

Supplementary Information

Table S1. Water quality guidelines for various contaminants of emerging concern.

	Compound Name	Water quality guidelines				
		Drinking water EPA MCL - Enforcable	Secondary EPA MCL - Nonenforcable	Recommended: EPA, State, WHO, country etc. - Nonenforcable	Water Reuse for Irrigation MCL	Water Reuse for Irrigation Arizona MCL
1	Acesulfame [ng L ⁻¹]	-	-	-	-	-
2	Atenolol [ng L ⁻¹]	-	-	25	-	-
3	Benzotriazole [ng L ⁻¹]	-	-	-	-	-
4	Bisphenol A [ng L ⁻¹]	-	-	-	-	-
5	Caffeine [ng L ⁻¹]	-	-	0.35	-	-
6	Carbamazepine [ng L ⁻¹]	-	-	1000	-	-
7	DEET [ng L ⁻¹]	-	-	2500	-	-
8	Dexamethasone [ng L ⁻¹]	-	-	-	-	-
9	Diclofenac [ng L ⁻¹]	-	-	18	-	-
10	Diphenhydramine [ng L ⁻¹]	-	-	-	-	-
11	Diltiazem [ng L ⁻¹]	-	-	-	-	-
12	Fluoxetine [ng L ⁻¹]	-	-	100	-	-
13	Gemfibrozil [ng L ⁻¹]	-	-	600	-	-
14	Hydrochlorothiazide [ng L ⁻¹]	-	-	12.5	-	-
15	Hydrocortisone [ng L ⁻¹]	-	-	-	-	-
16	Ibuprofen [ng L ⁻¹]	-	-	4000	-	-
17	Naproxen [ng L ⁻¹]	-	-	2200	-	-
18	PFOA [ng L ⁻¹]	70	-	-	-	-
19	PFOS [ng L ⁻¹]	70	-	-	-	-
20	Prednisone [ng L ⁻¹]	-	-	-	-	-
21	Primidone [ng L ⁻¹]	-	-	-	-	-
22	Propranolol [ng L ⁻¹]	-	-	400	-	-
23	Propylparaben [ng L ⁻¹]	-	-	-	-	-
24	Simazine [ng L ⁻¹]	4	-	20	-	-
25	Sucralose [ng L ⁻¹]	-	-	-	-	-
26	Sulfamethoxazole [ng L ⁻¹]	-	-	350	-	-
27	TCPP [ng L ⁻¹]	-	-	-	-	-
28	Triclocarban [ng L ⁻¹]	-	-	-	-	-
29	Triclosan [ng L ⁻¹]	-	-	0.35	-	-
30	Trimethoprim [ng L ⁻¹]	-	-	700	-	-

Table S2. Water quality standards for various metals.

	Compound Name	Water quality guidelines				
		Drinking water EPA MCL - Enforcable	Secondary EPA MCL - Nonenforcable	Recommended public health goal: EPA, State, WHO, country etc. - Nonenforcable	Water Reuse for Irrigation EPA MCL	Water Reuse for Irrigation Arizona MCL
1	Beryllium [$\mu\text{g L}^{-1}$]	4	-	4	100	-
2	Aluminium [$\mu\text{g L}^{-1}$]	-	50-200	-	5000	-
3	Vanadium [$\mu\text{g L}^{-1}$]	-	-	15	100	-
4	Chromium [$\mu\text{g L}^{-1}$]	100	-	100	100	1000
5	Manganese [$\mu\text{g L}^{-1}$]	-	50	-	200	10000
6	Iron [$\mu\text{g L}^{-1}$]	-	300	-	5000	-
7	Cobalt [$\mu\text{g L}^{-1}$]	-	-	40	100	-
8	Nickel [$\mu\text{g L}^{-1}$]	-	-	100	200	-
9	Copper [$\mu\text{g L}^{-1}$]	1300	-	1300	200	5000
10	Zinc [$\mu\text{g L}^{-1}$]	-	5000	-	2000	10000
11	Arsenic [$\mu\text{g L}^{-1}$]	10	-	-	100	2000
12	Selenium [$\mu\text{g L}^{-1}$]	50	-	50	20	20
13	Molybdenum [$\mu\text{g L}^{-1}$]	-	-	70	10	-
14	Silver [$\mu\text{g L}^{-1}$]	-	100	-	0.1-500	-
15	Cadmium [$\mu\text{g L}^{-1}$]	5	-	5	10	50
16	Tin [$\mu\text{g L}^{-1}$]	-	-	-	-	-
17	Antimony [$\mu\text{g L}^{-1}$]	6	-	6	-	-
18	Barium [$\mu\text{g L}^{-1}$]	2000	-	2000	-	-
19	Thallium [$\mu\text{g L}^{-1}$]	2	-	0.5	-	-
20	Lead [$\mu\text{g L}^{-1}$]	15	-	-	5000	10000
21	Uranium [$\mu\text{g L}^{-1}$]	30	-	-	-	-

Table S3. Water quality characteristics for various parameters.

