Annual Drinking Water Quality Report
Saratoga Springs City 2018

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the 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 highest of quality for your water. Our water sources have been determined to be from groundwater and surface water sources. Our water sources include District Well 1, Well #2, Well #3, Well #4 and Well #6. We also purchase water from Central Utah WCD-Utah Valley (25112).

The Drinking Water Source Protection Plan for Saratoga Springs is available for your review. It contains information regarding source protection zones, potential contamination sources and management strategies to protect drinking water. Our sources are located in remote and protected areas with low level susceptibility to potential contamination sources. We have also developed management strategies to further protect our sources from contamination. Please contact Public Works if you have questions or concerns regarding our source protection plan.

There are several connections to our water distribution system. When connections are properly installed and maintained, the concerns are minimal. However, unapproved and improper piping changes or connections may adversely affect not only the availability, but the quality of the water. A cross connection may allow polluted water or chemicals to mingle into the water supply system when not properly protected. This not only compromises the water quality but can also affect your health. So, what can you do? Do not make or allow improper connections at your homes. An unprotected garden hose, lying in a puddle next to the driveway is a cross connection. An unprotected lawn sprinkler system after you have fertilized or sprayed is also a cross connection. When a cross connection exists at your home, it will affect you and your family first. If you would like to learn more about helping to protect the quality of our water, contact Public Works for further information.

This report shows our water quality and what it means to you our customer.

If you have any questions concerning this report or your water utility, please contact George Leatham at 801-766-9793, extension 205**.** We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first and third Tuesdays of every month at 7:00 PM at City Hall; located at 1307 North Commerce Drive.

Saratoga Springs routinely monitors for constituents in our drinking water in accordance with the Federal and Utah State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2018 All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It is important to remember that the presence of these constituents does not necessarily pose a health risk.

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.
ND/Low - High - For water systems that have multiple sources of water, the Utah Division of Drinking Water has given water systems the option of listing the test results of the constituents in one table, instead of multiple tables. To accomplish this, the lowest and highest values detected in the multiple sources are recorded in the same space in the report table.
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 (ug/l) - 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.
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.
Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Maximum Contaminant Level (MCL) - 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 (MCLG) - 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.
Date- Because of required sampling time frames i.e. yearly, 3 years, 4 years and 6 years, sampling dates may seem outdated

TEST RESULTS							
Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
Microbiological Contaminants							
Total Coliform Bacteria	N	0	N/A	0	5	2018	Naturally present in the environment
Fecal coliform and *E.coli*	N		N/A	0	If a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	2018	Human and animal fecal waste
Turbidity for Ground Water	N	0.04-34.7	NTU	N/A	5	2018	Soil runoff
Turbidity for Surface Water	N	0.42-34.7	NTU	N/A	0.5 in at least 95% of the samples and must never exceed 5.0	2018	Soil Runoff (highest single measurement & the lowest monthly percentage of samples meeting the turbidity limits)
Inorganic Contaminants							

Arsenic	N	1-7.5	ppb	0	10	2018	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	0.069-0.261	ppm	2	2	2018	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Carbon, Total Organic (TOC)	N	1.8-3.4	ppm	0	0	2018	Naturally present in environment
Copper a. 90% results b. # of sites that exceed the **AL**	N	a. - 95 b. - 0	ppb	1300	AL=1.3	2018	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	0.186-0.314	ppm	4	4	2018	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead a. 90% results b. # of sites that exceed the **AL**	N	a. - 2.1 b - .0	ppb	0	AL=15	2018	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	0-0.73	ppm	10	10	2018	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	0.8-4.6	ppb	50	50	2018	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium	N	13-83.3	ppm	500	None	2018	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	14-153	ppm	1000	1000	2018	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
TDS (Total Dissolved solids)	N	160-674	ppm	2000	2000	2018	Erosion of natural deposits
Disinfection By-products							
TTHM [Total trihalomethanes]	N	0-57.6	ppb	0	80	2018	By-product of drinking water disinfection
Radioactive Contaminants							
Alpha emitters	N	0-4.5	pCi/1	0	15	2018	Erosion of natural deposits
Radium 228	N	-0.16-1.1	pCi/1	0	5	2018	Erosion of natural deposits
Synthetic Organic Contaminants including Pesticides and Herbicides (If Water System has been issued waivers for these samples then this table can be deleted from the report).							
2,4-D	N	W	ppb	70	70	2017	Runoff from herbicide used on row crops
2,4,5-TP (Silvex)	N	W	ppb	50	50	2017	Residue of banned herbicide
Acrylamide	TT	W	N/A		TT	2017	Added to water during sewage/wastewater treatment
Alachlor	N	W	ppb	0	2	2017	Runoff from herbicide used on row crops

