

Perchlorate in Drinking Water


Last Update: July 10, 2008

Perchlorate is a regulated drinking water contaminant in California, with a maximum contaminant level (MCL) of 6 micrograms per liter ($\mu\text{g/L}$), effective October 18, 2007. The CDPH Drinking Water Program has provided information to public water systems about the implementation of the new MCL and the scheduling of monitoring (see links below).

Perchlorate and its salts are used in solid propellant for rockets, missiles, and fireworks, and elsewhere (e.g., production of matches, flares, pyrotechnics, ordnance, and explosives). Their use can lead to releases of perchlorate into the environment. Perchlorate's interference with iodide uptake by the thyroid gland can decrease production of thyroid hormones, which are needed for prenatal and postnatal growth and development, as well as for normal metabolism and mental function in the adult.

Monitoring, first in 1997 by the Drinking Water Program and then by public water systems, showed perchlorate to be a widespread drinking water contaminant, occurring in several hundred wells, mostly in southern California (see early findings). Perchlorate was also found in the Colorado River, an important source of water for drinking and irrigation, where its presence resulted from contamination from ammonium perchlorate manufacturing facilities in Nevada.

Table 1 presents active and standby sources that had reported detections at or greater than 4 $\mu\text{g/L}$ and greater than 6 $\mu\text{g/L}$, concentrations that correspond to perchlorate's detection limit for purposes of reporting (DLR) and the new MCL, respectively. These findings are helpful in identifying areas in which perchlorate has affected sources drinking water (principally wells), but they should not be interpreted as representative of water being served by public water systems. Consumers interested in finding out more about the quality of their drinking water should refer to their water systems' annual consumer confidence reports (CCRs). Many CCRs for California water systems are available on the US EPA's website.

The data in the table are from sources with more than a single perchlorate finding at any concentration over the past five years. "Sources" do not include pending, inactive, and destroyed or abandoned sources, monitoring wells, agricultural wells; and sources with peak detections below the DLR. Where raw and treated samples or other results indicate more than one sampling point for the same source, they are counted as coming from a single source. All detections, however, are included here (Excel, 1.6MB) . Data are from monitoring results for about 10,600 sources, and should be considered draft (they will change with subsequent updates).

County	Peak detection at or above 4 $\mu\text{g/L}$		Peak detection above 6 $\mu\text{g/L}$		Peak Conc. ($\mu\text{g/L}$)
	No. of Sources	No. of Systems	No. of Sources	No. of Systems	
Los Angeles	108	31	72	21	86
Riverside	61	7	51	6	73
San Bernardino	51	14	32	12	80
Orange	23	11	7	4	11
Tulare	7	5	6	5	24
Santa Clara	7	2	1	1	7
Kern	5	4	4	4	34
Sacramento	5	3	2	2	96
San Diego	5	2	3	1	8
San Joaquin	1	1	1	1	69

Madera	1	1	1	1	7
Ventura	1	1	-	-	4
TOTAL	274	82	180	58	-

CDPH's Correspondence with Water Systems

Memorandum to Water Systems (PDF, New Window)
 Information about adoption of the new MCL.

Implementation Schedule (PDF, New Window)
 Minimum requirements for initial monitoring.

Links for Additional Information

CDPH's Perchlorate History Page ("Early Findings")
 Information about drinking water-related activities that started in 1997.

Office of Environmental Health Hazard Assessment
 OEHHA's 2004 technical support document for its 6-microgram per liter public health goal (PHG). PHGs contribute to the MCL process.

State Water Resources Control Board
 SWRCB's information on perchlorate, with links to regional boards.

Department of Toxic Substances Control
 DTSC's perchlorate information.

US Food and Drug Administration
 FDA's information on perchlorate in food.

US Environmental Protection Agency
 US EPA's federal facilities page for perchlorate, with many links.

Drinking Water Program
 Information on DWP's activities related to the regulation and oversight of public water systems.

Division of Drinking Water & Environmental Management
 DDWEM houses the Drinking Water Program, the Environmental Management Branch, the Sanitation and Radiation Laboratory, and the Environmental Laboratory Accreditation Program.