed materials and a summary of technical considerations related to monochloramine disinfection.

Sincerely,

(Original signed by:)

Scott Morrow, M.D., M.P.H.
President, CCLHO

Attachments: Appendix A
Appendix B

SUNDAY, OCTOBER 9, 2005 OPINION ☆☆ San Francisco Chronicle E5

San Francisco Chronicle
THE VOICE OF THE WEST

OPEN FORUM | *Examining Our H2O*

Making great water better?

By Denise Johnson-Kula

On Feb. 2, 2004, with no public input and minimal notification, the San Francisco Public Utilities Commission switched from chlorine to sanitize its water supplies to chloramine, a combination of chlorine and ammonia.

The introduction of chloramine has compromised our safety. Many residents, unaware of the changeover, suddenly began to experience health effects: burning skin; red rashes; itching; dry mouth and throat; digestive problems; coughing; wheezing; sinus congestion; and severe asthma symptoms. Some individuals' serious and debilitating symptoms were documented by their physicians. Foul taste and odor of the water were also reported.

Complaints to city utilities or water providers were referred to the SFPUC, which offered little help. The agency acknowledged that chloramine kills fish and amphibians, but it was dismissive of reports of individual physical symptoms. The SFPUC claims that chloramine is "safe," and that it was "making great water better." However, a review of the scientific literature reveals that the human health effects of chloramine have not been studied.

The Environmental Protection Agency stated clearly in a 1999 report that there are *no* scientific studies on skin or respiratory effects of chloramine. It further states that the limited cancer studies done so far are inadequate for assessing if chloramine can cause the skin or respiratory problems people reported or whether it can cause cancer.

The World Health Organization states in its 1996 "Guidelines for Drinking Water Quality" that chloramine is a much less effective disinfectant than chlorine. WHO recommends that people with suppressed immune systems, such as HIV and AIDS patients or those undergoing chemotherapy, must now boil their water for 10 minutes before drinking or they risk becoming ill.

Because of complaints from residents, the San Mateo County Board of Supervisors endorsed a resolution on Dec. 7, 2004, asking the California Conference of Local Health Officials to evaluate the potentially harmful health effects of chloramine. But it came as a disappointment that in its March 8 follow-up, the conference revealed that it did not conduct any health studies on chloramine. It simply reviewed the existing literature. This literature focuses mainly on chlorine and its disinfection byproducts, such as trihalomethanes. (The EPA now regulates the allowable levels of trihalomethanes, which are possible carcinogens formed when chlorine combines with organic matter in water. In the switch to chloramine, the formation of trihalomethanes are lowered only by one-third — just enough for the SFPUC to comply with the new EPA requirements).

The conference concluded in its report that, based on the "available" evidence:

- Chloramine is "adequate" as a disinfectant. (Fact: WHO states that chlorine is actually superior to chloramine.)
- When compared to chlorine, chloramine "appears" to be the better choice because it lowers the levels of disinfection byproducts. (Fact: The conference did not consider any ways to lower disinfectant byproducts other than the use of chloramine.)
- Chloramine causes "no known" adverse health effects. (Fact: The EPA notes there are no studies on chloramine's health effects. Because there are no studies, there are "no known" adverse health effects.)

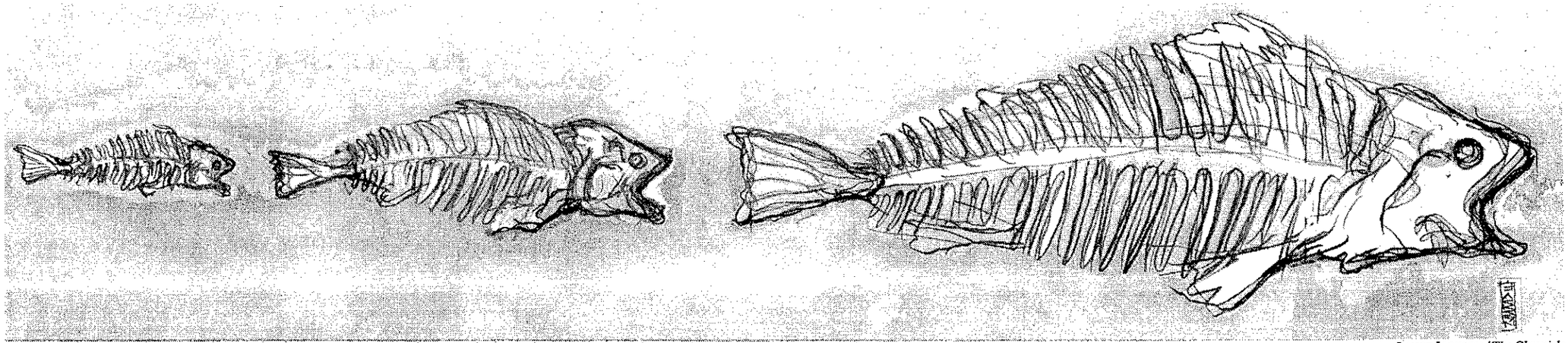
Furthermore, the conference recommended that the public be monitored for health effects related to the use of chloramine. But we the public never agreed to be used as guinea pigs to determine whether chloramine is safe for human health.

Appropriate laboratory studies should have been completed *before* the public was exposed to this untested chemical. Some people cannot use the water at all and must rely exclusively on bottled water. Filtration for low-flow uses is available for a few hundred dollars, but for high-flow uses such as bathing, showering and laundry, a house filtration system (costing approximately $15,000 to install) is necessary.

The SFPUC says it has no chloramine alternative, though the EPA offers several choices. The best solution comes from WHO, which recommends that the formation of trihalomethanes be minimized by filtering the organic matter in the water before final disinfection with chlorine, thus eliminating trihalomethanes altogether.

The SFPUC should acknowledge the reported negative health effects from the use of chloramine and initiate real laboratory studies to investigate them. For those presently suffering the dire effects of chloramine exposure, grants and loans for whole-house filtration should be provided. Ultimately, chloramine should be removed from our water supply and prefiltration implemented. Then we can truly say that we are making our great water even better.

Denise Johnson-Kula is president of Citizens Concerned about Chloramine (CCAchloramine@aol.com).



LANCE JACKSON / *The Chronicle*