



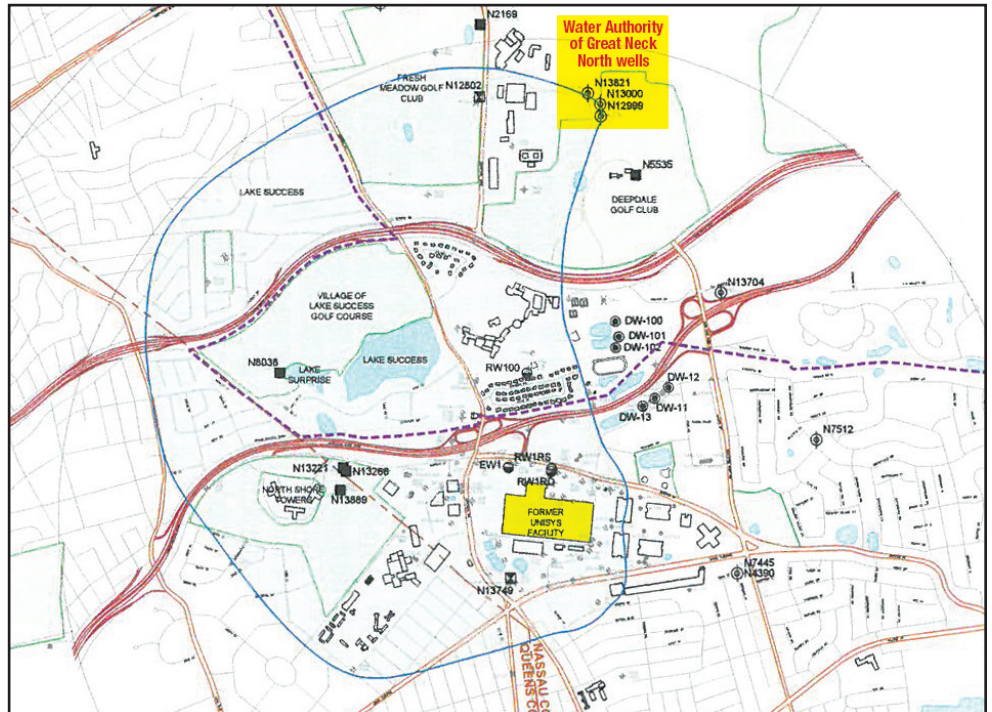
# Water Authority Staying Ahead of Plume

## Air Strippers Needed to Meet Non-Detect Standard

In its continuing commitment to provide consumers with the finest quality drinking water and to protect and preserve the natural resource for use by future generations, the Water Authority of Great Neck North has reached an agreement with the Lockheed Martin Corporation to safely address groundwater contamination that originated from the old Unisys defense plant in Lake Success. Lockheed Martin became the legally responsible party for the plume when it took ownership of the property in 1996.

With extracting wells, owned and operated by Lockheed Martin, in place for more than a decade, the company has consented to also bear the cost for developing, operating and maintaining two air-stripping plants to treat the water from three wells at one of the Water Authority's well fields. The facilities will rid the drinking water of contaminants to a non-detect level, before it is released to the distribution system. Total costs could reach \$13 million over the agreement period of 30 years.

Lockheed will continue to operate the two groundwater treatment systems, which are effectively removing contamination from the groundwater up-gradient or south of the three water supply wells. To date, the systems have limited the migration of the plume by removing 54,000 pounds of volatile organic compounds from the groundwater, which represents approximately 60



# LOOKING BACK 75 YEARS

<b>Early 1940s</b>	Release of contamination from Unisys site
<b>Mid 1970s</b>	2 wells abandoned due to salt water intrusion
<b>1996</b>	Lockheed Martin purchases Unisys and became the responsible party for the toxic plume
<b>1999</b>	Water Authority develops well sites south of service area and pipes the water north to meet public drinking water demand and provide adequate fire protection
<b>2002</b>	Lockheed Martin installs first groundwater treatment system
<b>2004</b>	Lockheed Martin installs off-site groundwater treatment system
<b>2005</b>	Water Authority installs GAC treatment plant to remove VOCs detected in the drinking water as a result of the Unisys plume
<b>2013</b>	Water Authority works with neighboring district to reduce pumpage capacity at well sites to minimize possibility of salt water intrusion
<b>2013</b>	Water Authority enters into an agreement with Lockheed Martin to replace GAC filter system with two air stripping plants to remove VOCs from 3 wells to a non-detect level. Agreement awaits DEC approval.

## Water Authority Staying Ahead of Plume *(continued from page 1)*

not cause the pollution, the Water Authority is responsible, under health department regulations, for delivering safe drinking water to consumers. Whether or not Lockheed Martin covers the costs, Water Authority officials are committed to introducing the air-stripping towers to continue to meet their non-detect standard.

The equipment will allow the public water supplier to treat any additional contaminants that may arise, not associated with the Lockheed Martin plume, which is traveling northwest at a rate of one-foot per day. With modern technology in place, contaminants that have reached the drinking water well sites are being removed to a non-detect level.

The Water Authority has historically maintained a standard of non-detection in the drinking water delivered to con-

sumers, which far exceeds the requirements of the state and federal governments. Authority officials believe the agreement with Lockheed Martin will enable the utility to continue to meet that standard, while effectively offsetting any costs to the residents it serves.

### More Extraction Wells Not an Option

While it may seem like a logical solution, engineering studies have shown that adding more extracting wells to remove the plume would in all likelihood cause the salt water that surrounds the Great Neck peninsula to be pulled toward the land and threaten the aquifers, and ultimately the drinking water, with salt water intrusion.

