



Water Quality Report For 2017

Seneca Light & Water Plant Seneca, South Carolina

Water System No. 3710002

Number 20

About Seneca's Report

We are pleased to provide you with this Water Quality Report for 2017. This report is intended to provide you with important information about your drinking water and the efforts made by the City of Seneca to provide safe drinking water. The Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) have established strict quality standards for drinking water. These standards are designed to protect the short and long term health of water consumers from waterborne disease organisms and harmful chemicals. Once each year, EPA requires public water systems to provide water customers a report containing information about drinking water quality and compliance with the quality standards.

Each year, the SCDHEC-certified laboratory at the Seneca Water Plant performs over 10,000 analyses for various water parameters, including tests for over 130 contaminants that may be in drinking water. Sampling for your health protection is conducted at every stage of the treatment process at our water plant and numerous points throughout the distribution system. Also, regularly scheduled monitoring for the presence of potential contaminants is conducted by SCDHEC.

Our testing indicates that the treatment of our water and the distribution of our water are effective in protecting the public health. As you will see from the table on page 3, our drinking water meets and exceeds all health standards under the Safe Drinking Water Act. The City of Seneca wants you to know that we are dedicated to providing clean, safe drinking water to our customers and community.

AWOP ACHIEVEMENT AWARD

The Area Wide Optimization Program (AWOP) was established by DHEC to maximize public health protection from microbial contaminants through optimized performance criteria. The Seneca Water Plant has received this award each year since 2001.

Where Does My Water Come From?

The sources of drinking water (both tap 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 can pick up substances resulting from the presence of animals or from human activities.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

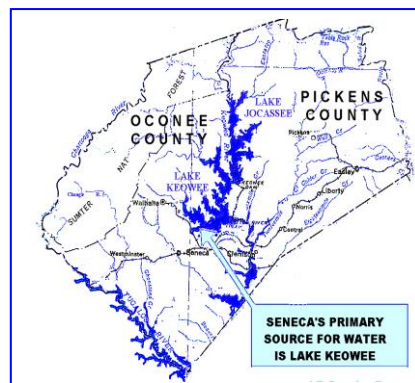
Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Our source of water is Lake Keowee. It is a man-made surface water source, created by Duke Energy, which we treat in our water treatment plant located on the southern end of the Lake off Northampton Road. Our system is interconnected with the cities of Walhalla and Westminster for supplementary water supply. Water was not obtained from either of these sources in 2017.



The SC Department of Health and Environmental Control completed a source water assessment for each watershed in the state. To read the Source Water Assessment report for the City of Seneca's drinking water source, Lake Keowee, contact the Seneca Water Plant to request a copy or contact SCDHEC's Source Water Protection Program. A Source Water Assessment Summary is included in this report.

OUR WATER PLANT

The existing Water Treatment Plant was constructed in 1968 by Duke Energy to replace the plant inundated by the development of Lake Keowee. The Plant provided water for the residents of the City of Seneca and surrounding areas of Oconee County. The original Plant capacity was 4 million gallons per day (MGD). In 1981, the Plant was expanded to 8 MGD capacity by adding a second treatment train. To meet the growing needs of the area, a second expansion, in 1990, added a third treatment train and increased the Plant capacity to 12 MGD. In 2005, the Plant was increased to 14 MGD by changing a basin to Dissolved Air Floatation (DAF) and in the following upgrade, completed in 2009, the Plant capacity was increased to 20 MGD by adding another DAF basin and more filtration. The last construction project began in 2014. This upgrade started with a change from chlorine gas to sodium hypochlorite. It also addressed changes to the chemical feed systems and the sludge handling process. A new administration building was also added in this project. This building houses the control room, laboratories, training facilities, and also has an area for meetings and City functions.

