



TOWN OF GREENBURGH

Consolidated Water & Sewer Districts

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Albert S. Regula - Superintendent

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2006 ANNUAL WATER QUALITY REPORT

Dear Consumer: The Town of Greenburgh Consolidated Water District No. 1 (herein referred to as the "District") is pleased to provide our **Annual Water Quality Report for 2006**. This report provides an overview of last year's water quality. This is the tenth annual report issued in compliance with section 1150 of the New York State Public Health Law and the federal EPA Consumer Confidence Report regulation (40 CFR part 141 Subpart O) and this report provides important information about the District's water quality and is intended to raise your understanding and awareness of the need to protect our drinking water sources.

WATER SYSTEM INFORMATION

The District is owned and operated by the Town of Greenburgh. The State public water system identification number is 5903429 and the Westchester County Health Department facility I.D. number is 00028. The District contact person is Randy P. Cairns, Asst. Superintendent and his phone number is (914) 993-1592. The Westchester County Health Department, Bureau of Environmental Quality has regulatory jurisdiction over the District and their phone number is (914) 813-5000. The Town Board, consisting of the Town Supervisor and four Councilpersons, are also the Water Board. We want you to be informed about your drinking water. If you want to learn more all official business of the District is conducted as part of the Official business of the Town during regularly scheduled public Town Board Meetings. These meetings are normally held the second and fourth Wednesday of each month at Town Hall at 7:30 PM. Only one meeting is scheduled for July and August.

SOURCE OF WATER SUPPLY

In general, 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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for the public health. The District purchases all of its water from the City of New York, Department of Environmental Protection - Bureau of Water Supply. This "surface" water originates in protected watershed areas 120 miles northwest of Greenburgh in the Catskill Mountains after which it travels through a N.Y.C. owned system. During 2006, our system did not experience any restriction of our water source.

TYPES OF TREATMENT:

The water we received from NYC's system had already undergone some of the required treatment prior to reaching us. This source water is of such high quality that it meets the requirements for a "Filtration Avoidance" waiver from the U.S Environmental Protection Agency (EPA). Additionally, NYC disinfects the water with chlorine and adds a small amount of fluoride (one part per million) to help prevent tooth decay. All treatment complies with the New York State Health Department and the U.S. EPA. The District performed additional treatment consisting of additional disinfection utilizing *chlorine* and corrosion control utilizing *blended liquid zinc orthophosphate* and *sodium hydroxide*.

WATER DELIVERED TO THE DISTRICT

The District serves a portion of the Town of Greenburgh and has an official population of 38,489 based on the 2000 census through 11,500 service connections. In 2006 a total of 3.006 billion gallons of water was purchased from New York City's Delaware/Catskill system for the Greenburgh Consolidated Water District. This was 5.1% lower than the previous year due largely to a cooler summer than in past years. Approximately 88% of the total was billed directly to consumers. The balance, or unaccounted-for water, was used for fire fighting purposes, flushing of the system to maintain water quality, hydrant use by Town trucks for street sweeping and sewer cleaning, distribution system leaks and unauthorized use. Of the total amount withdrawn from NYC's system, 14.4% or 431.5 million gallons was sold (wholesale) to other water districts leaving a District NET consumption of 2.574 billion gallons. This figure translates to an average daily consumption of 7.052 million gallons or a **daily water usage of 183.0 gallons per person per day**. The daily water usage per person per day for the City of New York in 2006 was 133.5 gallons. The water we receive from NYC's water distribution system is delivered to us by gravity from upstate reservoirs at low pressure. Since this pressure is not enough for domestic usage or for fire protection, the District must pump the water into our distribution system to reach all parts of the district.

TESTING AND ANALYSIS OF WATER SAMPLES:

In accordance with State and Federal regulations, the District routinely tests your drinking water for numerous contaminants. These contaminants include **total coliform bacteria, turbidity, inorganic compounds, lead and copper, nitrite, nitrate, volatile organic compounds, total trihalomethanes, Haloacetic acids and synthetic organic compounds**. The table presented below depicts which contaminants were detected in your drinking water. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Therefore, some of the

data, though representative of the water quality, is more than one year old. It should be noted that all drinking water, including bottled drinking water, may be reasonably 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 the Westchester County Health Department at (914-813-5000).

