

2017 Drinking Water Quality Report Update

August 2, 2018
BPU Meeting



OUR FUTURE IN EVERY DRÖP

Compliance with the Safe Drinking Water Act (SDWA)

Federal Rules – Public drinking water quality:

- Total Coliform Rule
- Disinfectants/Disinfection By-Products Rule
- Lead and Copper Rule
- Groundwater Rule

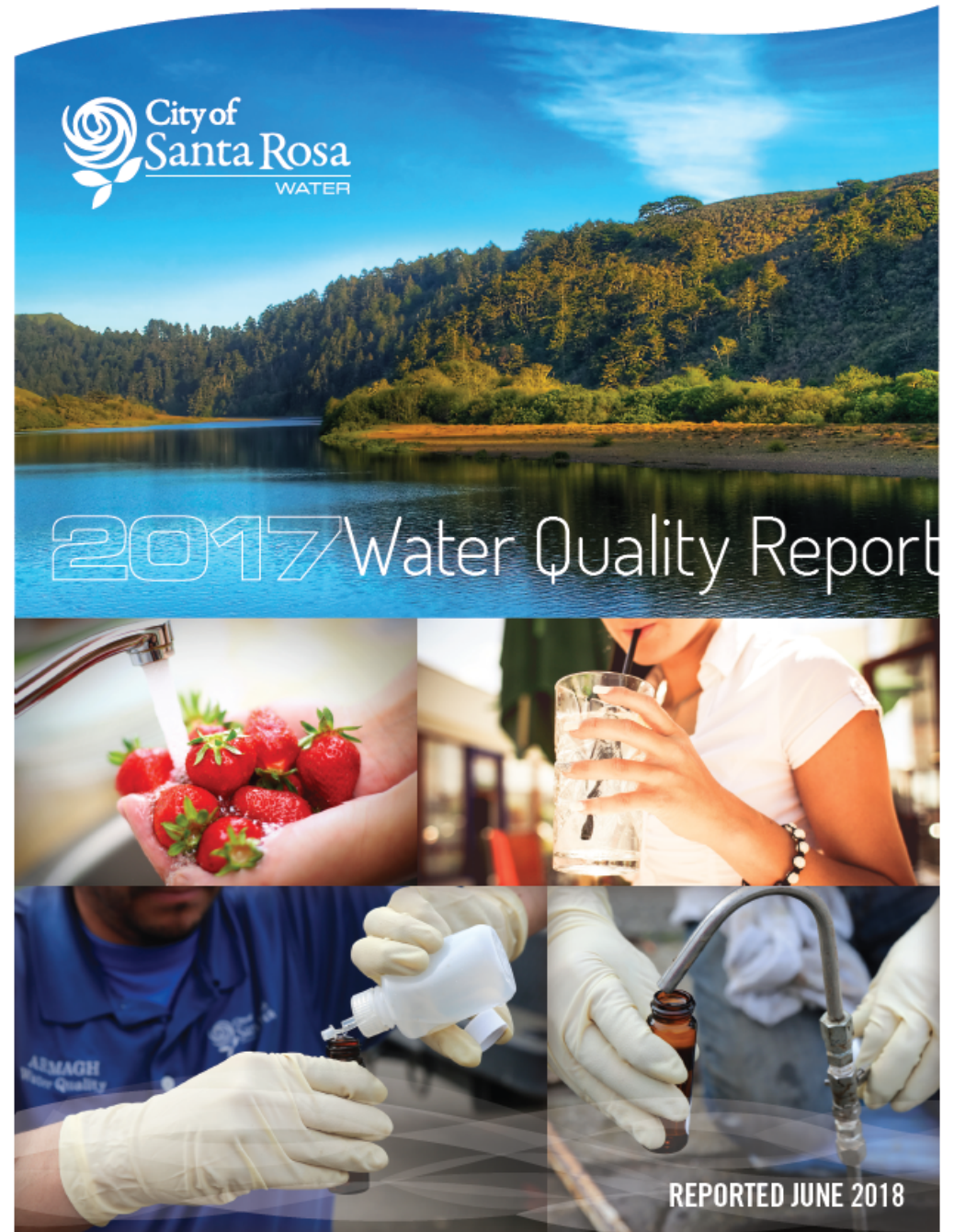
State Regulations - Cross Connection Control