Atrazine	N	W	ppb	3	3	2017	Runoff from herbicide used on row crops
Benzo(a)pyrene (PAH)	N	W	ppt	0	200	2017	Leaching from linings of water storage tanks and distribution lines
Carbofuran	N	W	ppb	40	40	2017	Leaching of soil fumigant used on rice and alfalfa
Chlordane	N	W	ppb	0	2	2017	Residue of banned termiticide
Dalapon	N	W	ppb	200	200	2017	Runoff from herbicide used on rights of way
Di(2-ethylhexyl) adipate	N	W	ppb	400	400	2017	Discharge from chemical factories
Di(2-ethylhexyl) phthalate	N	W	ppb	0	6	2017	Discharge from rubber and chemical factories
Dibromochloropropane	N	W	ppt	0	200	2017	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb	N	W	ppb	7	7	2017	Runoff from herbicide used on soybeans and vegetables
Diquat	N	W	ppb	20	20	2017	Runoff from herbicide use
Dioxin [2,3,7,8-TCDD]	N	W	ppq	0	30	2017	Emissions from waste incineration and other combustion; discharge from chemical factories
Endothall	N	W	ppb	100	100	2017	Runoff from herbicide use
Endrin	N	W	ppb	2	2	2017	Residue of banned insecticide
Epichlorohydrin	TT	W	N/A	0	TT	2017	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
Ethylene dibromide	N	W	ppt	0	50	2017	Discharge from petroleum refineries
Glyphosate	N	W	ppb	700	700	2017	Runoff from herbicide use
Heptachlor	N	W	ppt	0	400	2017	Residue of banned termiticide
Heptachlor epoxide	N	W	ppt	0	200	2017	Breakdown of heptachlor
Hexachlorobenzene	N	W	ppb	0	1	2017	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo-pentadiene	N	W	ppb	50	50	2017	Discharge from chemical factories
Lindane	N	W	ppt	200	200	2017	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	N	W	ppb	40	40	2017	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate]	N	W	ppb	200	200	2017	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls]	N	W	ppt	0	500	2017	Runoff from landfills; discharge of waste chemicals
Pentachlorophenol	N	W	ppb	0	1	2017	Discharge from wood preserving factories
Picloram	N	W	ppb	500	500	2017	Herbicide runoff

Simazine	N	W	ppb	4	4	2017	Herbicide runoff
Toxaphene	N	W	ppb	0	3	2017	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Contaminants							
Benzene	N	ND	ppb	0	5	2017	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	N	ND	ppb	0	5	2017	Discharge from chemical plants and other industrial activities
Chlorobenzene	N	ND	ppb	100	100	2017	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene	N	ND	ppb	600	600	2017	Discharge from industrial chemical factories
p-Dichlorobenzene	N	ND	ppb	75	75	2017	Discharge from industrial chemical factories
1,2 - Dichloroethane	N	ND	ppb	0	5	2017	Discharge from industrial chemical factories
1,1 - Dichloroethylene	N	ND	ppb	7	7	2017	Discharge from industrial chemical factories
cis-1,2-ichloroethylene	N	ND	ppb	70	70	2017	Discharge from industrial chemical Factories
trans - 1,2 - Dichloroethylene	N	ND	ppb	100	100	2017	Discharge from industrial chemical factories
Dichloromethane	N	ND	ppb	0	5	2017	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	N	ND	ppb	0	5	2017	Discharge from industrial chemical factories
Ethylbenzene	N	ND	ppb	700	700	2017	Discharge from petroleum refineries
Styrene	N	ND	ppb	100	100	2017	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene	N	ND	ppb	0	5	2017	Discharge from factories and dry cleaners.
1,2,4 -Trichlorobenzene	N	ND	ppb	70	70	2017	Discharge from textile-finishing factories
1,1,1 - Trichloroethane	N	ND	ppb	200	200	2017	Discharge from metal degreasing sites and other factories
1,1,2 -Trichloroethane	N	ND	ppb	3	5	2017	Discharge from industrial chemical factories
Trichloroethylene	N	ND	ppb	0	5	2017	Discharge from metal degreasing sites and other factories
Toluene	N	ND	ppb	1000	1000	2017	Discharge from petroleum factories
Vinyl Chloride	N	ND	ppb	0	2	2017	Leaching from PVC piping; discharge from plastics factories
Xylenes	N	ND	ppb	10000	10000	2017	Discharge from petroleum factories; discharge from chemical factories

Total Organic Carbon (TOC) alone has no negative health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products exceeding the MCL may lead to adverse health effects including liver or kidney problems, nervous system effects, and an increased risk of cancer.

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. Saratoga Springs City is responsible for providing high quality drinking water but cannot control the variety of materials used in 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 water for drinking or cooking. If you are concerned about lead in your water, you may 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 sources of drinking water are subject to potential contamination by constituents that are naturally occurring or manmade. These constituents can be microbes, organic or inorganic chemicals, or radioactive materials. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCLs are set at very stringent levels. To illustrate the possibility of changes in a person's health as described for many regulated constituents: a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Violations that Your Water System Received for the Report Year

During 2018, we received a Monitoring violation that covered the period of 07/1/2018 – 9/30/2018 for a source point chlorine residual. However, all system chlorine residuals taken throughout 2018 were in compliance.

Non-Health Based Violation for Market Street and Riverside Drive Waterlines. Plans and Specifications Rule – Failure to receive plans and specifications approval before construction. Engineer failed to receive plans and specifications approval prior to the installation of waterlines in 2015. This is NOT a health-based violation and the waterlines have since been approved.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk for infections. These people should seek advice from their health care providers about drinking water. 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).

We at Saratoga Springs City work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.