

# WATER AUTHORITY OF GREAT NECK NORTH

EMERGENCY 24-HOUR TELEPHONE (516) 482-0210

## PUBLIC NOTICE Annual Drinking Water Quality Report For The Year Ending December 2013 PWS ID# 2902841

This ANNUAL DRINKING WATER QUALITY REPORT is furnished to the consumers of the Water Authority of Great Neck North pursuant to regulations in Part 5 of the New York State Sanitary Code, Section 5-1.72 and the 1996 Federal Safe Drinking Act Amendments, respectively. This report is designed to inform you about the water quality and services the Authority has delivered over the past year, and to give you other information regarding your water supply and conservation.

For Spanish-speaking consumers: Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

### 1. WATER SYSTEM INFORMATION

The Authority's office is located at 50 Watermill Lane, Great Neck, New York. The person in charge of operating the water system is the Superintendent of the Water Authority, Gregory Graziano, who can be reached by telephone at (516) 487-7973 extension 12, to answer questions about this report.

The Water Authority of Great Neck North has regularly scheduled Board of Directors meetings on the third Monday of every month at 6 p.m. at the Water Authority's office.

The Nassau County Department of Health has jurisdiction over the water system of the Authority. The Department of Health is

located at 106 Charles Lindbergh Boulevard, Uniondale, NY 11553, and representatives can be reached by telephone at (516) 227-9692.

The total population served is approximately 32,400 persons, residing in the incorporated villages of Great Neck Estates, Kensington, Kings Point, Saddle Rock, and Great Neck, and portions of Great Neck Plaza, Thomaston, and the unincorporated areas of the Town of North Hempstead. The Authority maintains 9,043 service connections in its service area of 7.5 square miles.

### **Total Pumpage data for 2013 is as follows:**

- Total water pumped: 1,571,505,000
- Daily average of water treated and pumped: 4,305,493 gallons
- Highest single day: 8,246,000 gallons
- Total amount of water delivered to customers: 1,554,147,000
- Total water billed: 1,394,557,000
- Total water unbilled but accounted for: 17,358,000 gallons
- Total unaccounted for: 159,590,000 gallons
- Percent unaccounted for: 10.3%

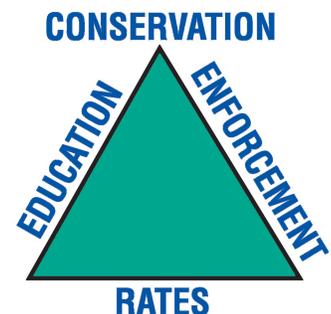
**Unaccounted for water includes water taken by unauthorized use of hydrants, fighting fires, fire training, filling road sweepers and tanker trucks, main breaks, service leaks, flushing water mains, and unknown leaks in mains and water services.**

Michael C. Kalnick, Chairperson  
Howard C. Miskin, Vice Chairperson  
Robert J. Graziano, Deputy Chairperson

### **BOARD OF DIRECTORS**

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Gregory C. Graziano, Superintendent



## **2. WHERE DOES OUR WATER COME FROM? (SOURCE OF SUPPLY)**

In general, the sources of drinking water (both tap water 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 from 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 public health.

The Water Authority of Great Neck North's water supply consists of groundwater drawn from eight (8) operating wells located throughout its service area and three (3) operating wells located off the Great Neck peninsula. Well Nos. 2A, 9 and 10A are screened in the Magothy aquifer at depths ranging from 143 feet to 161 feet. Well Nos. 5, 6, 7, 8, and 11 are screened in the Lloyd aquifer at depths ranging from 286 feet to 464 feet. Well Nos. 12, 13, and 14 are screened in the Magothy aquifer at depths ranging from 345 feet to 417 feet. The Authority operates approximately 117 miles of water mains varying in size from 1" to 24" in diameter, approximately 826 fire hydrants, and 2.5 million gallons storage capacity with 0.5 million gallons in 1 elevated storage tank and 2.0 million gallons in 2 ground storage tanks. The District is 100% metered, and has an active cross connection control program in compliance with the State sanitary code. Quantities of water presently available exceed the existing and projected water demands of our customers and the overall water quality meets all State Health Department Standards. During 2013, our system did not experience any restriction of our water source.

