

STOCKBRIDGE WATER QUALITY REPORT 2016

VOLUME 19, SPRING 2017, P.W.S.I.D. # 1283003

WRITTEN BY MICHAEL P. BUFFONI, WATER SUPT.

Whom to Call

Water problems, meter problems, leaks, fire hydrants, water quality, main breaks, and miscellaneous questions:

Stockbridge Water Department

298-4067, 298-5581

M-Thu 7am-3:30pm, Fri 6am-2:30pm

Billing information, account information, shutting off or turning on water service, meter problems:

Stockbridge Town Offices

Collectors Office 298-4170 Ext 4,
9am-4pm

Emergency Water Problems

Stockbridge Police Dept.

298-4179

Who is the Water Department?

Michael Buffoni- Water Supt.
water@townofstockbridge.com
Cell-413-626-4552

Tony Campetti-Asst. Operator
wwtp@townofstockbridge.com
Cell-413-626-4553

Mark Viola Jr.- Asst. Operator
Cell-413-626-4554

The Water and Sewer Commission

Don Schneyer, Chairman
Peter Socha, Commissioner
Tom Schuler, Commissioner

The Commission meets on the first Tuesday of each month at 4:30pm in the Town Offices. All town residents are encouraged to attend. If you wish to be put on the agenda to discuss a particular issue you must register 10 days prior. You may call the Town Hall at 298-4170 to do so, or see us on the web at www.townofstockbridge.com

Annual Water Quality Report

Welcome to our 19th annual report! This Newsletter will help keep our water customers informed about upcoming projects; local, state and federal policies, regulations and guidelines. If you have any questions about the water system, please feel free to contact us at 298-4067 or 298-5581. We encourage all residents to tour both the

Water Filtration and Wastewater Treatment facilities, located on Route 102 in Stockbridge.

Where Does Our Water Come From?

The Town's reservoir is located on Averic Road in Interlaken. The town watershed has a D.E.P. approved Watershed Protection Plan which helps control activities that could have a negative effects on our water quality. We are very fortunate to own our entire watershed area which is all undeveloped forest. The watershed consists of 522 acres in which the Water Dept owns and controls 366 acres of forest around our 40 acre reservoir. The reservoir holds approximately 132 million gallons of water. The water is gravity-fed to the Filtration facility located on Route 102 in Stockbridge. Once the water is filtered, it is either pumped directly to the homeowner or to storage which consists of two 156,000 gallon storage tanks located in Interlaken or the new 603,000 gallon tank at Marian Fathers.

The water provided from the Stockbridge Water Filtration Facility is safe, clean and odor free.

According to state regulations we are required to include the following paragraphs.

“Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk.”

“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 from their health care providers.”

“Sources of drinking 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.”

Questions????

Q: Is Fluoride present in the water?

A: Yes, there are small, detectable amounts of naturally-occurring Fluoride in the water, and we do not add any. Although there is a very small amount of fluoride present in the water, we still recommend that brushing your teeth with toothpaste is the best way to fight cavities!

Q: What causes red or yellow water?

A: Red or yellow water is caused by minute amounts of iron from the water pipes. It does not affect the safety of the water, but makes the color of the product somewhat unappealing.

Contaminants in Source Water (Continued page over)

Microbial Contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife. The Water Department conducted 90 routine microbial (coliform) tests during 2015, all of which turned out negative in detecting this form of contaminant.

Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. The Town tests for these substances in accordance with state and federal regulations.

Radioactive Contaminants can be naturally-occurring or be the result of oil and gas production, and mining activities. The Town tests for these substances under state and federal regulations as well.

