

2022 Annual Water Quality Report

	Unit Measurement	MCL/MRDL	PHG (MCLG)	Surface Water	Ground Water Range	Ground Water Average
Microbiological Contaminants						
1 Total Coliform Bacteria	% of tests positive	5%	(zero)	0.0%	N/D	N/D
2 Turbidity	NTU	TT	N/S	0.02	N/D-1.4	0.42

Radioactive Contaminants (2015)

3 Gross Alpha Activity	pCi/L	15	0	N/D	N/D-2.21	0.94
4 Uranium	pCi/L	20	0.43	N/D	N/D -3.9	0.10

Inorganic Contaminants (SW 2022 - GW 2020)

5 Aluminum	ppm	1	0.6	N/D	N/D	N/D
6 Antimony	ppb	6	20	N/D	N/D	N/D
7 Arsenic	ppb	10	0.004	N/D	N/D-3.0	1.33
8 Asbestos	7 MFL	7	7	N/D	N/D	N/D
9 Barium	ppm	1	2	N/D	N/D-.12	0.07
10 Beryllium	ppb	4	1	N/D	N/D	N/D
11 Cadmium	ppb	5	0.04	N/D	N/D	N/D
12 Chromium (Total)	ppb	50	(100)	N/D	N/D	N/D
13 Copper	ppm	1.3	0.3	N/D	N/D	N/D
14 Cyanide	ppb	150	150	N/D	N/D	N/D
15 Fluoride	ppm	2	1	N/D	N/D	N/D
16 Lead	ppb	15	0.2	N/D	N/D	N/D
17 Mercury (inorganic)	ppb	2	1.2	N/D	N/D	N/D
18 Nickel	ppb	100	12	N/D	N/D	N/D
19 Nitrate(as N)	ppm	10	10	N/D	N/D-5.3	1.3
20 Nitrite(as N)	ppm	1	1	N/D	N/D	N/D
21 Perchlorate	ppb	6	1	N/D	N/D	N/D
22 Selenium	ppb	50	(30)	N/D	N/D	N/D
23 Thallium	ppb	2	0.1	N/D	N/D	N/D

Volatile Organic Contaminants (2022)

24 Benzene	ppb	1	0.15	N/D	N/D	N/D
25 Carbon tetrachloride	ppt	500	100	N/D	N/D	N/D
26 1,2-Dichlorobenzene[o-DCB]	ppb	600	600	N/D	N/D	N/D
27 1,4-Dichlorobenzene[p-DCB]	ppb	5	6	N/D	N/D	N/D
28 1,1-Dichloroethane	ppb	5	3	N/D	N/D	N/D
29 1,2-Dichloroethane	ppt	500	400	N/D	N/D	N/D
30 1,1-Dichloroethylene	ppb	6	10	N/D	N/D	N/D
31 cis-1,2-Dichloroethylene	ppb	6	100	N/D	N/D	N/D
32 trans-1,2-Dichloroethylene	ppb	10	60	N/D	N/D	N/D
33 Dichloromethane	ppb	5	4	N/D	N/D	N/D
34 1,2-Dichloropropane	ppb	5	0.5	N/D	N/D	N/D
35 1,3 Dichloropropane	ppt	500	200	N/D	N/D	N/D
36 Ethylbenzene	ppb	300	300	N/D	N/D	N/D
37 Methyl-tert-butyl ether	ppb	13	13	N/D	N/D	N/D
38 Monochlorobenzene	ppb	70	70	N/D	N/D	N/D
39 Styrene	ppb	100	0.5	N/D	N/D	N/D
40 1,1,2,2-Tetrachlorethane	ppb	1	0.1	N/D	N/D	N/D
41 Tetrachloroethene [PCE]	ppb	5	0.06	N/D	N/D-5.4	1.3
42 1,2,4-Trichlorobenzene	ppb	5	5	N/D	N/D	N/D
43 1,1,1-Trichloroethane	ppb	200	1000	N/D	N/D	N/D
44 1,1,2-Trichloroethane	ppb	5	0.3	N/D	N/D	N/D
45 Trichloroethene [TCE]	ppb	5	1.7	N/D	N/D	N/D
46 Toluene	ppb	150	150	N/D	N/D	N/D
47 Trichlorofluoromethane	ppb	150	1300	N/D	N/D	N/D
48 1,1,2-Trichloro-1,2,2-trifluoroethane	ppm	1.2	4	N/D	N/D	N/D
49 Vinyl Chloride	ppt	500	50	N/D	N/D	N/D
50 Xylenes	ppm	1.75	1.8	N/D	N/D	N/D