	Compound Name	Water quality guidelines				
		Drinking water EPA MCL - Enforcable	Secondary EPA MCL - Nonenforcable	Recommended public health goal: EPA, State, WHO, country etc. - Nonenforcable	Water Reuse for Irrigation EPA MCL	Water Reuse for Irrigation Arizona MCL
1	TOC [mg L ⁻¹]	-	-	-	-	-
2	EC (TDS) [mg L ⁻¹]	-	-	-	450(a)	-
3	Phosphate [mg L ⁻¹]	-	-	0.1	-	-
4	Nitrate [mg-N L ⁻¹]	10	-	10	5(a)	-
5	Bromide [mg L ⁻¹]	-	-	-	-	-
6	Sulfate [mg L ⁻¹]	-	250	-	-	-
7	Nitrite [mg-N L ⁻¹]	1	-	1	-	-
8	Chloride [mg L ⁻¹]	-	250	-	70a – 177 b	-
9	Flouride [mg L ⁻¹]	4	-	4	1	-
10	Calcium [mg L ⁻¹]	-	-	-	-	-
11	Magnesium [mg L ⁻¹]	-	-	-	-	-
12	Potassium [mg L ⁻¹]	-	-	-	-	-
13	Ammonium [mg L ⁻¹]	-	-	-	-	-
14	Sodium [mg L ⁻¹]	-	-	20 - 270	115	-
15	Lithium [mg L ⁻¹]	-	-	-	2.5	-

a. For use as reclaimed water

b. For use in irrigation

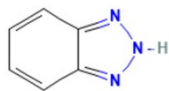
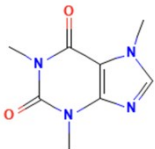
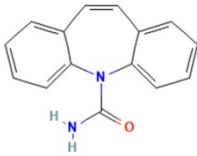
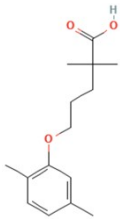
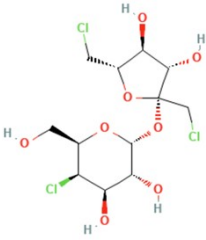
Table S4. List of water quality characteristics that were quantified in this study using various analytical methods.

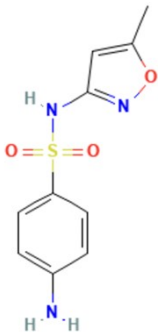
	Analyte/Parameter		Analyte/Parameter		Analyte/Parameter
1	pH	22	Mn: Manganese	43	Diphenhydramine
2	Electroconductivity	23	Fe: Iron	44	Fluoxetine
3	Turbidity	24	Co: Cobalt	45	Hydrochlorothiazide
4	Total Organic Carbon	25	Ni: Nickel	46	Hydrocortisone
5	E. Coliform	26	Cu: Copper	47	Primidone
6	F: Fluoride	27	Zn: Zinc	48	Propranolol
7	Cl: Chloride	28	As: Arsenic	49	Prednisone
8	NO ₂ : Nitrite	29	Se: Selenium	50	Benzotriazole
9	SO ₄ : Sulfate	30	Mo: Molybdenum	51	Caffeine
10	Br: Bromide	31	Ag: Silver	52	Carbamazepine
11	NO ₃ : Nitrate	32	Cd: Cadmium	53	Gemfibrozil
12	Li: Lithium	33	Sn: Tin	54	PFBA
13	Na: Sodium	34	Sb: Antimony	55	PFHxA
14	NH ₄ : Ammonium	35	Ba: Barium	56	PFHxS
15	K: Potassium	36	Tl: Thallium	57	PFOA
16	Mg: Magnesium	37	Pb: Lead	58	PFOS
17	Ca: Calcium	38	U: Uranium	59	Propylparaben
18	Be: Beryllium	39	Atenolol	60	Sucralose
19	Al: Aluminum	40	Atrazine	61	Sulfamethoxazole
20	V: Vanadium	41	Clofibric acid	62	Trimethoprim
21	Cr: Chromium	42	Dexamethasone		

Table S5. List of CECs that were quantified in this study using LC-QQQ-MS analysis and their limits of quantification (LOQ).

Contaminant of Emerging Concern	Limit of Quantification (ng/L)
Atenolol	247.6
Atrazine	2.1
Clofibric acid	19.5
Dexamethasone	16.7
Diphenhydramine	4.1
Fluoxetine	9.6
Hydrochlorothiazide	100.6
Hydrocortisone	29.5
Primidone	17.8
Propranolol	6.8
Prednisone	6.0
Benzotriazole	141.9
Caffeine	3.6
Carbamazepine	4.0
Gemfibrozil	8.0
PFBA	744.0
PFHxA	274.6
PFHxS	13.3
PFOA	36.6
PFOS	6.6
Propylparaben	20.4
Sucralose	14.8
Sulfamethoxazole	22.3
Trimethoprim	26.1

Table S6. Characteristics of CEC found in Tuba City SWE.

Contaminant	Molecule	Molecular Weight	Molecular Shape	pKa	Free Energy (Hydrophobicity)
Benzotriazole	$C_6H_5N_3$	119.12		8.2	+
Caffeine	$C_8H_{10}N_4O_2$	194.19		10.4	-
Carbamezapine	$C_{15}H_{12}N_2O$	236.27		13.9	+
Gemfibrozil	$C_{15}H_{22}O_3$	250.33		4.7	+
Sucralose	$C_{12}H_{19}Cl_3O_8$	397.64		NA	-

Sulfamethoxazole	$C_{10}H_{11}N_3O_3S$	253.28		5.6	-