The plant is divided into three treatment trains with two basins and two filters per train. Two trains work as a conventional surface water treatment plant, which removes trace amounts of clays, silts, and particulate matter from the water in Lake Keowee by destabilizing the particulates and removing them using the process of coagulation followed by sedimentation and filtration. The third train is a Dissolved Air Floatation (DAF) treatment process. The DAF process uses micro-bubbles injected into the water to remove the particulates in the water by floatation instead of sedimentation. This process is more efficient than conventional treatment and can treat more water in a smaller space. The other processes for the DAF are similar to the conventional treatment. The effectiveness of these processes is determined by measuring the turbidity, or cloudiness, of the water before and after filtration.

The Plant adds chlorine to the water in two stages for disinfection of pathogens. For disinfection, the EPA and the State standard requires a certain amount of chlorine concentration with a corresponding amount of contact time. Also, a detectable level of disinfectant, or chlorine, must be maintained throughout the distribution system. The Plant also adds fluoride to help prevent tooth decay, and phosphate to stabilize the water for prevention of corrosion occurrences.

The Seneca Water Plant is maintained and monitored by "A Class" State Certified Environmental Systems Operators who are thoroughly and continually trained to perform routine physical and chemical tests.

SOURCE WATER ASSESSMENT SUMMARY

The SCDHEC source water assessment consists of the following key elements: determining the geographic boundaries for each water supply, preparing a list of potential contamination sources (PCSs) within the watershed, and assessing the potential for pollutants to enter the water supply. The system is located in Oconee, SC in the Savannah-Salkehatchie Basin. Potential contaminants identified in the report include volatile organic compounds (VOCs), petroleum products, metals, nitrates, pesticides/herbicides, and pathogens. Potential sources of these contaminants include gas stations, dry cleaners, agricultural areas, automobile repair shops, landfills, septic systems and facilities where potential contaminants are used or stored. The susceptibility analysis ranked the PCSs as high, moderate, and low. More information about this source water assessment or Source Water Protection is available at www.scdhec.gov/HomeAndEnvironment/Water/SourceWaterProtection/ or by calling the Seneca Water Plant at (864)885-2735.

DEFINITIONS APPLICABLE TO THE WATER QUALITY DATA:

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

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

Locational Running Annual Average (LRAA): Average of four consecutive quarters.

Maximum Contaminant Level Goal (MCLG): 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 Contaminant Level (MCL): 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 Residual Disinfectant Level (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.

Maximum Residual Disinfectant Level Goal (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.

Nephelometric Turbidity Units (NTU): Nephelometric turbidity units (a measure of the cloudiness of water).

Not Applicable (NA): Not applicable to the subject matter.

Not Detected (ND): Not detected.

Not Required (NR): Data is not required for this measure.

No Standard (NS): No standard.

Parts per Million (ppm): Parts per million, or milligrams per liter (mg/l). One ounce in 7,350 gallons of water.

Parts per Billion (ppb): Parts per billion, or micrograms per liter (ug/l). One ounce in 7,350,000 gallons of water.

Picocuries per Liter (pCi/L): Picocuries per Liter, a measure of radioactivity.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

REQUIRED LEAD AND COPPER INFORMATION

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 Seneca 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 drinking 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>.

WATER QUALITY DATA

The table below lists all the drinking water contaminants that were detected for the 2017 calendar year. The presence of these contaminants does not necessarily pose a health risk. The testing for these compounds is part of our routine analytical practice of protecting your health. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2017. We monitor for some contaminants less than once per year, and for those contaminants, the date of the last sample is shown in the table.