## **3. SOURCE WATER ASSESSMENT**

The NYS DOH with assistance from the local health department and the CDM consulting firm, has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how rapidly contaminants can move through the subsurface to the wells. The susceptibility of a water supply well to contamination is dependent upon both the presence of potential sources of contamination within the well's contributing area and the likelihood that the contaminant can travel through the environment to reach the well. The susceptibility rating is an estimate of the potential for contamination of the source water; it does not mean that the water delivered to consumers is, or will

become contaminated. See section "Are there any contaminants in our drinking water?" for a list of the contaminants that have been detected (if any). The source water assessments provide resource managers with additional information for protecting source waters into the future.

Drinking water is derived from 11 wells. The source water assessment has rated 4 of the wells as having a high to very high susceptibility to industrial solvents and a high susceptibility to nitrates, and 2 as having a medium high susceptibility to microbial contamination. The elevated susceptibility to industrial solvents is due primarily to point sources of contamination related to commercial/industrial facilities and related activities in the assessment area. The high susceptibility to nitrate and microbial contamination is attributable to unsewered residential land use and related practices in the assessment area, such as fertilizing lawns. While the source water assessment rates 2 of our wells as being susceptible to microbials, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination.

A copy of the assessment, including a map of the assessment area, can be obtained by contacting us at: WATER AUTHORITY OF GREAT NECK NORTH, 50 WATERMILL LANE, GREAT NECK, NY 11021. (516) 487-7973.

## **4. ARE THERE CONTAMINANTS IN OUR DRINKING WATER? (DETECTED CONTAMINANTS)**

The Authority routinely monitors drinking water quality. It should be noted that all drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Contamination of the groundwater supplying the WAGNN wells has been detected in samples from some wells. All groundwater pumped to the distribution system from the operating Authority wells complies with New York State Department of Health standards for public drinking water supplies. 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 800-426-4791 or the Nassau County Department of Health at 516-227-9692.

As required by the USEPA, the State sanitary code and the Nassau County Department of Health, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, and radiological and synthetic organic compounds. Information regarding the contaminants detected in this testing can be found within the table included as part of this annual report identified as the 2013 Table of Detected Contaminants.

In 2013, 384 microbiological samples were tested with no reported violations.

As you see in the table, our system had no violations during 2013. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State Department of Health.

IOCs, also known as Inorganic Contaminants, are tested by collecting one sample and testing that sample for all the IOCs. IOCs are commonly found naturally in the earth's crust and fertilizers used on lawns. IOCs include: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Free Cyanide, Fluoride, Lead, Mercury, Selenium, Silver, Thallium, Ammonia, Copper, MBAS, Iron, Manganese, Nitrates, Nitrites, Sodium, Sulfate, and Zinc.

Prior to distribution, all water is treated with chlorine for bacteriological quality and with a polyphosphate, which is used to control iron and discoloration associated with old unlined cast iron water mains and services. All water, except source water from Well Nos. 2A, 6, 8, 9, 12, 13, and 14 are also treated with sodium hydroxide for pH control, which reduces corrosivity.

The Water Authority does not add fluoride to the water.

Source water from Well Nos. 2A, 6, 8, 9, 12, 13, and 14 are treated by air stripping to remove volatile organic contaminants. All treatment is approved by and in strict accordance with New York State and Nassau County Department of Health standards.

## **5. DEFINITIONS**

The following definitions may help you better understand the terms and abbreviations used herein or on the table listing the Table of Detected Contaminants.

### **2013 TABLE OF DETECTED CONTAMINANTS**

#### **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 MCLGs as feasible.

#### **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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

#### **Treatment Technique (TT):**

A required process intended to reduce the level of a contaminant in drinking water.

#### **Action Level (AL):**

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

#### **Non Detects (ND):**

Laboratory analysis indicates that the constituent is not present.

#### **Nephelometric Turbidity Unit (NTU):**

A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

#### **Milligrams per liter (mg/l):**

Corresponds to one part of liquid in one million parts of liquid (parts per million – ppm).

#### **Micrograms per liter (ug/l):**

Corresponds to one part of liquid in one billion parts of liquid (parts per billion – ppb).

#### **Nanograms per liter (ng/l):**

Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion – ppt).

#### **Picograms per liter (pg/l):**

Corresponds to one part of liquid to one quadrillion parts of liquid (parts per quadrillion – ppq).

#### **Picocuries per liter (pCi/L):**

A measure of the radioactivity in water.

#### **Millirems per year (mrem/yr):**

A measure of radiation absorbed by the body.