Annual Water Quality Report provides:

- Water system information
- Testing Information
- Definitions
- How to Read Section
- Water Quality Results
- Fire Update
- Exceedances



OUR FUTURE IN EVERY DROP



Water Quality Report Distribution

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OUR FUTURE IN EVERY DRÖP



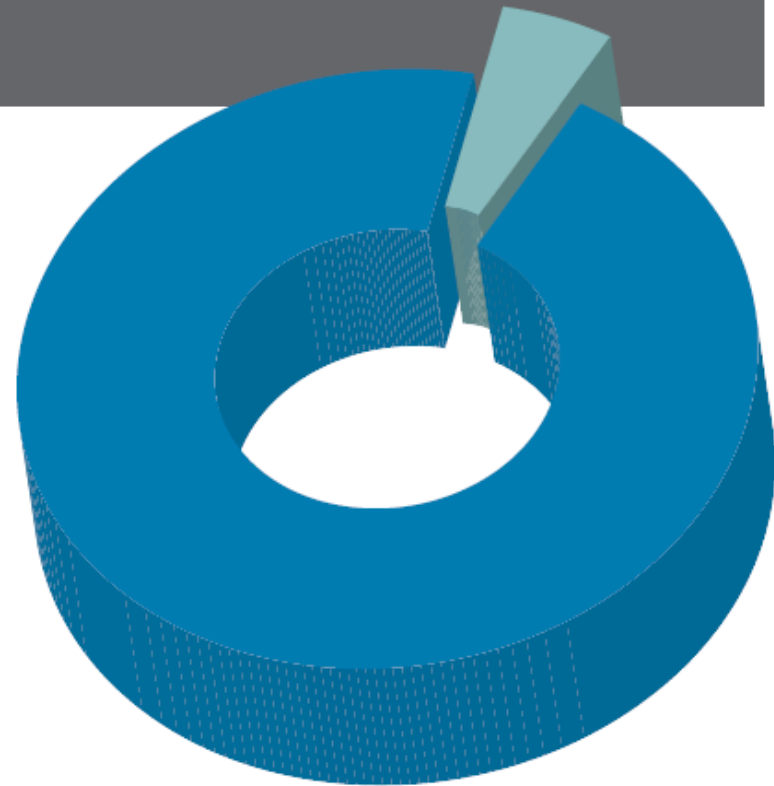
