

2021 Annual Drinking Water Quality Report

Robertsdale Water Works

MAYOR AND COUNCIL

Charles Murphy, Mayor

Sue Cooper

Ruthie Campbell

Joe Kitchens

Russell Johnson

Paul Hollingsworth

EMPLOYEES

Lee Irwin, Foreman

James Brill

Justen Turberville

Tristan Thomas

Jason Hughes

Ted Taylor

BOARD MEETING TIME

The City of Robertsdale City Council meetings are held on the 1st Monday of each month at 6 PM and the 3rd Monday of each month at 8 AM at the Robertsdale City Hall located at 22647 Racine Street.

The Robertsdale Water Works is pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

We have a Source Water Protection Plan available. We are continually working on it to ensure it provides more information such as potential sources of contamination. I'm pleased to report that our drinking water is safe and meets federal and state requirements. If you have any questions about this report or concerning your water utility, please contact Lee Irwin, Robertsdale Water Works, 251-947-8950. We want our valued customers to be informed about our water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the 1st Monday of each month, 6:00 P.M., Robertsdale City Hall located at 22647 Racine Street.

The Robertsdale Water Works routinely monitors for constituents in your drinking water according to federal and state laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2021. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

The City of Robertsdale monitors for contaminants according to a schedule assigned to us by the Alabama Department of Environmental Management (ADEM), using EPA approved methods and a state certified laboratory. ADEM allows us to monitor for some contaminants less than once a year because the concentrations of these contaminants do not change frequently.

Constituent Monitored	Date Monitored
Microbiological Contaminants	Current
Disinfection-by-products	2021
Inorganic Contaminants	2020
Lead and Copper	2019
Nitrates	2021
Synthetic Organic Contaminants	2020
Volatile Organic Contaminants	2020
Radium	2020
Gross Alpha, Excl. Radon and E.	2020
Sulfate	2020

PLAIN LANGUAGE DEFINITIONS

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Not Required (NR) – Laboratory analysis not required due to waiver granted by the Environmental Protection Agency for the State of Alabama.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - (mandatory language) The “Maximum Allowed” (**MCL**) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - (mandatory language) The “Goal” (**MCLG**) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety

Maximum Residual Disinfection Level Goal or MRDLG- The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level or MRDL- The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Table of Primary Contaminants

At high levels some primary contaminants are known to pose a health risks to humans. This table provides a quick glance of any primary contaminant detections.

CONTAMINANT	MCL	AMOUNT DETECTED	CONTAMINANT	MCL	AMOUNT DETECTED
Bacteriological					
Total Coliform Bacteria	< 5%	ND	Cis-1,2Dichloroethylene(ppb)	70	ND
Turbidity	TT	3	Trans-1,2Dichloroethylene(ppb)	100	ND
Fecal Coliform and E- Coli	0	ND	Dichloromethane (ppb)	5	ND
Fecal Indicators	TT	ND	1,2-Dichloropropane (ppb)	5	ND
Radiological					
Beta/photon emitters (mrem/yr)	4	ND	Di (2-ethylhexyl)phthalate (ppb)	6	ND
Alpha emitters (pci/l)	15	ND	Dinoseb(ppb)	7	ND
Combined radium (pci/l)	5	ND	Dioxin [2,3,7,8-TCDD] (ppq)	30	ND
Uranium	TT	ND	Diquat (ppb)	20	ND
Inorganic					
Antimony (ppb)	6	ND	Endothall (ppb)	100	ND
Arsenic (ppb)	10	ND	Endrin (ppb)	2	ND
Asbestos (MFL)	7	ND	Epichlorohydrin	TT	ND
Barium (ppm)	2	0.76	Ethylbenzene (ppb)	700	ND
Beryllium (ppb)	4	ND	Ethylene dibromide (ppt)	50	ND
Cadmium (ppb)	5	ND	Glyphosate (ppb)	700	ND
Chromium (ppb)	100	ND	Heptachlor (ppt)	400	ND
Copper (ppm)	AL=1.3	0.004	Heptachlor epoxide (ppt)	200	ND
Cyanide (ppb)	200	ND	Hexachlorobenzene (ppb)	1	ND
Fluoride (ppm)	4	ND	Hexachlorocyclopentadiene (ppb)	50	ND
Lead (ppb)	AL=15	0.011	Lindane (ppt)	200	ND
Mercury (ppb)	2	ND	Methoxychlor (ppb)	40	ND
Nitrate (ppm)	10	1.0	Oxamyl [Vydate] (ppb)	200	ND
Nitrite (ppm)	1	ND	PCB'S (ppb)	0.5	ND
Total Nitrate and Nitrite (ppm)	10	1.0	Pentachlorophenol (ppb)	1	ND
Selenium (ppm)	50	ND	Picloram (ppb)	500	ND
Thallium (ppm)	2	ND	Simazine (ppb)	4	ND
Organic Chemicals					
2,4-D (ppb)	70	ND	Styrene (ppb)	100	ND
Acrylamide	TT	ND	Tetrachloroethylene (ppb)	5	ND
Alachlor (ppb)	2	ND	Toluene (ppm)	1	0.101
Atrazine (ppb)	3	ND	Toxaphene (ppb)	3	ND
Benzene (ppb)	5	ND	TTHM (ppb)	80	11.55
Benzo(a)pyrene[PHAs] (ppt)	200	ND	2,4,5-TP(Silvex) (ppb)	50	ND
Carbofuran (ppb)	40	ND	1,2,4-Trichlorobenzene (ppm)	0.7	ND
Carbon Tetrachloride (ppb)	5	ND	1,1,1-Trichloroethane (ppb)	200	ND
Chlordane (ppb)	2	ND	1,1,2-Trichloroethane (ppb)	5	ND
Dalapon (ppb)	200	ND	Trichloroethylene (ppb)	5	ND
Dibromochloropropane (ppt)	200	ND	Vinyl Chloride (ppb)	2	ND
o-Dichlorobenzene (ppb)	600	ND	Xylenes (ppm)	10	ND
p- Dichlorobenzene (ppb)	75	ND			
1,2-Dichloroethane (ppb)	5	ND			
1,1-Dichloroethylene (ppb)	7	ND			

