

2019 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	.10-.29	0.17
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 2019 - GW 2017)						
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	N/D
8 Asbestos	7 MFL	7	7	N/D	N/D	N/D
9 Barium	ppm	1	2	N/D	N/D-.072	0.04
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	.44-1.9	1.0
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 (2019)						
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 Dichloropropene	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	200	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 Tetrachloroethylene[PCE]	ppb	5	0.06	N/D	N/D-3.8	1.6
42 1,2,4-Trichlorbenzene	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 Trichloroethylene[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	700	N/D	N/D	N/D
48 1,1,2-Trichloro-1,2,2-trifluoroethane	ppb	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) (2019)				Avg	Range	
51 TTHM [Total Trihalomethanes] (Avg) (Range)	ppb	80	N/S	16	1 - 32.0	
52 Haloacetic Acids (Avg) (Range)	ppb	60	N/S	10	ND - 18.0	
53 Chlorine (Avg) (Range)	ppm	4 [MRDL]	4 [MRDL]	0.83	.51 - 1.08	
54 Total Organic Carbon (TOC)	ppm	TT	N/S	0.82	N/A N/A	
Secondary Drinking Water Standards (SW 2019 GW 2017)						
55 Aluminum	ppb	200	N/S	N/D	N/D	N/D

56 Color	units	15 units	N/S	N/D	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	N/D	N/D	N/D
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	0.020	.10-.29	0.17
66 Zinc	ppm	5	N/S	N/D	N/D	N/D
67 Total Dissolved Solids	ppm	1000	N/S	54	120-180	157
68 Specific Conductance	micromhos	1600	N/S	81	140-260	207
69 Chloride	ppm	500	N/S	2.6	3.8-6.5	5.0
70 Sulfate	ppm	500	N/S	2.1	4.4-8.0	6.8

Synthetic Organic Contaminants including Pesticides and Herbicides (2017)

71 DBCP	ppt	200	1.7	N/D	N/D	N/D
72 EDB	ppt	50	10	N/D	N/D	N/D
73 Aldrin	ppb	N/S	N/S	N/D	N/D	N/D
74 Chlordane	ppt	100	30	N/D	N/D	N/D
75 Chorothalonil	ppb	N/S	5	N/D	N/D	N/D
76 Dieldrin	ppb	N/S	0.02	N/D	N/D	N/D
77 Endrin	ppb	2	2	N/D	N/D	N/D
78 Heptachlor	ppt	10	8	N/D	N/D	N/D
79 Heptachlor Epoxide	ppt	10	6	N/D	N/D	N/D
80 Hexachlobenzene	ppb	1	0.03	N/D	N/D	N/D
81 Hexachlorocyclopentadiene	ppb	50	50	N/D	N/D	N/D
82 Lindane	ppt	200	32	N/D	N/D	N/D
83 Methoxychlor	ppb	30	0.09	N/D	N/D	N/D
84 PCB Arochlor Screen	ppt	500	90	N/D	N/D	N/D
85 Toxaphene	ppb	3	0.03	N/D	N/D	N/D
86 Trifluralin	ppb	N/S	N/S	N/D	N/D	N/D
87 2,4,5-T (2C)	ppb	N/S	N/S	N/D	N/D	N/D
88 2,4,5-TP (Silvex) (2C)	ppb	50	25	N/D	N/D	N/D
89 2,4-D (2C)	ppb	70	20	N/D	N/D	N/D
90 Bentazon	ppb	18	200	N/D	N/D	N/D
91 Dalapon	ppb	200	200	N/D	N/D	N/D
92 Dicamba	ppb	N/S	N/S	N/D	N/D	N/D
93 Dinoseb	ppb	7	14	N/D	N/D	N/D
94 Pentachlorophenol	ppb	1	1	N/D	N/D	N/D
95 Picloram	ppb	500	500	N/D	N/D	N/D
96 N-Nitrosodiethylamine (NDEA)	ppt	N/S	10	N/D	N/D	N/D
97 N-Nitrosodimethylamine (NDMA)	ppt	N/S	10	N/D	N/D	N/D
98 N-Nitrosodi-n-butylamine (NDBA)	ppt	N/S	10	N/D	N/D	N/D
99 N-Nitrosodi-n-propylamine (NDPA)	ppt	N/S	10	N/D	N/D	N/D
100 N-Nitrosopyrrolidine (NMEA)	ppt	N/S	10	N/D	N/D	N/D
101 N-Nitrosopyrrolidine (NPYR)	ppt	N/S	10	N/D	N/D	N/D
102 Alachlor	ppb	2	4	N/D	N/D	N/D
103 Atrazine	ppb	1	0.15	N/D	N/D	N/D
104 Benzo(a)pyrene	ppt	200	7	N/D	N/D	N/D
105 Bis(2-ethylhexyl) adipate	ppb	N/S	N/S	N/D	N/D	N/D
106 Bis(2-ethylhexyl) phthalate	ppb	N/S	N/S	N/D	N/D	N/D
107 Bromcil	ppb	N/S	N/S	N/D	N/D	N/D
108 Butachlor	ppb	N/S	N/S	N/D	N/D	N/D
109 Diazinon	ppb	N/S	N/S	N/D	N/D	N/D
110 Dimethoate	ppb	N/S	N/S	N/D	N/D	N/D
111 Metolachlor	ppb	N/S	N/S	N/D	N/D	N/D
112 Metribuzin	ppb	N/S	N/S	N/D	N/D	N/D
113 Molinate	ppb	20	1	N/D	N/D	N/D
114 Propachlor	ppb	N/S	N/S	N/D	N/D	N/D
115 Simazine	ppb	4	4	N/D	N/D	N/D
116 Thiobencarb	ppb	70	70	N/D	N/D	N/D
117 3-Hydroxycarbofuran	ppb	N/S	N/S	N/D	N/D	N/D
118 Aldicarb	ppb	N/S	N/S	N/D	N/D	N/D
119 Aldicarb Sulfone	ppb	N/S	N/S	N/D	N/D	N/D
120 Aldicarb Sulfoxide	ppb	N/S	N/S	N/D	N/D	N/D
121 Carbaryl	ppb	N/S	N/S	N/D	N/D	N/D