#### **Million Fibers per Liter (MFL):**

A measure of the presence of asbestos fibers that are longer than 10 micrometers.

#### **90th Percentile Value:**

The values reported for lead and copper represent the 90th percentile. 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 lead and copper values detected at your water system.

### Non Detected Contaminants

The following inorganic contaminants were analyzed for, but not detected, in any of the samples:

Antimony, Arsenic, Beryllium, Cadmium, Chromium, Free Cyanide, Mercury, Selenium, Silver, Thallium, Ammonia, MBAS, Nitrites, Asbestos, and Zinc.

There were no detections of the following volatile halocarbons in the samples analyzed:

Bromochloromethane	cis-1,3-Dichloropropene	Benzene	Isopropylbenzene
Bromomethane	trans-1,3-Dichloropropene	Bromobenzene	p-Isopropyltoluene
Carbon Tetrachloride	Methylene Chloride	N-Butylbenzene	n-Propylbenzene
Chloroethane	1,1,1,2-Tetrachloroethane	sec-Butylbenzene	Styrene
Chloromethane	1,1,2,2-Tetrachloroethane	tert-Butylbenzene	Toluene
Dibromomethane	Tetrachloroethene	Chlorobenzene	1,2,3-Trichlorobenzene
Dichlorodifluoromethane	1,1,1-Trichloroethane	2-Chlorotoluene	1,2,4-Trichlorobenzene
1,2-Dichloroethane	1,1,2-Trichloroethane	4-Chlorotoluene	1,2,4-Trimethylbenzene
trans-1,2-Dichloroethene	Trichlorofluoromethane	1,2-Dichlorobenzene	1,3,5-Trimethylbenzene
CIS – 1,2, Dichloroethene	1,2,3-Trichloropropane	1,3-Dichlorobenzene	m-Xylene
1,2-Dichloropropane	Vinyl chloride	1,4-Dichlorobenzene	o-Xylene
1,3-Dichloropropane	Bromodichloromethane	Ethylbenzene	p-Xylene
2,2-Dichloropropane	Methyl Tert. Butyl Ether	Hexachlorobutadiene	
1,1-Dichloropropene	(MTBE)		

There were no detections of the following pesticides in the samples analyzed:

Alachlor	Heptachlor	Carbaryl	Methomyl
Aldicarb	Heptachlor Epoxide	Dalapon	Metolachlor
Aldicarb Sulfoxide	Lindane	Bis-(2-ethylexyl)adipate	Metribuzin
Aldicarb Sulfone	Methoxychlor	Bis-(2-ethylexyl) phthalates	Oxamyl (Vydate)
Atrazine	Polychlorinated Biphenyls	Dicamba	Pichloram
Carbofuran	Pentachlorophenol	Dieldrin	Propachlor
Chlordane	Toxaphene	Dinoseb	Simazine
DBCP	2,4,5-TP (Silvex)	Glyphosate	Endothall
2,4-D	Aldrin	Hexachlorobenzene	Diquat
Endrin	Benzo(a)pyrene	Hexachlorocyclopentadiene	Dioxin
1,2-Dibromoethane	Butachlor	3-Hydroxycarbofuran	

### **6. IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

During 2013, our system was in compliance with applicable State drinking water operating, monitoring, and reporting requirements. However, we are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During 2012, we did not complete all monitoring for Heptachlor Epoxide. This additional monitoring was required as the Authority detected this contaminant for the first time in one of its wells. The water was completely safe to consume as the detected level was far below Federal & State regulatory limits. Recent sampling has shown that this contaminant is no longer present in any of the Authority's wells.

### **7. 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. 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 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 cryptosporidium, giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Water Authority of Great Neck North 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 Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

## **8. CONSERVATION**

The Water Authority of Great Neck North has continued to move forward with an aggressive Water Conservation program. The source of supply for the Authority lies within fragile fresh water aquifer systems lying beneath the peninsula. The aquifers are considered fragile due to their proximity to salt water, which surrounds the peninsula. Sustained overpumping of our wells will eventually lead to salt water intrusion and the loss of supply.

In recognition of this existing condition, the Board of Directors has adopted a plan of action to protect our resource. The plan consists of an aggressive conservation program coupled with a comprehensive well management plan. Under this plan, the Authority has constructed two (2) operating wells off the peninsula. While these wells will provide some relief for any salt water intrusion on the peninsula, it is imperative that the community continue to work with the Authority to conserve our existing supply.