Table of Detected Contaminants

<u>Contaminant</u>	<u>Violation Yes/No</u>	<u>Date of Sample</u>	<u>Level Detected (Maximum)</u>	<u>Unit Measurement</u>	<u>MCLG¹</u>	<u>Regulatory Limit (MCL)²</u>	<u>Likely Source of Contamination</u>
<u>MICROBIOLOGICAL CONTAMINANTS:</u>							
Total Coliform	No	8/4/06 11/15/06	2 positive	n/a ³	0	MCL=2 or more positive samples in one month.	Recheck samples were negative.
Turbidity ⁴	No	7/2/06	1.52	NTU ⁵	n/a	5	Soil Runoff.
<u>RADIOACTIVE CONTAMINANTS:</u>							
Gross Alpha	No	2004	-0.1 - 05	pCi/L ⁶	0	15 ⁷	Erosion of natural deposits.
Gross Beta	No	2004	1.0 – 3.3	pCi/L	0	50 ⁸	Decay of natural deposits
Radium 226	No	2004	0.0 – 0.05	pCi/L	0	5 ⁹	and man-made emissions.
Radium 228	No	2004	-1.2 – 0.6	pCi/L	0	5 ¹⁰	“
<u>INORGANICS:</u>							
Barium	No	7/13/06	0.0165	mg/l	2	2	Erosion of natural deposits.
Chloride	No	7/13/06	10.8	mg/l ¹¹	n/a	250	Naturally occurring or indicative of road salt contamination.
Fluoride	No	7/13/06 ⁵	.79	mg/l	n/a	2.2	Erosion of natural deposits, Water additive that promotes strong teeth.
Magnesium	No	7/13/06	1.2	mg/l	n/a	n/a	Naturally occurring
Manganese	No	7/13/06	14.2	ug/l ¹²	n/a	300	Naturally occurring.
Sodium	No	7/13/06	9.4	mg/l	n/a	see note ¹³	Naturally occurring; Road salt; Animal waste.
Sulfate	No	7/13/06	6.81	mg/l	n/a	250	Naturally occurring.
Zinc	No	7/13/06	897	ug/l	n/a	5000	Naturally occurring; Water additive for corrosion treatment
Color (apparent)	No	7/13/06	<MRL ¹⁵	units	n/a	15	Large quantities of organic chemicals, decaying leaves, plants and soil organic matter.
<u>CORROSION RULE:</u>							
Lead	No	5/1–6/31/06 10/1-12/31/06	8.6 ¹⁶ (0-117.0) 4.6 (0-34.1)	ug/l ug/l	0	AL ¹⁷ =15	Corrosion of household plumbing systems.
Copper	No	5/1-6/31/06 10/1-12/31/06	0.15 ¹⁸ (0.015-0.19) 0.11 (0.015-0.17)	mg/l	0	AL=1.3	Corrosion of household plumbing systems.
<u>INORGANICS - NITRATE and NITRITE:</u>							
Nitrate	No	7/13/06	0.22	mg/l	10	10	Runoff from fertilizer

¹Maximum 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.

²Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

³“not applicable” or does not apply.

⁴Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

⁵Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

⁶Picocuries per liter (pCi/L) is a measure of the radioactivity in water.

⁷A MCL violation occurs when the annual composite of four quarterly samples or the average of the analysis of four quarterly samples exceeds the MCL.

⁸The State considers 50 pCi/L to be the level of concern for beta particles.

⁹MCL is 5 pCi/l combined with Ra 228.

¹⁰MCL is 5 pCi/L combined with Ra 226.

¹¹Milligrams per liter (mg/l) corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

¹²Micrograms per liter (ug/l) corresponds to one part of liquid in one billion parts of liquid (parts per billion=ppb)

¹³Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

¹⁵MRL (minimum reporting level) is the lowest concentration of a given analyte that a laboratory feels confident reporting to data users.

¹⁶The level presented represents the 90th percentile of the 60 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the values detected at customer's taps in the distribution system.

¹⁷Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

¹⁸The level presented represents the 90th percentile of the 60 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the values detected at customer's taps in the distribution system.

