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CUIMR-G-94-001 C3

Water Testing Guidelines

CIRCULATING COPY

Bottle Water at the Source

Analysis	Frequency (Minimal)
Physical	Once a year
Inorganic Chemical	Once a year
Organic Chemical	Once a year
Microbiological	Once a week
Radiological	Once every 4 years

Community Water System at the Source

Water	Analysis	Frequency
Ground	General Mineral	Every 3 years
	General Physical	Every 3 years
	Inorganic Chemical	Every 3 years
	Organic Chemical	As required
	Radioactivity	Every 4 years
	Microbiological	Every month or week depending upon the service connections
Surface	General Mineral	Every year
	General Physical	As required
	Inorganic Chemical	Every year
	Organic Chemical	Every 3 years
	Radioactivity	Every 4 years
	Microbiological	Every month or week depending upon the service connections

Source Water as an Ingredient Food

Water	Analysis	Frequency
Ground	Mineral	Every 3 years
	Physical	Every 3 years
	Inorganic Chemical	Every 3 years
	Organic Chemical	As required
	Radioactivity	Every 4 years
	Microbiological	A determination of safety of the source followed by monitoring schedule depending upon the product and amount used (at least monthly)

Source Water as an Ingredient Food (Cont.)

Water	Analysis	Frequency
Surface	General Mineral	Every 3 years
	General Physical	Every 3 years
	Inorganic Chemical	Every year
	Organic Chemical	Every 3 years
	Radioactivity	Every 4 years
	Microbiological	A determination of safety of the source followed by monitoring schedule depending upon the product and amount used (at least monthly)

Source Water Used for Food Contact/Cleaning

Water	Analysis	Frequency
Ground	General Mineral	Not required - Must be safe - see chemical
	Physical	Not required, but may be important to firm from an acceptance criteria
	Microbiological	Every 3 years
	Inorganic Chemical	Every 3 years - must be below MCL for arsenic, barium, cadmium, chromium, lead, mercury, nitrate, selenium, silver, fluoride
	Organic Chemical	Every 3 years - must be below MCL for chlorinated hydrocarbons and chlorophenoxys
	Radiological	Every 4 years
Surface	General Mineral	Not required - Must be safe - see chemical
	Physical	Not required, but may be important to firm from an acceptance criteria
	Microbiological	Once a year
	Inorganic Chemical	Every 3 years - must be below MCL for arsenic, barium, cadmium, chromium, lead, mercury, nitrate, selenium, silver, fluoride
	Organic Chemical	As required - must be below MCL for chlorinated hydrocarbons and chlorophenoxys
	Radiological	Every 4 years

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Sea Grant Extension Program Publication

Maximum Contaminant Levels (MCL) - Drinking Water

Primary Standards (Mandatory standards established and enforced by the State of California Department of Health Services)

PARAMETER	UNITS	MCL
Clarity		
Turbidity	NTU	5
Microbiological		
Coliform bacteria	% confirmed positive	5
Organic Chemicals		
Total Trihalomethanes	mg/l	0.1
Benzene	mg/l	0.001
Carbon Tetrachloride	mg/l	0.0005
1,4-Dichlorobenzene	mg/l	0.005
1,2-Dichloroethane	mg/l	0.0005
1,1-Dichloroethylene	mg/l	0.006
1,3-Dichloropropane	mg/l	0.0005
Ethylbenzene	mg/l	0.680
Monochlorobenzene	mg/l	0.030
1,1,2,2-Tetrachloroethane	mg/l	0.001
Tetrachloroethylene	mg/l	0.005
1,1,1-Trichloroethane	mg/l	0.200
1,1,2-Trichloroethane	mg/l	0.032
Trichloroethylene	mg/l	0.005
Vinyl Chloride	mg/l	0.0005
Xylenes	mg/l	1.750
Cis-1,2-Dichloroethylene	mg/l	0.006
Trans-1,2-Dichloroethylene	mg/l	0.01
1,1-Dichloroethane	mg/l	0.005
1,2-Dichloropropane	mg/l	0.005
Trichlorofluoromethane	mg/l	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/l	1.2
Chloroform	mg/l	none
Inorganic Chemicals		
Aluminum	mg/l	1
Arsenic	mg/l	0.05
Barium	mg/l	1
Cadmium	mg/l	0.01
Chromium	mg/l	0.05
Fluoride	mg/l	1.6 (a)
Lead	mg/l	0.05
Mercury	mg/l	0.002
Nitrate	mg/l	45
Selenium	mg/l	0.05
Silver	mg/l	0.05
Radioactivity		
Gross Alpha Activity	pCi/l	15
Gross Beta Activity	pCi/l	50

(a) Based on average maximum daily temperature of 74°F
mg/l = milligrams per liter
pCi/l = pico Curies per liter

Secondary Standards (Non-enforceable guidelines that relate to the taste, odor and appearance of drinking water)

PARAMETER	UNITS	MCL
Color	TON	3
Odor Threshold	Units	15
Chloride	mg/l	250
Copper	mg/l	1
Foaming Agents (MBAS)	mg/l	0.5
Iron	mg/l	0.3
Manganese	mg/l	0.05
Sulfate	mg/l	250
Zinc	mg/l	5
Specific Conductance	μmhos/cm	900
Total Dissolved Solids	mg/l	500

μmhos/cm = micromhos per centimeter

Additional Constituents (Measured by the City of Davis for drinking water)

PARAMETER	UNITS	MCL
pH		none
Hardness (as Calcium Carbonate)	mg/l	none
Sodium	mg/l	none
Calcium	mg/l	none
Potassium	mg/l	none
Magnesium	mg/l	none
Boron	mg/l	none
Nitrite	mg/l	none

Laws and Regulations Governing Water for Food Use

Safe Drinking Water Act (SDWA) (PL93-S23)
Total Coliform Rule (54FR27544-27568)
Surface Water Treatment Requirements (SWTR) (54FR27486-27541)
Code of Federal Regulations Title 21
Code of Federal Regulations Title 40
California Safe Drinking Water Act
California Health & Safety Code (Division 5, Division 21 and Division 22)
California Code of Regulations Title 22, Section 64401 et seq. (Domestic Water Quality and Monitoring Regulations)
California Code of Regulations Title 17

Information on water testing frequencies, laws and regulations provided by James Waddell, Food and Drug Branch, California Department of Health Services. Information on maximum contaminant levels in drinking water provided by Bob Schoech, Water Division, City of Davis.

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