Generally, the Authority has sufficient supply to avoid overpumping. However, during peak periods of the summer, lawn irrigation increases to a point that creates stress on the system. We ask that all our customers be cognizant of our conservation needs and to help in our efforts with regard to this matter. Working together we will protect our water supply so that it can be enjoyed for generations.

### **A. Internal Conservation Operations**

- Leak Detection Program – Sections of the distribution system are surveyed for leaks by Water Authority personnel utilizing electro-sonic leak detection equipment.
- Expedient leak repair - The Authority continues to attack all leaks as emergencies with repair work generally occurring within 24 hours of notification.
- 100% metered system - The Authority requires all services to be metered. Large meter accuracy is tested on an annual basis. Smaller meters are tested or replaced once every fifteen (15) years. If meter accuracy is questioned, the consumer is entitled to one accuracy test per year. All production meters (well meters) have been recently tested.
- Public Awareness Program - The Authority has continued to promote conservation throughout the peninsula.
- Conservation driven rate structure - The Authority's rates have been developed to promote conservation. The water rates for 2013 are posted in this report, and on our website.

- Water Use Audits & Retrofit Program - This program was developed to help customers identify water saving opportunities within the home and to promote the use of low flow fixtures. The program is available free of charge to all of our customers. Please contact this office at 487-7973 if you wish to participate.
- Sprinkling regulations - The Authority has limited lawn irrigation to three times per week and requires the installation and testing of moisture sensors or rain gauges for all automatic systems.
- Xeriscape Garden - The Authority, in conjunction with Nassau County, has constructed a Xeriscape garden to promote the use of drought-resistant plantings for landscape design.

### **B. Conservation Ordinance**

The Authority has continued its Water Conservation Program as mandated by the Department of Environmental Conservation. This program implements and conforms to Nassau County Ordinance 248A 1987.

### **C. Residential Information**

#### Lawn Watering Restrictions 2012 & 2013

- No watering between 10:00 AM and 4:00 PM.
- Odd numbered addresses may water on Monday, Wednesday and Friday. Even numbered addresses may water on Tuesday, Thursday and Sunday.
- Water lawns slowly and as infrequently as possible.
- Hoses are required to have nozzles that automatically shut off water when not in use.
- Washing of driveways and sidewalks is prohibited.
- Sprinkling is prohibited during periods of precipitation.
- Rain gauge or moisture sensor is required for all automatic lawn irrigation.
- No watering permitted between November 1 and April 15.

#### Residential Water Saving Recommendations

The conscientious use of water by our residents will greatly aid the Authority's conservation efforts. The use of low flow fixtures can reduce domestic consumption by as much as 20%. Reducing lawn irrigation from three times per week to twice per week can reduce irrigation use by over 30%.

#### ■ How much water should I give my lawn?

Although the normal lawn needs 1-2 inches of water per week, the actual amount your property requires depends on these variables: amount of rain, type of soil, air temperature, type of grass, relative humidity, degree of sun/shade, amount of thatch. For example: If your lawn has soil with high clay content and is growing in the shade, it will need less than one growing in sandy soil with full sun.

■ Did You Know?

- a) A slow drip wastes 15 gallons in 24 hours.
- b) 1/32" leak wastes 25 gallons in 24 hours.
- c) 1/16" leak wastes 100 gallons in 24 hours.
- d) 1/8" leak wastes 400 gallons in 24 hours.

**9. SYSTEM IMPROVEMENTS**

**A. 2013 Modifications**

- Completion of GIS (Geographical Information System).
- Started construction for new well house enclosure, electrical improvements, and new natural gas generator at Well #10A.
- Completion of Meter Replacement Program.
- Water Main Replacement Project.
- Completed construction of new treatment facility at Community Drive Well Field.
- Replaced Emergency Radio Communication System.
- Started Replacement of Well #11.

**B. 2014 Plans**

In 2014, the Authority has plans for the following major capital improvements:

- Complete construction for new well house enclosure, electrical improvements, and new natural gas generator at Well #10A
- Completion of Transite Main Replacement.
- Water Main Replacement Project.
- Complete Replacement of Well #11 with new Well #14.

**10. WATER RATES**

A brief financial account of the Water Authority for 2013 is as follows:

- Total Operating Revenue: \$9,466,303
- Operating and Maintenance Expenses: \$4,764,968
- Principal and Interest Expense on Bonds: \$2,991,750

Note: These figures have not been audited by independent public accountants at the time of this report.