122	Carbofuran	ppb	18	1.7	N/D	N/D	N/D
123	Methomyl	ppb	N/S	N/S	N/D	N/D	N/D
124	Oxamyl	ppb	50	26	N/D	N/D	N/D
125	Glyphosate	ppb	700	900	N/D	N/D	N/D
126	Endothall	ppb	100	580	N/D	N/D	N/D
127	Diquat	ppb	20	15	N/D	N/D	N/D
128	1,4 Dioxane	ppb	N/S	1	N/D	N/D	N/D
129	Dioxane [2,3,7,8-TCDD]	ppq	30	0.05	N/D	N/D	N/D
130	1,2,3 - Trichloropropane	ppb	0.005	0.0007	N/D	N/D	N/D

Unregulated Constituents of Interest (SW 2019 - GW 2017)

131	Sodium	ppm	N/S	N/S	6.0	6.9-10	8.6
132	Alkalinity	ppm	N/S	N/S	32	59-110	87
133	Calcium	ppm	N/S	N/S	6.5	11.0-20	16.3
134	Hardness	ppm	N/S	N/S	26	54-100	82
135	Magnesium	ppm	N/S	N/S	2.4	6.7-13	10.2
136	NDMA	ppt	N/S	N/S	N/A	N/D	N/D
137	Potassium	ppm	N/S	N/S	N/D	2.0-3.0	2.7

Lead and Copper (Sampled in 2017)

138	Lead	ppb	15	0.2	N/D	Zero
139	Copper	ppm	1.3	0.17	0.18	Zero

Unregulated Contaminants - Cyanotoxin (Sampled in 2018)

140	Total Microcystin	ppb	N/S	N/S	N/D	N/R
141	Anatoxin-a	ppb	N/S	N/S	N/D	N/R
142	Cylindrospermopsin	ppb	N/S	N/S	N/D	N/R

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/l = 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 2019.
2. Groundwater samples collected in 2017, 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 483-2452