REGULATED CONTAMINANTS							
<u>Contaminant (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Highest Level Found</u>	<u>Range</u>	<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
Physical Characteristics							
Turbidity (NTU)	NA	TT = 1	Highest Level Found 0.08	Monthly Averages 0.05 to 0.06	2017	None	Soil runoff. Turbidity is a measure of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.
		TT = < 0.3 95 % of the time	100 % of samples are below the MCL				
Inorganic Contaminants							
Fluoride (ppm)	4	4	0.63	NA	02/27/17	None	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	0.045	NA	02/27/17	None	Run off from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Disinfection & Disinfection By-Products							
Chlorine (ppm)	MRDLG 4	MRDL 4	Highest Quarterly Average 1.15	Monthly Averages 0.84 to 1.29	2017	None	Water additive used to control microbes.
Total Trihalomethanes (ppb) Stage 2 Sites	No goal for the total	80	Highest LRAA 33	14.8 to 52.2	2017	None	By-product of drinking water chlorination.
Haloacetic Acids (ppb) Stage 2 Sites	No goal for the total	60	Highest LRAA 17	13.6 to 24.1	2017	None	By-product of drinking water chlorination.
Disinfection By-Product Precursor							
Total Organic Carbon (ppm)	MRDLG NS	MRDL TT	NR	Seneca Water Plant met requirements	2017	None	Naturally present in the environment.
Lead & Copper Rule							
Lead (ppb)	0	AL = 15	90 th percentile 0.71 1 > AL	ND To 23	2016	None	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	1.3	AL = 1.3	90 th percentile 0.062 0 > AL	ND to 0.086	2016	None	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Radioactive Contaminants							
Gross alpha excluding radon & uranium (pCi/L)	0	15	1.4	1.4 to 1.4	2015	None	Erosion of natural deposits.

UNREGULATED CONTAMINANT MONITORING RULE 3 (UCMR3)

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of certain contaminants in drinking water and whether it needs to regulate those contaminants in the future. The City of Seneca was monitored for three quarters by SCDHEC for unregulated contaminants in the calendar year 2014.

UNREGULATED CONTAMINANTS					
<u>Contaminant (units)</u>	<u>MCLG</u>	<u>MCL</u>	<u>Level Detected</u>	<u>Sample Date</u>	<u>Typical Sources</u>
Strontium (ppb)	Undetermined	NA	Water Plant: 8.8 – 9.8 Distribution System: 9 - 12	2014	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.
Vanadium (ppb)	Undetermined	NA	Water Plant: ND – 0.25 Distribution System: ND – 0.29	2014	Naturally-occurring element and is commonly used as vanadium pentoxide in the production of other substances and as a catalyst.
Chromium-6 (ppb)	Undetermined	NA	Water Plant: ND – 0.1 Distribution System: 0.071 – 0.17	2014	Naturally-occurring element used in making steel and other alloys; chromium-3 or chromium-6 are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.
Chromium (total)* (ppb)	100	100	Water Plant: ND Distribution System: ND	2014	Naturally-occurring element used in making steel and other alloys; chromium-3 or chromium-6 are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.
Chlorate (ppb)	NA	Undetermined	Water Plant: ND – 230 Distribution System: ND - 160	2014	Agricultural defoliant or desiccant; disinfection by-product; and used in the production of chlorine dioxide.

* Monitoring for total chromium – in conjunction with UCMR3 Assessment Monitoring – is required under the authority provided in Section 1445(a)(1)(A) of SDWA.

THE ENVIRONMENTAL PROTECTION AGENCY REQUIRES THAT ANNUAL WATER QUALITY REPORTS CONTAIN THE FOLLOWING STATEMENTS

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 calling the EPA's Safe Drinking Water Hotline (**1-800-426-4791**).

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 from infections. These people should seek advice about drinking water from their 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**).

WHAT IF I HAVE QUESTIONS?

We would be happy to talk with you. For additional information or questions about this report contact:

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(864) 885-2735

Seneca Light & Water Plant is managed by the City of Seneca. Regularly scheduled meetings of the City Council occur on the second Tuesday of every month in City Hall at 6:00 p.m. Please feel free to participate in these meetings.

You can also find information about the City of Seneca on our web site:

<http://www.seneca.sc.us>

For more information on drinking water, call EPA Safe Drinking Water Hotline:

[1-800-426-4791](tel:1-800-426-4791)

Visit the EPA web site:

<http://www.epa.gov/ogwdw>

Visit the SCDHEC web site:

<http://www.scdhec.net/water>

Este informe contiene información muy importante sobre la calidad del agua en su comunidad. Favor de hablar con alguien que puede traducirlo para usted.