OUR FUTURE IN EVERY DRÖP

Water Supply Portfolio

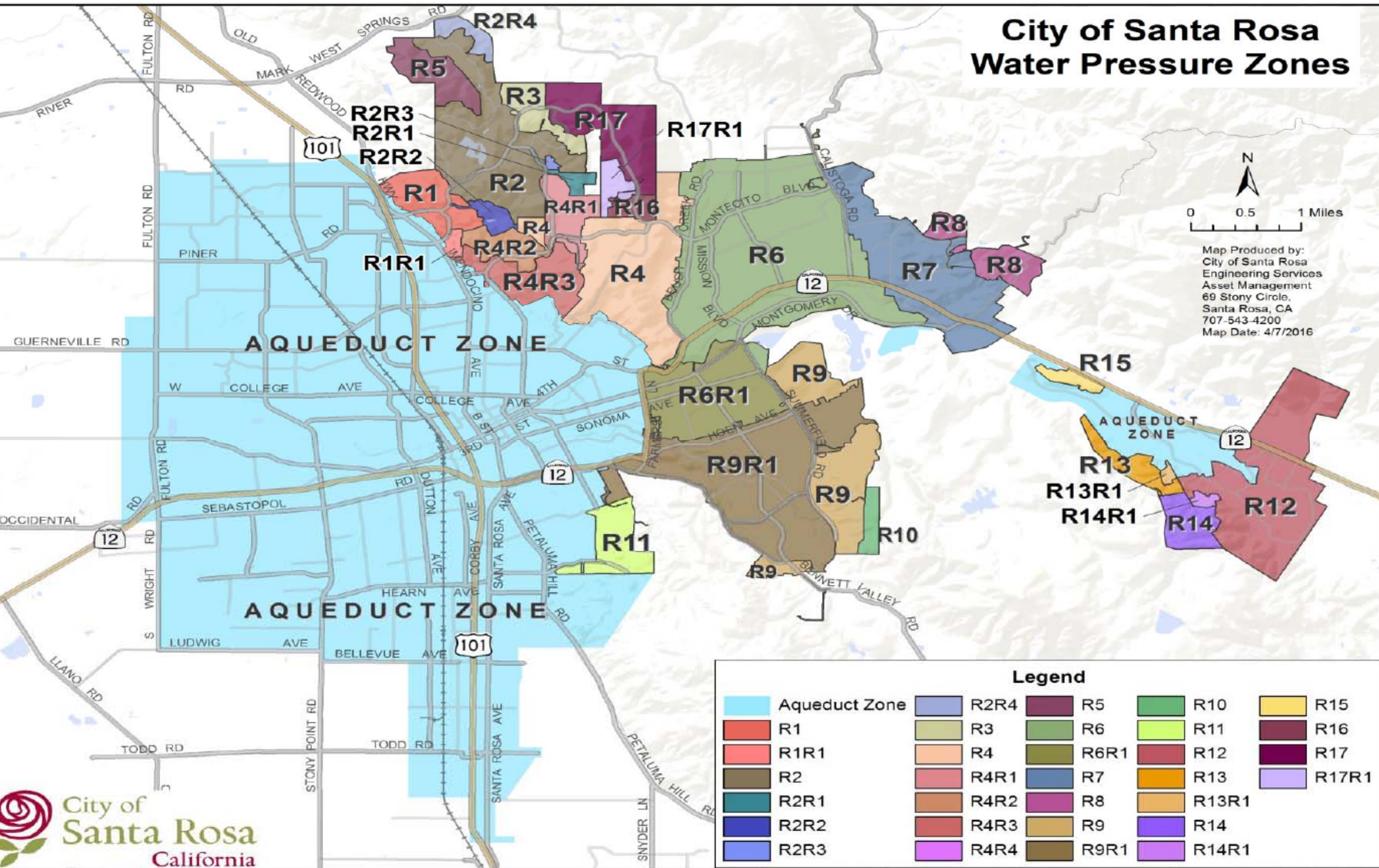
As a Santa Rosa Water customer you are connected to Santa Rosa's public water system. The water supplied to homes and businesses is a combination of surface water from the Russian River and local groundwater.

95% Water Agency
(Russian river)