Disinfection Byproducts (Distribution System) (2022)

				Avg	Range
51 TTHM [Total Trihalomethanes] (Avg) (Range)	ppb	80	N/S	17	N/D-67
52 Haloacetic Acids (Avg) (Range)	ppb	60	N/S	8	N/D - 24
53 Chlorine (Avg) (Range)	ppm	4 [MRDL]	4 [MRDL]	0.87	.26 - 1.45
54 Total Organic Carbon (TOC)	ppm	TT	N/S	0.9	N/A

Secondary Drinking Water Standards (SW2022-GW2020)

55 Aluminum	ppb	200	N/S	N/D	N/D	N/D
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56 Color	units	15 units	N/S	5	N/D	N/D
57 Copper	ppm	1	N/S	N/D	N/D	N/D
58 Foaming Agents [MBAS]	ppb	500	N/S	N/D	N/D	N/D
59 Iron	ppb	300	N/S	N/D	N/D	N/D
60 Manganese	ppb	50	N/S	N/D	N/D	N/D
61 Methyl-tert-butyl ether [MTBE]	ppb	5	N/S	N/D	N/D	N/D
62 Odor-Threshold	TON (units)	3	N/S	1	N/D - 2.2	0.55
63 Silver	ppb	100	N/S	N/D	N/D	N/D
64 Thiobencarb	ppb	1	N/S	N/D	N/D	N/D
65 Turbidity	units	5 units	N/S	0.02	N/D-1.4	0.42
66 Zinc	ppm	5	N/S	N/D	N/D	N/D
67 Total Dissolved Solids	ppm	1000	N/S	60	140-310	205
68 Specific Conductance	micromhos	1600	N/S	91	140-460	236
69 Chloride	ppm	500	N/S	3.4	4.1-33	12.0
70 Sulfate	ppm	500	N/S	3.1	4.4-17	9.0

Synthetic Organic Contaminants including Pesticides and Herbicides (SW2022-GW2020)