Audited figures will be provided upon request.

**WATER RATES FOR 2013 WERE AS FOLLOWS:**

Class I - Residential Customers - Metered Water Service

**BILLING FOR USAGE**

Bills will be rendered quarterly in arrears, calculated using the following usage levels and rates:

**RATE**

\*\$3.95 per ccf.

**MINIMUM CHARGE**

\$39.50 minimum charge for which the customer will be entitled to use 10 ccf of water in the three month period stated in the permit. Water in excess of such allowance will be billed at the rate above stated, and the bill will be due and payable when rendered.

If the service is installed at anytime during a billing period, the minimum charge will be prorated.

\*CCF = 100 cubic feet of water

100 CF = 750 gallons of water

**11. SUMMARY**

In summary, all wells are monitored 24 hours a day by State certified operators who inspect each well station daily to check and record chemical feeds. Samples are collected at well sites and throughout the distribution system to ensure that the water supply provided to our residents is of the highest quality possible.

The Water Authority of Great Neck North recognizes the concerns that residents have regarding the quality of their drinking water. The Authority makes every effort to continue to supply safe drinking water in compliance with all applicable health standards. Please contact the Authority at 487-7973 should you have any questions or desire further information.

**12. ADDITIONAL COPIES**

Copies of the Annual Drinking Water Quality Report are available at the Authority office located at 50 Watermill Lane, Great Neck, New York. A yearly supplement, which contains quality data for each water source operated in 2013, can be obtained at the same address. The report and supplements may also be downloaded from our website, [www.waterauthorityofgreatnecknorth.com](http://www.waterauthorityofgreatnecknorth.com)

**13. CLOSING**

Thank you for allowing us to continue to provide your family and business with clean, quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements are reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. The Water Authority of Great Neck North works hard to provide top quality water to every customer. We ask that all our customers help us protect our water resources. Please visit the Water Authority's website at [www.waterauthorityofgreatnecknorth.com](http://www.waterauthorityofgreatnecknorth.com) to download regulations, access the full Annual Drinking Water Quality Report, check on customer service information, important notices, the current rate and fee structure, and links to other resources.

**WATER AUTHORITY OF GREAT NECK NORTH  
2013 ANNUAL DRINKING WATER QUALITY REPORT**

**Table of Detected Contaminants**

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Maximum) (Range)	Unit Measurement	MCL/G	Regulatory Limit (MCL, TL or AL)	Likely Source of Contamination
<b>Inorganic Contaminants</b>							
Barium	No	4/17/13	0.048 0.015 to 0.048	mg/l	2	MCL = 2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chloride	No	9/10/13	55 33 to 55	mg/l	n/a	MCL = 250	Naturally occurring or indicative of road salt contamination.
Copper	No	2 <sup>nd</sup> half of 2013	0.34 ND to 0.34	mg/l	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
Iron	No	12/1/13	0.05 ND to 0.05	ug/l	n/a	MCL = 300 <sup>4</sup>	Naturally occurring.
Lead	No	2 <sup>nd</sup> half of 2013	7.52 ND to 7.52	ug/l	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Perchlorate	No	12/1/13	2.0 ND to 2.0	ug/l	n/a	Primary is 18 Secondary is 5	Naturally occurring and man-made chemical. It is the primary ingredient of solid rocket propellant.
Manganese	No	4/17/13	0.2 ND to 0.216	ug/l	n/a	MCL = 300 <sup>4</sup>	Naturally occurring; Indicative of landfill contamination.
Sodium	No	9/10/13	21 12 to 21	mg/l	n/a	20 <sup>2</sup> and 270 <sup>3</sup>	Naturally occurring; Road salt; Water softeners; Animal waste.
Sulfate	No	4/17/13	49 19 to 49	mg/l	n/a	MCL = 250	Naturally occurring.
Nickel	No	4/17/13	0.001 ND to 0.001	mg/l	n/a	n/a	Naturally occurring.
Fluoride	No	9/10/13	0.120 ND to 0.12	mg/l	n/a	n/a	Naturally occurring.
<b>Inorganics - Nitrate and Nitrite</b>							
Nitrate	No	12/1/13	3.1 1.2 to 3.1	mg/l	10	MCL = 10	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits.
<b>Volatile Organic Contaminants</b>							
1,1 - Dichloroethane	No	4/17/13	2.5 ND to 2.5	ug/l	n/a	MCL = 5	Released into the environment as fugitive emissions and in wastewater during production and use as a chemical intermediate solvent; used in vinyl chloride manufacturing; chlorinated solvent intermediate; coupling agent in anti-knock gasoline; degreasing agent.
1,1 - Dichloroethene	No	4/17/13	0.7 ND to 0.7	ug/l	n/a	MCL = 5	Breakdown of 1,1,1 - trichloroethene and 1,2 - dichloroethane; Manmade chemical used to make certain plastics.
Bromoform	No	2/6/13	0.7 ND to 0.7	ug/l	n/a	MCL = 50	Drinking water that has been chlorinated to kill bacteria and viruses.
Chloroform	No	4/17/13	0.6 ND to 0.6	ug/l	n/a	MCL = 50	Discharge from industrial chemical factories; Sometimes formed as a by-product when chlorine is added to water.
Dibromochloroethane	No	2/6/13	0.9 ND to 0.9	ug/l	n/a	MCL = 50	Drinking water that has been chlorinated to kill bacteria and viruses.
Trichloroethene	No	4/17/13	1.1 ND to 1.1	ug/l	n/a	MCL = 5	Discharge from metal degreasing sites and other factories.
<b>Disinfection Byproducts</b>							
Total Trihalomethanes	No	12/1/13	3.0 ND to 3.0	ug/l	n/a	MCL = 80	By-product of drinking water chlorination.