5% Groundwater



City of Santa Rosa Water Pressure Zones



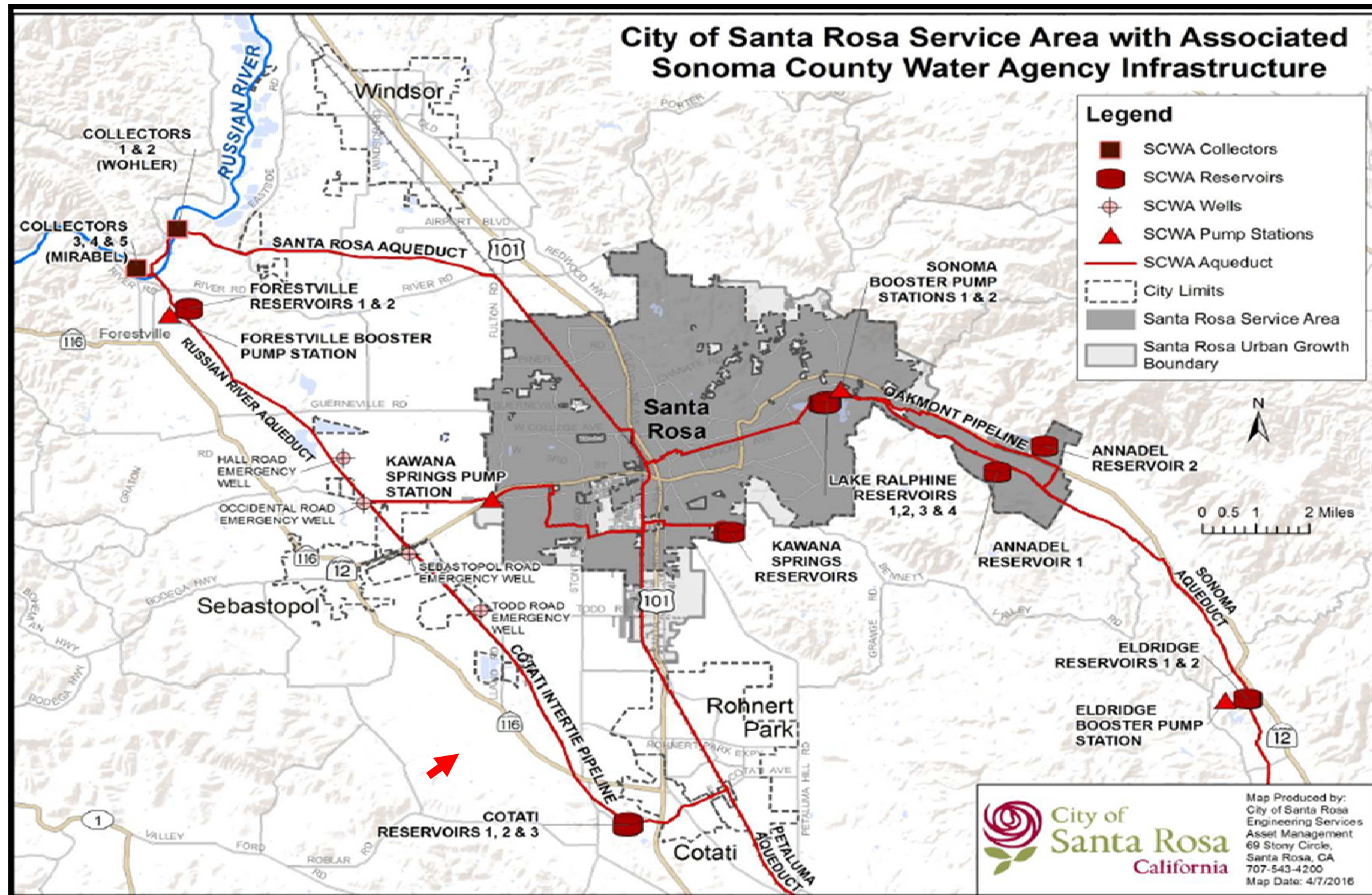
City of Santa Rosa Service Area with Associated Sonoma County Water Agency Infrastructure

Legend

- SCWA Collectors
- SCWA Reservoirs
- ⊕ SCWA Wells
- ▲ SCWA Pump Stations
- SCWA Aqueduct
- City Limits
- Santa Rosa Service Area
- Santa Rosa Urban Growth Boundary



0 0.5 1 2 Miles



City of
Santa Rosa
California

Map Produced by:
City of Santa Rosa
Engineering Services
Asset Management
69 Story Circle,
Santa Rosa, CA
707-543-4200
Map Date: 4/7/2016

Sample Stations



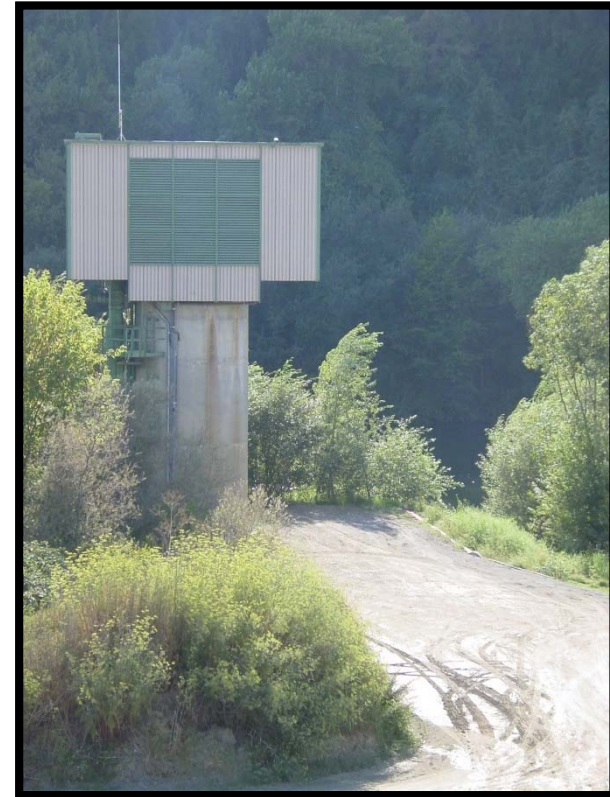
Farmers Lane Well - Water Treatment Plant Samples