TTHM was a required test during 2021. PFAS (per- and poly-fluoroalkyl substances) were tested in 2020 and resulted in a non-detect (ND), which did not make it a requirement for 2021.

In addition to the 76 primary drinking water contaminants, the utility monitors regularly for the following unregulated and secondary contaminants as regulated by the Alabama Department of Environmental Management. ADEM has proposed regulations under consideration at the time of this publication to require any detects of these contaminants to be reported in all subsequent water quality reports. The requirement of this additional monitoring and reporting will further insure the safety of your drinking water and will keep you, as a utility customer, more informed.

Table of Secondary Contaminants

Contaminant	MCL	Amount detected	Units	Contaminant	MCL	Amount detected	Unit
Aluminum	0.2	0.2	ppm	Manganese	0.05	0.1	ppm
Chloride	250	8	ppm	Odor	3	2.3	threshold odor #
Color	15	10	units	Silver	0.1	ND	ppm
Copper	1	0.004	ppm	Sulfate	250	6	ppm
Foaming Agents	0.5	ND	ppm	Total Dissolved Solids	500	50	ppm
Iron	0.3	0.31	ppm	Zinc	5	ND	ppm

Unregulated Contaminants Table

CONTAMINANT	Average	Range	CONTAMINANT	Average	Range
1,1 - Dichloropropene	ND	0.070 - 0.130	Chloroform	0.0032	0.000 - 4.900
1,1,1,2-Tetrachloroethane	ND	0.070 - 0.130	Chloromethane	ND	0.070 - 0.130
1,1,2,2-Tetrachloroethane	ND	0.070 - 0.130	Dibromochloromethane	0.0071	0.070 - 0.130
1,1-Dichloroethane	ND	0.070 - 0.130	Dibromomethane	ND	0.070 - 0.130
1,2,3 - Trichlorobenzene	ND	0.070 - 0.130	Dicamba	ND	0.070 - 0.130
1,2,3 - Trichloropropane	ND	0.070 - 0.130	Dichlorodifluoromethane	ND	0.070 - 0.130
1,2,4 - Trimethylbenzene	ND	0.070 - 0.130	Dieldrin	ND	0.000 - 0.000
1,3 - Dichloropropane	ND	0.070 - 0.130	Hexachlorobutadiene	ND	0.070 - 0.130
1,3 - Dichloropropene	ND	0.070 - 0.130	Isoprpylbenzene	ND	0.070 - 0.130
1,3,5 - Trimethylbenzene	ND	0.070 - 0.130	M-Dichlorobenzene	ND	0.070 - 0.130
2,2 - Dichloropropane	ND	0.070 - 0.130	Methomyl	ND	0.000 - 0.000
3-Hydroxycarbofuran	ND	0.000 - 0.000	MTBE	ND	0.000 - 0.000
Aldicarb	ND	0.000 - 0.000	Metolachlor	ND	0.000 - 0.000
Aldicarb Sulfone	ND	0.000 - 0.000	Metribuzin	ND	0.000 - 0.000
Aldicarb Sulfoxide	ND	0.000 - 0.000	N - Butylbenzene	ND	0.070 - 0.130
Aldrin	ND	0.000 - 0.000	Naphthalene	ND	0.070 - 0.130
Bromobenzene	ND	0.070 - 0.130	N-Propylbenzene	ND	0.070 - 0.130
Bromochloromethane	ND	0.070 - 0.130	O-Chlorotoluene	ND	0.070 - 0.130
Bromodichloromethane	0.0069	0.070 - 0.130	P-Chlorotoluene	ND	0.070 - 0.130
Bromoform	0.0025	0.070 - 0.130	P-Isopropyltoluene	ND	0.070 - 0.130
Bromomethane	ND	0.070 - 0.130	Propachlor	ND	0.000 - 0.000
Butachlor	ND	0.000 - 0.000	Sec - Butylbenzene	ND	0.070 - 0.130
Carbaryl	ND	0.000 - 0.000	Tert - Butylbenzene	ND	0.070 - 0.130
Chloroethane	ND	0.070 - 0.130	Trichlorfluoromethane	ND	0.070 - 0.130

Table of Detected Contaminants

