

Village of Potsdam

Annual Drinking Water Quality Report for 2008

The Potsdam Water Treatment Plant (Federal ID # 4404397) on Raymond St. in the Village of Potsdam is committed to providing the best possible drinking water for its customers. Towards this end, we are providing an annual report detailing our source, methods of treatment, goals, recommendations for water conservation, major modifications, cost, and test results of our finished product - the water you rely on.

We are also including information about some of the specific concerns that you may wish to be informed of. If you have any questions about treatment or testing methods, Please feel free to Call Robert Henninger at the Treatment Plant. 265-7033. For interpretation of test results, and reasons for concern about some of the substances tested for, please call the New York State Department of Health at 386-1040. For an opportunity to participate in decisions that affect drinking water quality, Please call the Village Offices (315-265-7480) for a schedule of Village Board of Trustees Meetings.

Source of Supply: The Potsdam Water Treatment Plant draws its water from the Racquette River, which provides an abundant amount of water for Village needs. As a surface water source, it is highly colored with relatively low turbidity. It is subject to rapid changes in water quality and contamination with bacteria from wildlife and human activity. The NYS Dept. of Health has performed a source water assessment for this source, and found an elevated susceptibility to contamination. The amount of pasture in the area results in a high potential for protozoa contamination. However, there is reason to believe that land cover data may over estimate the percentage of pasture in the assessment area. While there are some facilities present, permitted discharges do not likely represent an important threat to the source water quality based on their density in the assessment area. However, The total amount of wastewater discharged to surface water in this assessment area is not high enough to further raise the potential for contamination. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include mines. Finally, it should be noted that relatively high flow velocities make river drinking water supplies highly sensitive to existing and new sources of microbial contamination.

The dominant considerations for defining natural sensitivity ratings for rivers are their relatively shallow depth and high flow rate and directionality. Microbial contaminant categories are rated high for rivers, because some of these contaminants can travel great distances in flowing water with little die-off or sedimentation.

The organic and other chemical categories are rated medium because they tend to show some volatilization and inactivation. The phosphorus category is rated low because phosphorous does not generally limit algae growth in low residence time (high flow rate) water bodies such as rivers. This emphasizes the high natural sensitivity of river systems to these contaminants. In these cases, small changes in land cover can result in substantial degradation in water quality.

Potential sources of contamination of this source includes: transportation routes, pipelines, landfills, mines, Inactive Hazardous Water Sites (IHWS), chemical bulk storage, oil storage facilities, agricultural land and permitted discharges from wastewater treatment plants.

Population Served: Potsdam had a population of under 10,000 in the 2000 Census. There are 1621 water service connections.

Quantity of Water Treated: We calculate our withdrawal from the river to be approximately 1.2 million gallons each day, and use between 100,000 and 200,000 gallons each day for process water which is used for filter backwash, waste water discharges to the Water Pollution Control Plant, and other in-plant uses. This leaves a balance delivered to the distribution system of about 1.0 million gallons. The amount lost from the distribution system due to leaks or intentional flushing is unknown, but not believed to be substantial. This correlates to an annual withdrawal of around 438 million gallons, with annual delivery estimated to be about 365 million gallons.

Water Quality Testing: 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), or by accessing their website at (www.epa.gov/safewater/) or the DOH website at (www.health.state.ny.us)

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 supply systems. Food and Drug administration 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 systems 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)

The sources of drinking water (both tap and bottled water) includes 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 activities. Contaminants that may be present in source water include: microbiological contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure tap water is safe to drink, the State and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the EPA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The Potsdam Water Treatment plant tests its water under guidelines from The New York State Department of Health. The tests performed, frequency of tests, and results are available in Table 1. We are pleased to report that all tests are within the required

parameters, and the water continues to be safe to drink. Although a few distribution tests may be outside of the parameters, re-tests of the same sample was within parameters. We report all samples in the interest of providing complete data.

Some of the terms and units may be unfamiliar. Most parameters are measured in mg/L, which is milligram per liter. This is identical to the old system of ppm, or parts per million, which is one part contaminant in one million parts of water. Some contaminants are measured in ug/L, which is micrograms per liter. This is equal to 1/1000 of a mg/L or ppm, or one part contaminant per billion parts of water.

Although the presence of contaminants in drinking water does not necessarily pose a health risk, for each hazardous or potentially hazardous contaminant, a maximum safe level has been established. This is known as MCL which stands for the Maximum Contaminant Level, which is the highest level of a contaminant allowed in drinking water. To provide a margin of safety, we treat our water to comply as closely as our abilities allow, to a Maximum Contaminant Level Goal (MCLG) This is the level of a contaminant in drinking water below which there is no known or expected risk to health.

There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. We disinfect our finished water with sodium hypochlorite, which provides a Free Chlorine Residual. The maximum and minimum amount of disinfectant is regulated, as listed in Table 1. The Maximum Residual Disinfectant Level (MRDL) is the maximum amount allowed. The Maximum Residual Disinfectant Level Goal (MRDLG) is the level 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 contamination.