OUR FUTURE IN EVERY DROP

Water Quality Sampling

- Water Agency Water Quality Report
 - Russian River Caissons
 - Groundwater Wells



Sonoma County Water Agency - Caissons 1 thru 6 - 2017 Water Quality Report

CLARITY OF WATER FROM GROUNDWATER SOURCES	MCL	Units	Sample Frequency	Caisson 1	Caisson 2	Caisson 3	Caisson 4	Caisson 5	Caisson 6
Turbidity ⁽¹⁾	5 ⁽³⁾	NTU	continuous	average 0.044 range (0.024 - 2.0)	average 0.047 range (0.030 - 2.0)	average 0.045 range (0.032 - 2.0)	average 0.051 range (0.033 - 2.0)	average 0.055 range (0.042 - 2.0)	average 0.030 range (0.025 - 2.0)

MICROBIOLOGICAL - Coliform Bacteria DISINFECTANT - Total Chlorine Residual Total Trihalomethanes ⁽²⁾ - Tank Samples	MCL	Units	# Samples	Distribution System Monitoring for 2017
	< 2 positive samples per month	coliforms/100ml	522	[0] positive samples
	> 95% per month	detectable residual	616	Detectable residual in 100% of samples taken
	0.080	mg/L	72	average = 0.0104 mg/L range = (0.0056 mg/L - 0.0172 mg/L)

VOLATILE ORGANIC COMPOUNDS Section 64444 - Table A	Units	STATE MCL	DLR	PHG { MCLG }	Caisson 1 29-Aug-17	Caisson 2 29-Aug-17	Caisson 3 28-Aug-17	Caisson 4 28-Aug-17	Caisson 5 28-Aug-17	Caisson 6 29-Aug-17
Benzene	mg/L	0.001	0.0005	0.00015	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	mg/L	0.0005	0.0005	0.0001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	mg/L	0.6	0.0005	0.6	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	mg/L	0.005	0.0005	0.006	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	mg/L	0.005	0.0005	0.003	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	mg/L	0.0005	0.0005	0.0004	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	mg/L	0.006	0.0005	0.01	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene (c-1,2-DCE)	mg/L	0.006	0.0005	0.1	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene (t-1,2-DCE)	mg/L	0.01	0.0005	0.06	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene Chloride)	mg/L	0.005	0.0005	0.004	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	mg/L	0.005	0.0005	0.0005	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	mg/L	0.0005	0.0005	0.0002	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/L	0.3	0.0005	0.3	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE) ⁽⁴⁾	mg/L	0.013	0.003	0.013	ND	ND	ND	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	mg/L	0.07	0.0005	0.07	ND	ND	ND	ND	ND	ND
Styrene	mg/L	0.1	0.0005	0.0005	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	mg/L	0.001	0.0005	0.0001	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	mg/L	0.005	0.0005	0.00006	ND	ND	ND	ND	ND	ND
Toluene	mg/L	0.15	0.0005	0.15	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	mg/L	0.005	0.0005	0.005	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	mg/L	0.2	0.0005	1.0	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	mg/L	0.005	0.0005	0.0003	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	mg/L	0.005	0.0005	0.0017	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (Freon 11)	mg/L	0.15	0.005	1.3	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	mg/L	1.2	0.01	4	ND	ND	ND	ND	ND	ND
Vinyl Chloride (VC)	mg/L	0.0005	0.0005	0.00005	ND	ND	ND	ND	ND	ND
Xylenes (m,p, & o)	mg/L	1.75	0.0005	1.8	ND	ND	ND	ND	ND	ND

⁽¹⁾ Turbidity: **Annual average** is the mean of the monthly average values, weighted by hours of pump operation each month.

Range refers to the minimum and maximum Turbidity readings recorded by the online Turbidimeters at each site.