<u>Contaminant</u>	<u>Violation Yes/No</u>	<u>Date of Sample</u>	<u>Level Detected (Maximum)</u>	<u>Unit Measurement</u>	<u>MCLG</u>	<u>Regulatory Limit (MCL)</u>	<u>Likely Source of Contamination</u>
<u>DISINFECTION BYPRODUCTS:</u>							
Total Trihalomethanes (TTHMs - chloroform, bromodichloromethane, dibromochloromethane, and bromoform)	No	4 sites quarterly	38.25 (22.8-49.8)	ug/l	n/a	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic Acids (mono-, di-, and trichloroacetic acid, and mono- and di-bromoacetic acid)	No	4 sites quarterly	35.40 (30.8-39.3)	ug/l	n/a	60	By-product of drinking water chlorination.
Chlorine Residual	No	2006 Year Avg.	1.56	mg/l	n/a	MRDL ¹⁹ =4	By-product of drinking water chlorination.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

NON-DETECTED CONTAMINANTS:

The contaminants listed below were required to be tested for in our drinking water. The results showed that **none of these contaminants were detected** in our water. These Non-Detected contaminants are: Asbestos, Antimony, Arsenic, Barium, Beryllium, Cadmium, Iron, Mercury (Inorganic), Chromium Hexavalent), Nickel, Silver, Cyanide, Selenium, Thallium, Odor, Nitrite (as N), Benzene; 1, 3-Dichloropropane; 1, 3, 5-Trimethylbenzene; Bromobenzene, 2, 2- Dichloropropane; P & M-Xylene; Bromochloromethane; 1, 1-Dichloropropene; O-Xylene; Bromomethane; cis-1, 3-Dichloropropene; Aldrin, N-Butylbenzene; trans-1, 3-Dichloropropene; Carbaryl; sec-Butylbenzene; Ethylbenzene; Dalapon; tert-Butylbenzene; Hexachlorobutadiene, Di(2-ethylhexyl)adipate; Carbon Tetrachloride; ; Isopropylbenzene; Dicamba; Chlorobenzene; p-Isopropyltoluene; Dieldrin; Chloroethane; Methylene Chloride; Glyphosate; Chloromethane; n-Propylbenzene; Hexachlorocyclopentadiene; 2-Chlorotoluene; Styrene; 3-Hydroxycarbofuran; 4-Chlorotoluene, 1, 1, 1, 2-Tetrachloroethane; Methomyl; Dibromomethane; 1, 1, 2, 2-Tetrachloroethane; Oxamyl vydate; 1, 2-Dichlorobenzene; Tetrachloroethene, Picloram; 1, 3-Dichlorobenzene; Toluene; Propachlor; 1, 4-Dichlorobenzene 1, 2, 3-; Trichlorobenzene; Naphthalene; Dichlorodifluoromethane; 1, 2, 4-Trichlorobenzene; Methyl T-Butyl Ether; 1, 1-Dichloroethane; 1, 1, 1-Trichloroethane; Methyl Isobutyl Keytone; 1, 2-Dichloroethane; 1, 1, 2-Trichloroethane; 1,2-Dibromo-3-Chloropropane; 1, 1-Dichloroethene; Trichloroethene; 2,4,5-T; cis-1, 2-Dichloroethene; Trichlorofluoromethane; 1,2-Dibromoethane; trans-1, 2-Dichloroethene; 1, 2, 3-Trichloropropane; 1, 2-Dichloropropane; 1, 2, 4-Trimethylbenzene; Alachlor; Diquat; Aldicarb; Endrin; Aldicarb sulfone; Heptachlor epoxide; Aldicarb sulfoxide; Hexachlorobenzene; Atrazine; Lindane; Benzo(a)pyrene; Methoxychlor; Carbofuran; Pentachlorophenol; Chlordane; Polychlorinated biphenyls; Di(2-ethylhexyl)phthalate; Simazine; 2,4-D; Toxaphene; Dinoseb; 2,4,5-TP (Silvex); Vinyl chloride; Strontium 90; Tritium (HTO).

