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San Francisco Bay Region

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Arnold Schwarzenegger
Governor

February 26, 2010
Place ID: 273205

David W. Knapp
City Manager, City of Cupertino
10300 Torre Ave.
Cupertino, CA 95014-3255

**SUBJECT: STEVENS CREEK RESERVOIR AND MERCURY;
CITY MANAGER LETTER DATED JANUARY 21, 2010**

Dear Mr. Knapp:

Following are answers to the three questions that you conveyed to us in your letter of January 21, 2010, regarding mercury and Stevens Creek Reservoir.

1) How do mercury levels compare across reservoirs in Santa Clara County?

Santa Clara County is home to the New Almaden mining district, the largest mercury mine district in North America. Mercury-laden sediment that has migrated downstream of New Almaden has polluted reservoirs in the Guadalupe River watershed. For instance, Guadalupe Reservoir near New Almaden has the highest recorded fish mercury concentrations in California. People are advised to not eat any fish from waters downstream of New Almaden.

Mercury levels in fish from Stevens Creek Reservoir and Anderson Reservoir appear to be somewhat elevated compared to other reservoirs that also are not downstream of mercury mines. People are advised to limit their consumption of fish from these reservoirs.

Table 2-1 below provides a comparison of fish mercury concentrations across the San Francisco Bay Region. Fish continue to bioaccumulate mercury as they age and grow longer. Therefore, it is most accurate to compare fish mercury concentrations in one species at one standard length; Table 2-1 provides mercury data standardized on a 40 cm largemouth bass. Top predators have the highest concentrations of bioaccumulative pollutants like mercury. Largemouth bass are top predators, and consequently have higher mercury concentrations than other species of fish in Bay Area reservoirs. People who eat fish from these reservoirs generally consume a mix of species, some quite low in mercury such as trout, and others very high in mercury such as largemouth bass.

The State Office of Environmental Health Hazard Assessment has prepared fish consumption advice (scroll down for specific reservoirs) that is available at:

http://www.oehha.ca.gov/fish/so_cal/index.html

California Environmental Protection Agency

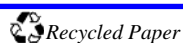


Table 2.1 Mercury in Fish from San Francisco Bay Area		
<i>Citation: Table 8-3, Data Collection Report (Tetra Tech 2005a)</i>		
Water Body Downstream of New Almaden Mining District	Other Water Bodies in San Francisco Bay Area (only Soulajule Reservoir is affected by mercury mines)	Mercury in Standardized 40 cm Largemouth Bass (mg/kg, wet weight)
Guadalupe Reservoir		5.8
Almaden Reservoir		3.6
Lake Almaden		2.1
	Stevens Creek Reservoir, Stevens Creek watershed, Santa Clara County	1.4
	Anderson Reservoir, Coyote Creek watershed, Santa Clara County	1.3
Calero Reservoir		1.2
	Soulajule Reservoir, Marin County	1.1
	Del Valle Reservoir, Alameda County	0.9
	Nicasio Reservoir, Marin County	0.8
	Lexington Reservoir, Guadalupe River watershed, Santa Clara County	0.6
	Lake Chabot, Alameda County	0.6
	Lafayette Reservoir, Contra Costa County	0.4
Citations: Table 2-1 is from <i>Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL) Project Staff Report</i> , September 2008, available at: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/		

- 2) What is the standard for safe levels of mercury in drinking water and how does that compare with mercury levels in Stevens Creek Reservoir?

It is highly unlikely that mercury in Stevens Creek Reservoir exceeds safe drinking water levels. Mercury has very low solubility in water. Most mercury is attached to particles, which settle to the bottom of a reservoir. Water treatment plants remove nearly all remaining particles. Safe drinking water levels and monitoring requirements are set by a different agency, the State Department of Public Health. As of 2005¹, the safe drinking water level for mercury in California was 0.002 mg/L (milligrams per liter). The owner and operator of Stevens Creek

¹ This maximum contaminant level is from Table 64431-A (Inorganic Chemicals) of Section 64431, Title 22 of the California Code of Regulations, as of June 3, 2005.

Reservoir, the Santa Clara Valley Water District, would be the best source of data on mercury concentrations in the water.

3) What are the largest contributors of mercury into the Bay?

Legacy mercury from the Gold Rush is by far the largest source of mercury to San Francisco Bay. The sources of mercury entering San Francisco Bay convey mercury originating from mining legacies and contemporary mercury uses. The table below lists these sources and their estimated loads. The sources include net bed erosion, the Central Valley watershed, urban storm water runoff, the Guadalupe River watershed, direct atmospheric deposition, non-urban storm water runoff, and wastewater discharges. San Francisco Bay also loses mercury as sediment is naturally transported to the Pacific Ocean through the Golden Gate (about 1,400 kilograms per year [kg/yr]), mercury evaporates from the Bay's surface (about 190 kg/yr), and dredged material is removed from the Bay and disposed of upland or in the Ocean (about 150 kg/yr, net).

Existing Mercury Loads by Source Category

Source	Existing Mercury Load (kg/yr)
Mining Legacy	
Bed Erosion (net)	460
Central Valley Watershed	440
Guadalupe River Watershed (mining legacy)	92
Contemporary Uses	
Urban Storm Water Runoff	160
Atmospheric Deposition	27
Non-Urban Storm Water Runoff	25
Wastewater (municipal and industrial)	18
Sediment Dredging and Disposal	net loss

More information is available about these loads, and the Water Board's requirements to reduce them, on our website at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/sfbaymercurytml.shtml .

Should you have any additional questions, please do not hesitate to contact Shin-Roei Lee at (510) 622-2376 or SRLee@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

cc: Shin-Roei Lee, Carrie Austin