⁽²⁾ Total Trihalomethanes: 40 CFR Section 141.12 - Is the sum of the concentrations of Bromodichloromethane, Dibromochloromethane, Bromoform, and Chloroform.

⁽³⁾ MCL: Secondary Standard.

⁽⁴⁾ Methyl tert-butyl ether (MTBE) is listed in both the Primary (Organic Chemicals - VOCs) and Secondary standards.

Sonoma County Water Agency - Caissons 1 thru 6 - 2017 Water Quality Report

SECONDARY STANDARDS	Units	Secondary	DLR	PHG	Caisson 1	Caisson 2	Caisson 3	Caisson 4	Caisson 5	Caisson 6
<i>Section 64449 - Table A</i>		MCL		{ MCLG }	29-Aug-17	29-Aug-17	28-Aug-17	28-Aug-17	28-Aug-17	29-Aug-17
Aluminum ⁽⁶⁾	µg/L	200	50	600	< 50	< 50	< 50	< 50	< 50	< 50
Color	Color Units	15			< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Copper	µg/L	1300 ⁽⁷⁾	50	300	< 50	< 50	< 50	< 50	< 50	< 50
Foaming Agents (MBAS)	mg/L	0.5			< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Iron	µg/L	300	100		< 100	< 100	< 100	< 100	< 100	< 100
Manganese	µg/L	50	20		< 20	< 20	< 20	< 20	< 20	< 20
Methyl tert-butyl ether (MTBE) ⁽⁴⁾	mg/L	0.005	0.003	0.013	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Odor - Threshold	TON	3	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Silver	µg/L	100	10		< 10	< 10	< 10	< 10	< 10	< 10
Thiobencarb ⁽⁵⁾	mg/L	0.001	0.001	0.042	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Turbidity	NTU	5			See page 1	See page 1	See page 1	See page 1	See page 1	See page 1
Zinc	µg/L	5000	50		< 50	< 50	< 50	< 50	< 50	< 50

SECONDARY STANDARDS	Units	Recommended	DLR	Upper	Caisson 1	Caisson 2	Caisson 3	Caisson 4	Caisson 5	Caisson 6
<i>Section 64449 - Table B</i>		MCL		MCL	29-Aug-17	29-Aug-17	28-Aug-17	28-Aug-17	28-Aug-17	29-Aug-17
Total Dissolved Solids	mg/L	500		1000	140	140	140	140	160	150
Specific Conductance	µS/cm	900		1600	230	250	240	240	280	240
Chloride	mg/L	250		500	4.7	4.7	5.5	5.4	5.4	4.8
Sulfate	mg/L	250	0.5	500	11	11	12	12	16	13

ADDITIONAL CONSTITUENTS ANALYZED	Units	STATE	DLR	PHG	Caisson 1	Caisson 2	Caisson 3	Caisson 4	Caisson 5	Caisson 6
		MCL		{ MCLG }	29-Aug-17	29-Aug-17	28-Aug-17	28-Aug-17	28-Aug-17	31-Aug-16
pH	pH				7.40	7.36	7.14	7.32	7.18	7.15
Total Hardness as CaCO ₃	mg/L				103	99	107	109	132	115
Calcium	mg/L				21	20	21	21	25	23
Magnesium	mg/L				12	12	14	14	17	14
Sodium	mg/L				7.5	7.7	8.7	8.9	8.3	7.8
Potassium	mg/L				1.1	1.0	1.3	1.3	1.1	1.0
Total Alkalinity as CaCO ₃	mg/L				100	100	110	100	120	110
Hydroxide	mg/L				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbonate	mg/L				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bicarbonate	mg/L				120	120	130	130	150	130
Agressiveness Index					11.02	11.03	10.86	10.96	10.92	10.91
Lead	µg/L	15 ⁽⁷⁾	5	0.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Radon 222 ± Counting Error	pCi/L		100		87.6 ± 21.4	130 ± 23.4	129 ± 16.0	138 ± 17.5	163 ± 18.0	153 ± 23.7
N-Nitrosodimethylamine (NDMA)	µg/L	0.01 ⁽⁸⁾		0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

⁽⁴⁾ Methyl tert-butyl ether (MTBE) is listed in both the Primary (Organic Chemicals - VOCs) and Secondary standards.