ANNUAL AVERAGE CHARGE:

The charge for water in the District for 2006 was \$2.39 per 1,000 gallons up through 500,000 gallons per month for in district users. Water consumed above 500,000 gallons per month is charged at \$2.88 per 1,000 gallons. The average residential household uses approximately 120,000 gallons per year which costs \$286.80 for the year for "in district" customers. Compared to the twenty largest water districts in Westchester County, Greenburgh Consolidated Water District No. 1 ranks sixth lowest in annual costs to customers.²⁰ Out of District customers pay a premium rate that varies with location.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2006, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements. After several years of adjusting and fine tuning our corrosion treatment we have received the designation of achieving "optimal" treatment from the Westchester County Health Dept, in 2006. This was demonstrated by the results of our Lead and Copper sampling program at the customers tap.

INFORMATION ON CRYPTOSPORIDIUM:

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. NYC has collected and analyzed for *Cryptosporidium* oocysts since 1992. The test results indicate the presence of *Cryptosporidium* in the source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a **few** weeks. However, **immuno**-compromised people are at risk of developing life-threatening illness. We encourage **immuno**-compromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

INFORMATION ON GIARDIA

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. *Giardia* is inactivated by disinfection. NYC has collected, analyzed and monitored source water samples for *Giardia*. Test results indicate the presence of *Giardia* in the source water. Current test methods do not allow us to determine if the organisms

¹⁹ Maximum Residual Disinfectant Level (MRDL) is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. MRDLs are currently regulated in the same manner as MCLs.

²⁰Rate Study by the Westchester Water Works Conference, Inc., Fall 2001.

are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where hand washing practices are poor.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Crypto-sporidium, Giardia and other microbial pathogens are available from the **Safe Drinking Water Hotline 1-800-426-4791**.

WATER CONSERVATION:

Water conservation does not have to mean suffering or inconvenience. It does mean making the most efficient use of the supply available. Water conservation means changing our habits permanently - being aware of water and thinking how much we can save every time we turn on a faucet, push the button to start a dish or clothes-washer, or flush a toilet. There are many things that you can do at home to cut back on unnecessary water use. Leaks can steal more than 10 percent of your water; in one month, a slow, steady drip can waste 350 gallons and ***an older toilet, without any telling sound, can sneak away enough water to fill a 10-foot cube.*** Drought Restrictions are Westchester County Law. For current restrictions go to web site

www.westchestergov.com.

Many water saving ideas are simply common sense:²¹

- Use only the water needed to do the task.
- Turn off the water when you are not using it.
- Fix leaks. Often this merely requires replacing a washer.
- Use appliances efficiently; run full loads or adjust water level.
- Water your yard slowly and only when necessary. Mulch your plants. You could cut your outdoor use in half.
- Reduce the number of toilet flushes - put used tissues or gum wrappers in a waste basket instead of flushing them away.
- Reduce the water used in each flush by inserting toilet tank dams or weighted, water-filled one-quart plastic bags or bottles into the tank. (Don't use a brick - it can disintegrate over time, and the gritty crumbs could clog the mechanism.)
- Take your water-conserving habits to school or work. Leaks or running faucets are wasting your money here, too. Notify the building superintendent when something needs to be fixed.

Want to keep your property looking good – while conserving water? The Cornell Cooperative Extension together with the “Water-Wise Council of New York” and the NYC Department of Environmental Protection have produced ***“The Water Saver’s Guide to Landscaping and Gardening”***. This full color step-by-step guide to choosing drought resistant plants and how to arrange them is available for \$15 from the:

Cornell Cooperative Extension of Rockland County, PO Box 1000, Thiells, NY 10984.

For more information, visit www.cce.cornell.edu/rockland or by contacting the Water Wise Council of New York, PO Box 475, Unionville, NY 10988-0475.

SYSTEM IMPROVEMENTS

The **Rum Brook Pumping Station and Treatment Plant** saw its second full year of operation supplying 100% of the water supply needs for the Village of Irvington. With the construction of 2500 ft. of new 16” water main and a new metering station in 2005 we anticipate the startup of supplying additional water to the Greenburgh system from this new pumping facility to our high service zone. This projects goals were to improve our ability to meet overall peak demands, provide an improved source of water to Irvington and provide a backup source in case of an emergency. The District has been investigating replacement of all water meters in the distribution system to include automatic meter reading. This replacement program will speed up the billing process and free up meter reading personnel to be able to handle more maintenance duties.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

²¹Reprinted from NYS DEC's the Conservationist, May-June 1988