

Comparing Recycled Water to Local Groundwater



Regional San is undertaking a significant effort – called the EchoWater Project – to treat the region’s wastewater to a whole new level, producing disinfected tertiary recycled water suitable for un-restricted irrigation and other non-potable uses. As a result of the EchoWater Project, Regional San is now able to expand the use recycled water to benefit the Sacramento Region and implement Harvest Water, a program that will provide recycled water for agricultural irrigation and habitat uses in southern Sacramento County. The use of recycled water in this area will reduce groundwater pumping and increase the amount of groundwater stored in the local groundwater aquifer.

Regional San compared its recycled water quality with current drinking water quality standards, agricultural thresholds, and local groundwater sources. The results indicate that Regional San’s recycled water supply is high quality and water quality parameters are significantly below the levels considered safe for drinking water and agricultural irrigation as tabulated on the next page.

SUCCESSFUL RECYCLED WATER IRRIGATION IN CALIFORNIA

Recycled water use, as will be implemented under the Harvest Water program, is proven in California with a long and successful track record. A number of other wastewater treatment agencies in California produce recycled water for agricultural irrigation of crops such as corn, almonds, grapes, permanent pasture, cotton, Sudan grass, oats, barley, alfalfa, sorghum, wheat, seed beans and other crops. In 2020, wastewater agencies in California reported distributing more than 194,000 acre-feet of recycled water for agricultural reuse across the state, including but not limited to the following areas:

Modesto ♦ Bakersfield ♦ Monterey County ♦ Visalia ♦ Santa Rosa ♦ Lancaster

Additional case studies and research on agricultural reuse are available on the WateReuse Association website. (<https://watereuse.org/educate/water-reuse-101/agricultural-reuse/>).



For more information about Harvest Water, please visit regionalsan.com/harvestwater or contact Regional San at HarvestWater@sacsewer.com or (916) 876-3322.

COMPARING HARVEST WATER RECYCLED WATER AND LOCAL GROUNDWATER

Parameter	Units	Upper Limit for Drinking Water	Regional San Recycled Water ¹	Local Groundwater Range ³	Local Groundwater Average ³
Ammonia	mg-N/L	1.8	<0.2 (MDL)	ND	ND
Nitrate	mg-N/L	10	8.1 – 9.3	ND – 6.8	2.3
Salinity (TDS)	mg/L	1000	470 – 560	210-610	370
Arsenic	ug/L	10	0.8 – 1.2	2 – 45	12
Boron	mg/L	1	0.30 – 0.34	ND – 0.04	0.03
Cadmium	ug/L	5	<0.1 (MDL)	ND	ND
Calcium	mg/L	NA	38 – 41	6.4 – 77	41.3
Chloride	mg/L	500	87 – 110	5 – 230	70
Copper	ug/L	1300	1.4 – 1.9	ND	ND
Lead	ug/L	15	<0.1 (MDL)	ND – 0.3	0.2
Magnesium	mg/L	NA	11 – 12	2.6 – 44.7	22
Nickel	ug/L	100	2.3 – 3.1	ND	ND
Potassium	mg/L	NA	14 – 15	ND – 3.7	2.1
Selenium	ug/L	50	<1.0 (MDL)	ND – 5.9	3.2
Sodium	mg/L	NA	83 – 120	15 - 140	53
Total Alkalinity	mg/L as CaCO ₃	NA	110 – 120	90 – 330	200
Total Coliform	MPN/100 mL	2.2 ⁵	<1.8 (MDL)	NT	NT
Total Phosphorus	mg-P/L	NA	1-2 ²	NT	NT
Turbidity	NTU	5 ⁵	<2	NT	NT
TSS	mg/L	NA	<2.4 (MDL) ⁴	NT	NT
pH	Units	NA	7-7.4	NT	NT
Zinc	ug/L	30	18 – 36	ND – 70	42

Notes:

1. Data from water quality sampling of final effluent at the SRWTP during July 2021.
2. Biological Nutrient Removal process at the SRWTP was undergoing optimization during the July 2021 sampling event. Data represents anticipated value once fully operational.
3. Data from the State of California's Groundwater Ambient Monitoring and Assessment (GAMA) Program Database. Data represents average water quality data available from 9 existing shallow aquifer wells (<300 feet) in and adjacent to the Harvest Water service area, with multiple samples from each between 2010 and 2021.
(https://www.waterboards.ca.gov/water_issues/programs/gama/)
4. Tertiary Treatment Facility (filtration) is currently under construction and is expected to be operational in 2023. Data based on pilot testing effluent water quality results for five filtration and disinfection combinations per Advanced Treatment Technology Pilot Project Report, Appendix M (July 2013).
5. The SRWTP will produce disinfected tertiary recycled water in compliance with the Uniform Statewide Recycling Criteria contained in the California Code of Regulations, Title 22, which includes a total coliform limit of 2.2 MPN/100 mL as a 7-day median and a turbidity limit of 2 NTU as a daily average.

Key:

MDL = Method Detection Limit

NA = Not Applicable

ND = Non-Detect

NT = Not Tested

TDS = Total Dissolved Solids

TSS = Total Suspended Solids