⁽⁵⁾ Thiobencarb is listed in both the Primary (Organic Chemicals - SOCs) and Secondary standards.

⁽⁶⁾ Aluminum is listed in both the Primary (Inorganic Chemicals) and Secondary standards.

⁽⁷⁾ Action Level under the Lead and Copper Rule.

⁽⁸⁾ Notification Level

2017 Water Quality Sampling Results

TABLE OF DETECTED CHEMICALS OR CONSTITUENTS IN 2017

Substance (Parameter)	Public Health Goal (MCLG)	DLR	Maximum Contaminant Level	WATER AGENCY¹		SANTA ROSA²		Major Source in Drinking Water
				Range Detected	Reporting Value	Range Detected	Reporting Value	
PRIMARY STANDARDS Detected Regulated Contaminants with Primary MCLs or MRDLs								
INORGANIC CONTAMINANTS								
Fluoride (ppm)³	1	0.1	4.0	ND	ND	0.19-0.22	0.2	Erosion of natural deposits
Nitrate (as N ppm)	1	0.4	1	ND	ND	ND	ND	Runoff/leaching from fertilizer use leaching from septic tanks and sewage; erosion of natural deposits
DISTRIBUTION SYSTEM DETECTIONS 2017								
MICROBIOLOGICAL CONTAMINANTS								
Total Coliform Bacteria from Santa Rosa Distribution System	0		5% of monthly samples	NA	NA	0%-0.77%	0%	Naturally present in the environment
Total Trihalomethanes (ppb)	NS		80	NA	NA	17.3-25.6	25.63	By-product of drinking water chlorination
Haloacetic Acids (ppb)	NS		60	NA	NA	5.6-8.3	6.85	By-product of drinking water chlorination
Disinfectant-Free Chlorine (Cl₂) Residual (ppm)	MRDLG as Cl₂ 4.0		MRDLG as Cl₂ 4.0	NA	NA	0.02-1.6	0.78	Disinfectant to control microbes
pH (units) prior to pH adjustment	NS		NS	NA	NA	7-8.5	7.78	Sodium Hydroxide addition
Benzene (ppb)⁴ see Restoring Fire Water System in Fontainebleau article on next page	0.15	.5	1					Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills

SECONDARY STANDARDS Aesthetic Standards Established by the State Water Resources Control Board's Division of Drinking Water

REGULATED CONTAMINANTS WITH SECONDARY MCLs	There are no adverse health effects from exceeding the secondary (aesthetic) standards.							
Threshold Odor Number (TON) at 60°C	NS	1	3	ND	ND	ND	ND	Naturally occurring organic materials
Chloride (ppm)	NS		500	5.5-4.7	5.0	17.9-24.3	21.1	Run-off/leaching from natural deposits
Sulfate (ppm)	NS	0.5	500	11-16	12.5	1.2-1.4	1.3	Run-off/leaching from natural deposits

Color (units)	NS		15	ND	ND	ND	ND	Naturally occurring organic materials
Manganese (ppb)	NS	20	50	<20	<20	3-15.1	8.57	Run-off/leaching from natural deposits
ADDITIONAL CONSTITUENTS								
Sodium (ppm)	NS		NS	7.5-8.9	8.1	52-56.4	54.2	Sodium refers to the salt present in water. It is naturally occurring.
Total Hardness CaCO ₃ (ppm)	NS		NS	99-115	110.8	141-150	145.5	Erosion of natural deposits
Total Alkalinity CaCO ₃ (ppm)	NS		NS	100-120	106.6	120-190	145	Erosion of natural deposits
Calcium (ppm)	NS		NS	20-25	21.8	27.7-29.5	28.6	Erosion of natural deposits
Total Radon 222 (pCi/L) ⁵	NS	100	NS	171-382	225.2	445-455	450	Found in the soil throughout the U.S.
Temperature °C (°F)	NS		NS	NA	NA	11(51)-28(83)	19(66)	Water temp. in Distribution System

Santa Rosa's drinking water meets or exceeds all State and Federal drinking water health standards. Your water is tested weekly and the water system is carefully managed to be dependable and safe.