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

Organic chemical contaminants, include synthetic (SOC), volatile (VOC) and inorganic (IOC) chemicals that are by-products of industrial processes and petroleum production and can also

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come from gas stations, urban storm water runoff, and septic systems. The last round of testing done for our water system was done; SOC's - 4/25/12, 45 contaminants were tested for and all were "not detected" in Stockbridge water. IOC's were last tested for 11/16/2016, 13 contaminants were tested for, sodium and fluoride showed detectable limits and the remaining 11 were "not detected in our water. The current levels of sodium and fluoride can be seen in the last page of this report in the "water quality data table" VOC's were last tested 5/21/14, 56 contaminants were tested for, and of these 56 contaminants 2 had detectable limits. Chloroform and Bromodichloromethane are disinfection byproducts and the current levels of these are listed at the end of this report in the "water quality data table".

Perchlorate Testing

Perchlorate is now being tested for in the drinking water. We have tested for this since 2004. Perchlorate is a chemical widely used as a propellant in missiles, fireworks, and explosives. It has been found in surface and groundwater supplies around military operations. The health effects of ingesting Perchlorate is mainly thyroid problems. Perchlorate disrupts the thyroid glands ability of iodide uptake. The last sample taken was on 9/23/11 with a non-detection of Perchlorate.

Water Treatment Process for Stockbridge

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through two types of filtering units-an adsorption clarifier and a mixed media filter bed.

The process begins with aluminum sulfate being added to the water at an established rate. This prompts the small particles to coagulate, or stick together and form particles of increasing size. The chemically treated water then flows into the adsorption clarifier, which is a chamber filled with buoyant adsorption media. As the turbulent water passes through this unit, the large particles adhere to the beads. This effectively removes up to 75% of all impurities. The cleaner water then flows onto a filter bed. The filters are comprised of layers of garnet sand, silica sand, and anthracite coal, which trap the remaining particles. Over time, filters start to clog and need to be cleaned using a high flow backwash process.

All chemicals used for coagulation are approved for water treatment by the American National Standards Institute and by the National Sanitation Foundation. Chemicals also have to meet

performance standards established by the American Water Works Association.

The water is sampled and tested in accordance with state and federal requirements. We also do additional tests for operational data.

Water Disinfecting Techniques for Stockbridge

All reservoirs and some groundwater sources contain numerous microorganisms, some of which can cause people to become sick. To eliminate the disease-carrying organisms, it is necessary to disinfect the water.

Disinfecting does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all microorganisms, even though most are not harmful. The town of Stockbridge Water Department uses sodium hypochlorite (known to most as *Chlorine*) as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. When combined with proper filtration, disinfecting with chlorine has been proven effective at ensuring that water is free of harmful organism and safe to drink.

The Lead and Copper Issue

Corrosiveness: In order to minimize the leaching of lead and copper in home plumbing systems, the pH, or corrosivity, is monitored and adjusted. Water provided by Stockbridge is basically lead free when it leaves the reservoir but household plumbing and some individual building service lines can contain lead that is susceptible to corrosion and leaching into tap water.

Stockbridge water has a pH. Of 7.2 after treatment and disinfection, which is still a little corrosive. So we adjust our pH. With a chemical called sodium hydroxide. The chemical is fed into the water with a metering pump as it is pumped from the plant to our customers and storage.

The last round of 12 samples taken throughout the system were collected in the summer of 2016. The MassDEP sets the limits and our last round of samples passed. See the results in the "Water Quality Data Table". The next round of samples will be collected summer 2019.

Lead in drinking water

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. Stockbridge Water Dept. 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 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 Water Hotline or at <http://www.epa.gov/safewater/lead>

S.W.A.P.

Surface Water Assessment Program

In 2003 a SWAP report was done on our watershed area by the DEP. This was done to see how vulnerable our water supply is to contamination due to certain land uses within our recharge area. Our system was in the moderate risk bracket. Contaminants can range from buried fuel tanks, septic systems, roads etc. Due to the lengthy report, if any of our customers would like a copy, call us at the above phone number.