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
TTHM [Total Trihalomethanes]	NO	11.55	ppb	100	100	High Temperatures in Summer months and short term increases in drinking water due to major breaks in water lines.
Toluene	NO	0.101	ppm	1	1	Used as a solvent, especially for paints, coatings, gums, oils and resins.
Nitrate (as Nitrogen)	NO	1.0	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Special Table

Amount Detected

Calcium (ppm)	1.61
Chlorine (ppm)	0.21-1.95
Chlorine Dioxide (ppb)	ND
Chloramines (ppm)	ND
Bromate (ppb)	ND
Chlorite (ppm)	ND
Magnesium (ppm)	0.863
Sodium (ppm)	2.67
Hardness CaCo3 (ppm)	ND
HAA5 [Total haloacetic acids] (ppb)	4.5
Alkalinity	3
PH	6.1-10.7
pfas (per- and poly-fluoroalkyl)	ND

GENERAL INFORMATION ABOUT DRINKING WATER CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised, such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or individuals with other immune system disorders, some elderly, and infants, can be particularly at risk from infections. Those at risk should seek advice about drinking water from the health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Robertsdale is responsible for providing high quality drinking water, but cannot control the variety of materials used in the plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. **More information about contaminants and potential health effects can be obtained by call the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).**

VARIANCES AND WAIVERS

Based on a study conducted ADEM with the approval of the EPA, a statewide waiver for the monitoring of Asbestos and Dioxin was issued. Thus, monitoring for these contaminants was not required.

WATER SOURCE

Our water sources are groundwater. Well # 2 draws water from the Miocene Aquifer and is located on Michigan St behind City Hall. Well # 3 draws water from the Miocene Aquifer and is located on Park Avenue. Well # 4 draws water from the Miocene Aquifer and is located on Fairground Road. Well # 5 draws water from the Miocene Aquifer and is located on Julius Childress Dr.

TREATMENT TECHNIQUES

St. Paul (Well #2 & #3) and Fairground Rd. (Well #4) water plants add chlorine to the water to kill bacteria. Lime is added to produce a desirable water quality by raising the pH level to reduce corrosion and acidic conditions.

Hwy. 59 water plant (Well #5) is disinfected by MIOX/Chlorine Tablet System (mixed oxidant) treatment to kill bacteria. Caustic soda is added to produce a desirable water quality by raising the pH level to reduce corrosion and acidic conditions. A polymer is added to aid with the media filtration that is used to reduce iron and manganese levels.

We at the City of Robertsedale work around the clock to provide top quality water to every tap. We ask that all of our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future. We serve 3,850 customers and have about 96.4 miles of water mains.