71 2,4-D	ppb	70	20	N/D	N/D	N/D
72 2,4,5-TP (Silvex)	ppb	50	3	N/D	N/D	N/D
73 Acrylamide	TT	TT	0	N/D	N/D	N/D
74 Alachlor	ppb	2	4	N/D	N/D	N/D
75 Atrazine	ppb	1	0.15	N/D	N/D	N/D
76 Bentazon	ppb	18	200	N/D	N/D	N/D
77 Benzo(a)pyrene [PAH]	ppt	200	7	N/D	N/D	N/D
78 Carbofuran	ppb	18	0.7	N/D	N/D	N/D
79 Chlordane	ppt	100	30	N/D	N/D	N/D
80 Dalapon	ppb	200	790	N/D	N/D	N/D
81 Di(2-ethylhexyl) Adipate	ppb	400	200	N/D	N/D	N/D
82 Di(2-ethylhexyl) phthalate	ppb	4	12	N/D	N/D	N/D
83 Dibromochloropropane [DBCP]	ppt	200	1.7	N/D	N/D	N/D
84 Dinoseb	ppb	7	14	N/D	N/D	N/D
85 Dioxane [2,3,7,8-TCDD]	ppq	30	0.05	N/D	N/D	N/D
86 Diquat	ppb	20	6	N/D	N/D	N/D
87 Endothall	ppb	100	94	N/D	N/D	N/D
88 Endrin	ppb	2	0.3	N/D	N/D	N/D
89 Ethylene Dibromide [EDB]	ppt	50	10	N/D	N/D	N/D
90 Glyphosate	ppb	700	900	N/D	N/D	N/D
91 Heptachlor	ppt	10	8	N/D	N/D	N/D
92 Heptachlor Epoxide	ppt	10	6	N/D	N/D	N/D
93 Hexachlorobenzene	ppb	1	0.03	N/D	N/D	N/D
94 Hexachlorocyclopentadiene	ppb	50	2	N/D	N/D	N/D
95 Lindane	ppt	200	32	N/D	N/D	N/D
96 Methoxychlor	ppb	30	0.09	N/D	N/D	N/D
97 Molinate [Ordram]	ppb	20	1	N/D	N/D	N/D
98 Oxamyl [Vydate]	ppb	50	26	N/D	N/D	N/D
99 PCBs [Polychlorinated Biphenyls]	ppt	500	90	N/D	N/D	N/D
100 Pentachlorophenol	ppb	1	0.3	N/D	N/D	N/D
101 Picloram	ppb	500	166	N/D	N/D	N/D
102 Simazine	ppb	4	4	N/D	N/D	N/D
103 Thiobencarb	ppb	70	70	N/D	N/D	N/D
104 Toxaphene	ppb	3	0.03	N/D	N/D	N/D
105 1,2,3 - Trichloropropane	ppb	0.005	0.0007	N/D	N/D	N/D
106 Aldrin	ppb	N/S	N/S	N/D	N/D	N/D
107 Aldicarb	ppb	N/S	N/S	N/D	N/D	N/D
108 Aldicarb Sulfone	ppb	N/S	N/S	N/D	N/D	N/D
109 Aldicarb Sulfoxide	ppb	N/S	N/S	N/D	N/D	N/D
110 Bis(2-ethylhexyl) adipate	ppb	N/S	N/S	N/D	N/D	N/D
111 Bis(2-ethylhexyl) phthalate	ppb	N/S	N/S	N/D	N/D	N/D
112 Bromacil	ppb	N/S	N/S	N/D	N/D	N/D
113 Butachlor	ppb	N/S	N/S	N/D	N/D	N/D
114 Carbaryl	ppb	N/S	N/S	N/D	N/D	N/D
115 Diazinon	ppb	N/S	N/S	N/D	N/D	N/D
116 Dimethoate	ppb	N/S	N/S	N/D	N/D	N/D
117 Methomyl	ppb	N/S	N/S	N/D	N/D	N/D
118 Metolachlor	ppb	N/S	N/S	N/D	N/D	N/D
119 Metribuzin	ppb	N/S	N/S	N/D	N/D	N/D
120 Propachlor	ppb	N/S	N/S	N/D	N/D	N/D
121 3-Hydroxycarbofuran	ppb	N/S	N/S	N/D	N/D	N/D

Unregulated Constituents of Interest (SW2022-GW2020)

122	Sodium	ppm	N/S	N/S	3.2	7.2-32	14
123	Alkalinity	ppm	N/S	N/S	29	24-170	55
124	Calcium	ppm	N/S	N/S	7.4	6.6-46	26
125	Hardness	ppm	N/S	N/S	29	29-220	97
126	Magnesium	ppm	N/S	N/S	2.5	2.2-25	13
127	NDMA	ppt	N/S	N/S	N/A	N/D	N/D
Lead and Copper (Sampled in 2020)			AL	PHG	90th Percentile	Number of sites exceeding AL	
128	Lead	ppb	15	0.2	N/D	1	
129	Copper	ppm	1.3	0.3	0.17	Zero	

LEGEND:

N/D = Analyzed; Non Detected

NTU = Nephelometric Turbidity Unit

PPM = Parts Per Million

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MRDL = Maximum Residual Disinfection Level

PCi/I = Picocuries per Liter

PHG = Public Health Goal

N/A = Not Applicable

N/S = No Standard

TT = Treatment Technique

AL = Alert Level

***Total Trihalomethanes =**

Sum of results for Chloroform, Bromoform,
Dibromochloromethane and Bromochloromethane

Notes:

1. Surface water samples collected in 2022.
2. Groundwater samples collected in 2022, except when indicated
3. Groundwater nitrates sampled quarterly.
4. Groundwater samples for NDMA, Pechlorate, and VOC's are collected quarterly.

For additional water quality data, contact:

Carmichael Water District at 916-483-2452