Water Service Ownership

In the event of a water customer's service breaking or needing to be replaced, the customer is responsible for their service from the house to the water main. The town is responsible for the water main only. When a service is replaced, the water dept. will assist the contractor the homeowner obtains to do the job. The water dept. will connect the new service to the water main and install a new shut-off and shut-off box at no charge. We urge our customers with old iron pipe services to have them replaced with copper tubing. It seems like they always break in the winter months. This drives up the cost of repair to the homeowner do to frost, safety issues with plowing, and the availability of blacktop if need be. Another step to consider is to have your plumber check the water pressure at the meter.

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High pressure (80 lbs. +) can cause water hammer and damage to plumbing fixtures.

Completed & Upcoming Projects

The Church St and Quiet Knoll Rd water tank replacement projects will finish up this construction season. The new water tank was almost completed last fall. The tank is constructed and needs to be painted and the roof railings installed. About 350' of new 12" ductile iron water main from the tank to Quiet Knoll Rd will be installed this spring and tested and the new tank will be put into service. Once the new tank is up and running the old steel tanks will be demolished and that area will be restored to woods. Then the tank area site work will be completed and numerous screening trees will be planted.

We will also be replacing approximately 3,055' of circa 1891 10" cast iron on Church St with new 12" ductile iron. During this project all water customers will receive a new 1" copper water service from the main with a new shut off and the contractor will hook into the customers' existing line out near the street.

Cross Connection Control Program

The Water Dept. has an extensive cross connection control program. (CCCP) A cross connection is within the plumbing of a building where a potable source of water and a non-potable source are inter-connected. For example; a home owner may have a well and town water. The water Dept. doesn't know if the home owners well is contaminated. If the well pressure tank is set higher than the town water pressure, the well water would enter the town's water system. Another type of cross connection can be with equipment such as fertilizing equipment, photo developing, fire sprinkler systems, dentist offices, wastewater plants, residential fire sprinkler system, residential irrigation system, and the list goes on. The Water Dept tests approximately 100 devices annually. 2/3rds of the devices are tested twice a year due to high hazard situations. This program generates approximately \$8,000 in revenue for the water surplus fund annually as we charge \$50 per test. The licensed coordinator/tester for this program is Water Supt. Michael Buffoni. For information on our cross connection control program and backflow device owner information please go to the town website

under the "public works" tab @ www.townofstockbridge.com

Stats-Info

In 2016 we had 2 water leaks and 1 service line replacement. We had 2 new customers come onto the water system. The water plant treated & pumped 60.5 million gallons of water last year. There are 708 services connected to the water system. 146 fire hydrants, 25.2 miles of water main, 714 water meters. Water rate is \$3.95 per 100 cubic feet. 100 cubic feet of water is 748 gallons (\$.00047 per gallon); quite a bit cheaper than a gallon of water at the store.

Water Meter Program

With about 10 meters left to be installed in residences we are about done installing meters. I think the hardest part was contacting the residents (that's why we have 10 left to install) and making the appointments! The new meters have helped in accurate billing, water conservation which in turn helps us with a newer DEP requirement...RGPCD.

"Residential gallons per capita per day" This requirement has us prove to DEP that our residential customers are using less than 65 gallons per person per household. If our number is above the threshold we will have to do a "System Demand Management Plan" We serve 634 residential customers in the system which totals 1,548 people. The 2015 metered use on all residential accounts was 30.1MG which is 53 gallons/person/day. When this requirement first started we were way over the 65 gallon threshold. The meters have helped us with a more accurate read on consumption.

Source Water Protection

DEP performed a watershed inspection on March 27, 2013. DEP representatives from our western regional office and the Boston office are came to evaluate our Zone A of the

watershed. The Zone A of a surface water supply is 400' from the bank of the reservoir and 200' from the bank of any tributary supplying the reservoir. New Zone A delineations were drawn up on all the tributaries feeding the lake on the entire watershed. The zone A is 400' from the shoreline of the main lake and 200' from the edge of any tributary, so from the edge of a tributary on both sides making the zone A 400' wide. Our next inspection will be done this summer.