The Water Authority has taken

many steps to prevent salt water from reaching the drinking water source. Officials believe adding extracting wells is not a viable solution, as it could lead to salt water intrusion and force the Authority to further reduce pumping capacities from the drinking water wells in the immediate area.

### Timing is Critical

With land not readily available in the densely populated area, Water Authority officials are concerned it would take many years for Lockheed Martin to develop more extraction wells, as was the case with the wells that are currently in operation at two separate locations.

With all things considered, officials believe the agreement with Lockheed Martin is by far the most prudent solution.

# What is Air Stripping?

Long Island's public water suppliers began using air stripping facilities in the mid 1980s to remove volatile organic compounds (VOCs) from the drinking water. Today, the proven technology is used by the majority of water purveyors throughout Nassau-Suffolk to rid the drinking water of toxic materials that were dumped on the ground more than 50 years ago, as is the case of the Unisys plume. At that time, waste disposal and pollution regulations were lax and offenders were not deterred by the harsh penalties enforced today.



Additionally, business operators and lawmakers were much less cognizant of the long term consequences future generations would face when harmful materials were handled carelessly. Since then, laws have been enacted, regulations have been put in place and strict standards have been set for drinking water quality.

Air-stripping plants transfer volatile components of a liquid into the air stream. The water is introduced at the top of a tall circular tower filled with randomly packed material that looks much like perforated plastic balls of various sizes. This design provides a maximized surface area for the water, creating a thin film of water, as it travels downward by gravity to the bottom. At the same time, air is forced up from the bottom of the tower, causing the VOCs to be released from the water as it comes in contact with the air. This chemical engineering technology is effective for treating water that contains volatile compounds because VOCs have a relatively high vapor pressure and low aqueous solubility qualities, allowing them to be easily stripped from the water.

Packed tower aeration is the most common air stripping technology for treating drinking water. The systems are typically custom manufactured to meet the specific requirements of the application.

## OVERVIEW

# WATER AUTHORITY OF GREAT NECK NORTH

**Established:** 1985

### **Mission Statement:**

To provide to its customers a quality of potable water that meets or exceeds all federal, state and local standards; properly manage its use of the groundwaters within its supply area; protection of important watershed areas; and provide a water supply system that meets the present and reasonable foreseeable needs of the Authority District.

### **Service Area:**

7.5 square miles in northern section of the Great Neck peninsula (mainly north of the LIRR tracks) including the Villages of Great Neck, Great Neck Estates, Kensington, Kings Point, Saddle Rock and portions of Great Neck Plaza and Thomaston; and portions of the unincorporated areas of the Town of North Hempstead.

**Population Served:** approximately 32,400

**Service Connections:** 9,037

**Water Mains:** 117 miles / measuring from 1" to 24"

**Well Fields:** 8

### **Drinking Water Wells:**

11 are drilled from 143 to 464 feet below the earth

**Operating Revenue:** \$8.76 million

### **Water Storage Capacity:**

2.5 million gallons

1 elevated tank

2 ground storage tanks

**Fire hydrants maintained:** 825

**Average Daily Pumpage 2012:** 4.2 million gallons

**2012 Pumpage:** 1.546 billion gallons

**Cost of Water:** \$0.0053 per gallon



**Water Authority of  
Great Neck North**





Presorted  
Standard  
US Postage  
PAID  
Permit No. 1532  
Flushing, NY

50 Watermill Lane  
Great Neck, NY 11021  
(516) 487-7973

**Administrative Hours**  
Monday to Friday  
8 a.m. to 4 p.m.

**24-Hour Emergency**  
(516) 482-0210

[WaterAuthorityofGreatNeckNorth.com](http://WaterAuthorityofGreatNeckNorth.com)

# SWIFT 911

Go to [WaterAuthorityofGreatNeckNorth.com](http://WaterAuthorityofGreatNeckNorth.com) to update your contact information to the emergency notification list to be notified with important information and announcements.

## Water Authority of Great Neck North

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

### BOARD OF DIRECTORS

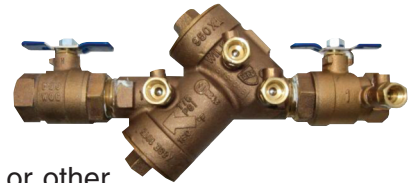
Ellen Birnbaum, Town of North Hempstead  
Edward Causin, Village of Great Neck Estates  
Jean Celender, Village of Great Neck Plaza  
Michael C. Kalnick, Village of Kings Point  
Ralph J. Kreitzman, Village of Great Neck  
Dr. Dan Levy, Village of Saddle Rock  
Susan Lopatkin, Village of Kensington  
Steven Weinberg, Village of Thomaston

### SUPERINTENDENT

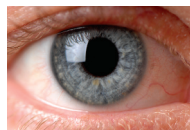
Gregory C. Graziano

## *Backflow Devices & Rain Gauges Must Be Tested*

A backflow prevention device stops water from irrigation system, hot tubs, pools, new construction or other sources of potentially impure water from flowing back into the public drinking water supply. The devices are required to be tested annually by a state certified tester and the paperwork submitted to the Water Authority by the date on the bottom of each customer's second quarter bill.



Customers with an in-ground sprinkler system are required to also test their rain gauge/moisture sensors each year.



## ASK FOR ID

If you are unsure about the identity of someone who claims to represent the Water Authority and asks for access to your property, call the Water Authority at (516) 487-7973 for verification. Field employees are required to wear uniforms with the Water Authority of Great Neck North logo and carry and ID cards signed by the superintendent.