Note: Listed in the table above are substances detected in the City's drinking water. A full listing of sample results is on our website.

1 The Water Agency has 9 different groundwater sources that can be blended together. The range detected and the reporting value are the high, low, average and weighted average of the 9 sources.

2 Santa Rosa water data includes sampling taken in the distribution system and from source water wells.

Our two drinking water wells are sampled separately. The Manganese reporting value is after treatment.

3 Fluoridation to fight tooth decay has not been implemented in Santa Rosa. The optimal dose of fluoride in water to fight tooth decay is 0.7 ppm.

4 Benzene was not present in regulatory quarterly source water sampling, but was found in post-fire investigative sampling related to the introduction of melted plastics in an isolated area of

Fontainebleau. "Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills" is EPA recommended language that does not apply to our unique contamination.

5 Radon is a radioactive gas that can get into indoor air when released from tap water from showering or running a faucet. Radon entering the home through tap water is a very small source of radon in indoor air. EPA is proposing to require

community water suppliers to provide water with radon levels no higher than 4,000 pCi/L, which contributes about 0.4 pCi/L of radon to the air in your home. More information is available at EPA website: <http://www.epa.gov/radon/radon.html>. The State allows us to monitor for some contaminants less than once per year. Our radon data for Santa Rosa's source, though representative, was sampled in 2009.

2017 Water Quality Sampling Results

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				WATER AGENCY¹		SANTA ROSA²		
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pH (units) prior to pH adjustment	NS		NS	NA	NA	7-8.5	7.78	Sodium Hydroxide addition

Benzene (ppb)⁴ see *Restoring Fire Water System in Fountaingrove* article on next page

0.15

.5

1

Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills

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Specific Conductance (umhos/cm)	NS		1600	230-280	246.6	470-510	490	Substances from ions when in water
Total Dissolved Solids (ppm)	NS		1000	140-160	145	340-370	355	Run-off/leaching from natural deposits
Color (units)	NS		15	ND	ND	ND	ND	Naturally occurring organic materials
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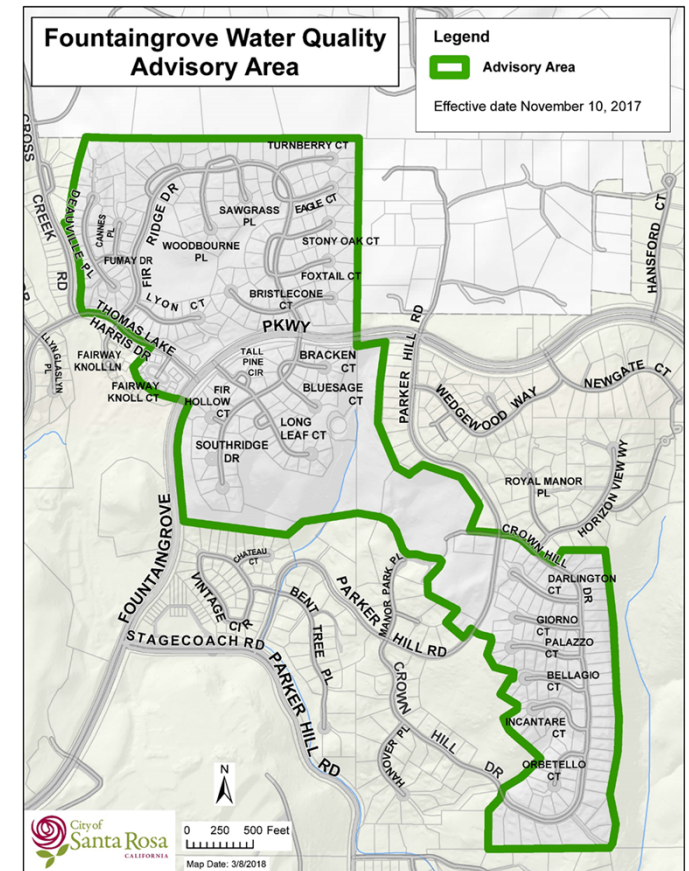
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Benzene Exceedance

- Update on the investigation
- Summary of Actions Taken
- Information on Resolution
- Next Steps



Questions?