<sup>1</sup> The copper and lead levels represents the 90th percentile of the 30 sites tested in the year 2013.  
<sup>2</sup> Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets.  
<sup>3</sup> Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.  
<sup>4</sup> If iron and manganese are present, the total concentration of both should not exceed 500 ug/l.



**WATER AUTHORITY OF GREAT NECK NORTH**  
50 Watermill Lane  
Great Neck, NY 11021

PRESORTED STANDARD  
U.S. POSTAGE  
**PAID**  
Permit No. 1532  
Flushing, NY

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## Geothermal Well Systems Threat to Drinking Water

In an effort to continue to protect and preserve the public drinking water supply, Water Authority of Great Neck North officials have recently reaffirmed their longstanding position that the introduction of any type of well system or drilling into the aquifer should not be permitted on the Great Neck Peninsula. This comes in the wake of recent requests by residents of some villages for permits to install Geothermal Well Systems on their properties.

In 1994, at the request of the Authority, municipalities in the water supplier's service area adopted regulations that prohibit persons from drilling, digging or tapping into aquifers or other subsurface sources of water. This legislation has effectively helped mitigate the impact of salt water intrusion on the Authority's drinking water wells and pollutants from further contaminating the groundwater.

Although Geothermal Wells are considered by some to be "green," there are many drawbacks to allowing them on the Peninsula, as the relatively new technology poses many threats to the public drinking water supply. Commonly used is the closed-loop system, which entails drilling bore holes with a series of pipes that are installed into the opening of a well that is connected to a heat exchange system inside building. The pipes are then filled with a heat transfer fluid that is circulated throughout the system, creating a direct conduit for pollution to enter the aquifer. Other concerns include:

- Boreholes drilled into the earth increase the potential for contamination of the groundwater exponentially. They can also act as a connection between two aquifers or a zone of contamination and an aquifer, which can cause contaminants to flow into uncontaminated areas.
- Groundwater contamination can lead to significant clean up costs and liability issues for property owners.
- Wells installed near sources of pollution such as septic tanks, sewer laterals, drywells and underground fuel tanks may allow the pollutants to contaminate the groundwater and endanger public health.
- It has been proven in other areas that wells effect the temperature of the aquifer and can cause an increase in the overall bacterial counts in the groundwater.
- Who would be responsible for removing the heat transfer fluid and capping of a well when its useful life has expired? If left unattended, this could cause pollution to reach the aquifer as well as a liability for the property owner.
- No government agency or regulatory authority in New York State has oversight or control of how these systems are being installed and the quality or type of construction being utilized.

While these are some of the obvious problems that could be caused unintentionally by a property owner trying "go green" by lowering heating costs, an even larger risk of an environmental disaster is imposed by allowing multiple uncontrolled openings in the water source. This goes against every effort by the Authority to secure the only source of drinking water for the Great Neck Peninsula.

Allowing additional drillings into the water supply would create too many unreasonable, unnecessary and unacceptable risks. The Authority asks property owners to consider these points and join in its efforts to protect the drinking water supply.