Violations: The Village was notified of three violations in 2008. In May, the concentration of Haloacetic acids exceeded regulatory limits. In February and May, the running annual average for Haloacetic acids exceeded the regulatory limits. Public notification was published in the local newspaper. The Water treatment plant operators are working with the State Health Department to bring this average back into compliance. The analysis for Priority Organic Constituents was not performed in calendar year 2008. This test was performed in January of 2009. None of the constituents were detected.

Detected Contaminants:

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Our highest single distribution system turbidity measurement for the year occurred on November 5, 2008 (4.85 NTU). State regulations require the monthly average of the results of all distribution samples must always be less than 5.0 NTU. Our average was 0.45 NTU. The regulations also require that 95% of the filter effluent turbidity samples collected have measurements below 0.3 NTU. 100% of our filter effluent test results were less than 0.3 NTU.

Lead and Copper: Lead and Copper detected in residential samples generally occurs as a result of corrosion in the home plumbing system, and the erosion of natural deposits. Although we add corrosion control treatment at our plant, results of tests performed in 2006 indicated that some homes had elevated lead and copper levels. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Fluoride: Fluoride is added to the water at our plant to enhance dental health. The highest level recorded was 1.19 mg/L on December 30, 2008. This reading did not exceed the regulatory limit of 2.2 mg/L. Our target concentration for fluoride is 1.0 mg/L. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 mg/L (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. During 2008, monitoring showed fluoride levels in your water were in the optimal range 85% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/L MCL for fluoride.

Barium: Barium in the water may be the result of discharge of drilling wastes, discharge from metal refineries, or, most likely, the erosion of natural deposits. Barium was detected at 0.0098 mg/L, less than the regulatory limit of 2.0 mg/L. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Total Trihalomethanes: Total Trihalomethanes are the by-product of drinking water disinfection needed to kill harmful organisms. These are formed when source water contains large amounts of organic matter. Our average trihalomethane result was 68 ug/L, less than the regulatory limit of 80 ug/L. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Haloacetic acids: Haloacetic acids are also a by-product of drinking water disinfection needed to kill harmful organisms. Our average haloacetic acid result was 48.4 ug/L, below the regulatory limit of 60 ug/L for calendar year 2008. However, Haloacetic acids are also calculated on a running annual average. In the running year including the last three quarters of 2007 and the first quarter of 2008, the average was 65 ug/L, and in the running year composed of the last two quarters of 2007 and the first two quarters of 2008, the average was 61 ug/L. For these occurrences, the Department of Health issued notices of violation to the Village. The Village issued public notifications concerning these events. In a joint effort between the Village and the Health Department, the level of chlorination was studied, with a net reduction in chlorination. Since these events occurred, the running annual average for Haloacetic Acids has

been below the regulatory limit. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Phosphate: Phosphate is added to the finished water to inhibit corrosion in distribution piping and residential plumbing. Our phosphate product is approved by the National Sanitation Foundation (NSF). We add phosphate at less than the NSF allowable limit (16 mg/L), and it has no known adverse health effects.

Treatment Methods: Water is withdrawn from the Racquette River, and pumped into the plant with lowlift pumps. It receives conventional treatment using automated controls for precision dosing of treatment chemicals and flows.

The Water Treatment Plant, built in 1983, is in good condition. The Plant was upgraded to provide better control of the processes to meet the strictest standards. This upgrade was completed and fully operational by 2000.

Conservation Measures: Water is a valuable resource, and should not be wasted. While a good value, it also is expensive to waste water. To minimize the quarterly water bills, all leaks should be repaired as soon as possible. In addition, water saving toilets and other appliances are available, and are effective in reducing water use.

1. Check all faucets, toilets, and outlets for leaks often. Even a small drip wastes water 24 hours per day, adding up to a significant waste of water and expense.
2. Insulate hot water pipes. This reduces the amount of water that is wasted before the temperature is appropriate.
3. Water lawns and gardens only when necessary, always at night or in the cool of the day. Evaporation on a hot day is a significant portion of the water used. Water deeply to reduce frequency. A heavy mulch in gardens and flower beds reduces evaporation. Don't cut the lawn too short. Longer grass needs watering less frequently.
4. Install water saving shower heads, flow limiters, or toilet tank displacement devices.
5. Use automatic dishwashers and washing machines only with full loads.
6. Do not leave water running while shaving or hand washing dishes. Rinse razor or clean dishes in filled sink or basin.
7. Keep drinking water in the refrigerator, rather than letting it run until cool.
8. Do not run the hose while washing cars. Turn it on to wet down or rinse, shut off while washing.
9. Turn off water flow while lathering up during showers. Bathe in partially filled tub.
10. Use broom, not a hose to clean driveways.

Distribution System Modifications: In 2008, the Village added one 2" service and two 1" services.