Budget

The Water Dept is set up as a "special revenue" fund, as is the Sewer Dept. This was set up by town officials back in 1972 when the Stockbridge Water Co. was purchased by the town. This was done due to the size of the 2 systems, to be a true enterprise fund would sky rocket the water and sewer rates. While not being a true enterprise fund we are a self-sustaining fund. Water and sewer customers paying their bills fund the entire operating budget and all the salaries for the Water & Sewer Dept employees therefore not affecting the tax rate. The 2 funds rely on the setting of the rates to create a surplus fund to do our own projects without affecting the tax rate. The large capital projects that affect the tax rate are projects the surplus fund cannot handle.

STOCKBRIDGE WATER QUALITY REPORT 2015

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WATER QUALITY DATA

The table below lists all the drinking water contaminants that we detected during the 2016 calendar year. *The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk.* Unless otherwise noted, the data presented in this table is from testing done January 1-December 31, 2016. The state requires us to monitor certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Terms & Abbreviations

- **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.
- **SMCL:** Secondary Maximum Contaminant Level
- **Action Level (AL):** the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- **n/a:** not applicable, no set limits
- **nd:** not detectable at testing limit
- **ppb:** parts per billion or micrograms per liter
- **ppm:** parts per million or milligrams per liter
- **pCi/l:** picocuries per liter (a measure of radiation)
- **ug/l:** micrograms per liter
- **ara:** annual running average
- **waiver:** permission from DEP not to test that year because of past results
- **90th percentile:** out of 10 homes, 9 were below action level
- **MRDL:** max. residual disinfectant level
- **Turbidity/NTU,** cloudy appearance of water caused by suspended and colloidal matter (clay, silt)

2016 Testing Data * = previous year(s)

CONTAMINANT	MCL	SMCL	Stockbridge Water	Range of detections	Violations	Typical Source of Contaminant	Sites Above Action Limit
HAA5	60ug/l		26.7 ug/l, ara	6.0-48.0 ug/l	No	Chlorine Byproducts	0
Trihalomethanes	80ug/l		41.7 ug/l, ara	24-53 ug/l	No	Chlorine Byproducts	0
Sodium	None set		7.8 mg/l	n/a	No	Natural/ treatment	0
Nitrate	10mg/l		0.00 mg/l ara	n/a	No	Low natural-hi septic	0
Combined Radium	5 pCi/L		0.36 pCi/l ara	n/a	No	Naturally Occurring	0
Lead	.015 mg/l		.0052 mg/l 90 th percentile	0.0-.30 mg/l	No	Household Plbg	1 **
Copper	1.3 mg/l		0.86 mg/l 90 th percentile	.043-1.0 mg/l	No	Household Plbg	0

** One household (second home) tested was over the lead limit, retested and was under the limit.

Calcium*		None	16 mg/l	n/a	No	Natural Deposits	0
Magnesium*		None	3.6 mg/l	n/a	No	Natural Deposits	0
Manganese		.05	.004 mg/l	n/a	No	Natural Deposits	0
Potassium*		None	.58 mg/l	n/a	No	Natural Deposits	0
Chloride*		250	5.9 mg/l	n/a	No	Natural, Mains	0
pH Adjusted		6.5-8.5	7.2 - 8.5		No	Treatment	0
Alkalinity*		None	240 CaCO3	n/a	No	Natural Deposits	0
Free Chlorine			.4 - 2.0 mg/l		No	Treatment	0
Total Dis. Solids*		500	300 mg/l	n/a	No	Natural, Treatment	0
Hardness*		None	56 mg/l	n/a	No	Natural Deposits	0
Turbidity, NTU		None	.01 - 2.7		No	Natural Deposits	0
Sulfate*		250	20.0	n/a	No	Natural	0
Zinc*		5.0	.0035 mg/l	n/a	No	Natural	0
Iron		.3	.034	0.0-.077	No	Natural	0