Cost of Water: The operating budget for the Water Treatment plant exceeds \$125,000 per year, which is the state threshold that requires this annual report. The cost of operating, maintaining and upgrading the distribution system is also considerable. This is reflected in the 2008 charge of \$4.82 per 1000 gallons of water delivered. This roughly correlates to a household of four using about 16,000 gallons per quarter, having an average annual charge of \$308.48.

Cryptosporidiosis and Giardiasis: Cryptosporidiosis and Giardiasis are intestinal illnesses caused by microscopic parasites. While they have not been identified in our water supply, they are of concern for people with weak immune systems, such as chemotherapy, dialysis or transplant patients, and people with Crohn's disease or HIV infection. People with weakened immune systems should discuss with their health care providers the need to take extra precautions such as boiling water, using a certified bottled water, or a specially approved home filter. Individuals who think they may have Cryptosporidiosis or Giardiasis should contact their health care provider immediately.

For Further Information: If you need additional information on Cryptosporidiosis and Giardiasis, or have any questions about any part of this report, or on subjects not discussed in this report, please feel free to Call Mr. Robert Henninger at the Water Treatment Plant at 265-7033, or the New York State Department of Health 386-1040.

TABLE OF DETECTED CONTAMINANTS

CONTAMINANT	VIOLATION YES/NO	LEVEL DETECTED (AVE/MAX) (RANGE)	UNIT MEASUREMENT	MCLG	REGULATORY LIMIT (MCL, TT, OR AL)	LIKELY SOURCE OF CONTAMINATION
TURBIDITY	NO	(0.45 / 4.85) (0.08 - 4.85)	NTU	N/A	5.0 NTU	Naturally occurring
CHLORINE	NO	(1.75 / 2.65) (1.05 - 2.65)	mg/L	N/A	min. 0.01, max 4.00	Added to water as disinfectant
FLUORIDE	NO	(0.91 / 1.19) (0.17 - 1.19)	mg/L	N/A	2.2 mg/L	Naturally occurring, added to water to prevent tooth decay
PHOSPHATE	NO	(0.62 / 0.97) (0.21 - 0.97)	mg/L	N/A	N/A	Naturally occurring, added to water to reduce pipe corrosion
TOTAL TRIHALOMETHANES	NO	(68 / 84) (46 - 84)	ug/L	80 ug/L	N/A	Byproduct of drinking water chlorination needed to kill harmful organisms
HALOACETIC ACIDS	YES	(48.4 / 65) (28 - 65)	ug/L	60 ug/L	N/A	Byproduct of drinking water chlorination needed to kill harmful organisms Naturally occurring.
LEAD	NO	(5.3 / 67) (<1.0 - 67)	ug/L	15 ug/L	15 ug/L	Corrosion of household plumbing systems, Erosion of natural deposits
COPPER	NO	(0.168 / 0.39) (0.038 - 0.39)	mg/L	1.3 mg/L	1.3 mg/L	Corrosion of household plumbing systems, Erosion of natural deposits
NITRATE	NO	280	ug/L	N/A	10000 ug/L	Erosion of natural deposits Runoff from fertilizer use
TOC	NO	(2.9 - 5.9) (1.9 - 5.9)	mg/L	N/A	N/A	Naturally occurring
BARIUM	NO	9.8	ug/L	2000 ug/L	2000 ug/L	Erosion of natural deposits

NOTES:

1. Lead and Copper monitoring: The results of the lead and copper tests above represent the 90th percentile and range of levels detected. Every three years, we are required to test 30 residences for lead and copper. These results are from 2006. We will be testing again in 2009. The 90th percentile for Lead was 13 ug/L. There were 2 residences above the action level. The 90th percentile for Copper was 0.33 mg/L. There were no residences over the action level for Copper.

2. Trihalomethanes include Bromodichloromethane, Bromoform, Chloroform, and Dibromochloromethane. Haloacetic acids include Dibromoacetic acid, Dichloroacetic acid, Monobromoacetic acid, Monochloroacetic acid, and Trichloroacetic acid. Determination of violation based on running annual averages.

3. TOC is Total Organic Carbon. The results reported in the chart above represent the water entering the distribution system from the plant. We also test the river water entering the plant. We are required to remove 45% of TOC in our filtration process. In 2008, we removed an average of 49.7% of TOC.

4. Phosphate is added to the finished water to inhibit corrosion in distribution piping and residential plumbing. Our phosphate is approved by the National Sanitation Foundation. We add phosphate at less than the NSF allowable limit, and it has no known adverse health effects.

5. The table above represents only contaminants detected in the drinking water in 2008. During 2008, we also tested for many other contaminants, concentrations of which were less than the detection level. These include:

Metals and Inorganics - (Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Mercury, Nickel, Selenium, and Thallium.);

Bacteriological tests - (Fecal Coliform Bacteria (E. Coli is among these)), and;
Organic chemicals - (Pesticides, Herbicides, Solvents, Fuel constituents, etc.)

These tests were required by New York State law. None of these chemicals were detected in your drinking water.