# Protecting Your Horticultural Water Supply in the Face of Development©

**Lisa J. Ungers**
Roemer Nursery, Inc., 2310 Green Road, Madison, Ohio 44057 U.S.A.
Email: ungerslisa@yahoo.com

Thank you for the introduction and Good Morning IPPS! It is my honor to be speaking to such an impressive assembly of our industry's finest. Thank you for having me here today. I could not begin to introduce Roemer Nursery without first telling you a little about its founder Egidius M. Stroombeek. Gied as we know him, a native of Holland, was trained as a propagator in Boskoop, under the direction of Siem Van Klaveren where he received his degree.

In 1952 Gied immigrated to the U.S.A. via New York after a 10-day journey across the Atlantic. Gied was stopped at customs and questioned by custom agents regarding his reasons for coming to the United States. Apparently, customs agents did not know what a propagator was and were suspicious of the container of hormone powder in his luggage. They continued to interrogate him until he was finally able to convince them that the hormone was for his future crops and he was then permitted entry into the country.

Upon his arrival to Lake County he accepted a position with Call Nursery and then on to Warner Nursery as the propagator, where he met his late wife Ann. Gied and Ann were married in 1958 at the Warner home and grounds.

Gied first joined IPPS in 1952 and has been a member for a total of 56 years.

In 1959 Gied and Ann founded Roemer Nursery on 10 acres of land on Green Road in Madison, Ohio. At first conceived as a liner nursery, Roemer grew into a container production nursery when Gied and Ann planted excess seedlings and cuttings and grew them on to a finished size. Currently the nursery is situated on 34 acres and includes an office, greenhouses, propagation area, potting barn, and of course a lot of plants.

Roemer has a total of four irrigation ponds that were designed with the help of the Soil and Water Conservation District.

Roemer's customer dynamic consists of independent garden centers, landscapers and rewholesalers. Roemer does not sell to "BIG BOX STORES" as we feel this is very important to the success of our loyal customer base. We ship our products throughout the Northeastern United States.

We employ up to 20 employees in season, seven of whom are full time regular employees with medical, dental, disability, and 401K.

In 2004 a large commercial development was proposed just south east of Roemer Nursery. The proposed commercial development was designed to convert approximately 35 acres of what was formerly vacant/pasture/farmland, into approximately 20–25 acres of impervious parking lot and roof top surfaces. The impact on the Roemer Nursery water supply was anticipated by Gied Stroombeek, but despite Roemer's and our fellow supporters' efforts to fight this zoning change, the construction of the Wal-Mart Super Center Store and its attendant out-lots, gas station, and parking lots began in 2005. By January of 2006 the Store opened. The following Spring (2006) Roemer experienced elevated EC readings in its main irrigation pond that seemed to flush out with spring rains. In the Spring 2007 Roemer again experienced elevated EC readings that seemed to flush out with spring rains, but

by Fall 2007 Roemer began experiencing significant plant losses and was forced to take the pond offline. In 2007 and 2008 we had many meetings with Wal-Mart and its representatives along with several County and Township representatives to no avail. Roemer Nursery filed suit against Wal-Mart and others for the contamination of our main irrigation pond on 20 Aug. 2009. Notwithstanding is the fact that Roemer Nursery has had a reliable source of clean irrigation water for over four decades prior to the installation of the Wal-Mart Super Center and the dye test shows that the water from Wal-Mart reaches Roemer's irrigation pond in less than 1 hour, it is Wal-Mart's position that Roemer Nursery has not established that the increased sodium and other chemicals that have essentially killed our primary irrigation pond originates from or is caused by the new construction in 2005.

The process included zoning changes, site plan reviews, and construction of the new development. We learned much throughout this process and would like to share what we learned with you.

If development is proposed near your nursery it is very important to know exactly where your water comes from and establish your baseline water quality via an EPA approved Laboratory. You must, attend all meetings with regard to the development. Review thoroughly all design plans. If need be (even though expensive) hire appropriate professionals (i.e., hydrologists, engineers, attorneys) to review the proposed plans.

I cannot express to you enough the importance of gaining the support of others behind your efforts to voice your concerns loudly and clearly to all government officials, the proposed developer, their engineering firm, construction firm, and corporate headquarters. Ensure that your voices are documented in all meeting minutes and maintain copies of all correspondence.

You must review in depth the storm water flow reports, storm water management plans, boring logs, utility plans, dewatering systems, BMPs (best management practices), parking area size, materials, and proposed de-icing methods.

The retention or detention basin plans are extremely important to the future groundwater quality. You must know the difference! A detention basin holds the runoff until it is eventually emptied and becomes a dry pond. A retention basin simply slows the rate at which the storm water is allowed to flow onto the land at the outlet. It has a permanent wet pool. It may or may not be lined. In our case the development chose to use an unlined retention basin that was dug into the ground and sits upon the ground water table in very sandy soils and outlets into the adjacent natural wetland.

While the process of discharging storm water into a wetland is commonly used to filter sediment, particles, and oils, it does not filter soluble salts/chlorides. You must note that the effect of impervious surfaces on the volume of storm water runoff can be dramatic. A 1-in. rainstorm on 1 acre of natural meadow typically produces 218 $ft^3$ of runoff compared to a 1-acre paved parking lot that produces 3,450 $ft^3$ of runoff in the same storm. That implies that the Wal-Mart property would produce an estimated 86,250 $ft^3$ of runoff per 1 in. of rainfall. Impervious surfaces increase the speed of runoff as it drains off the lot thereby increasing the discharge of pollutants into our waterways.

Once construction begins you must monitor the project with a watchful eye. Retain copies of any news related items. Note who is doing what at the site and anything unforeseen encountered at the site. Note specific materials being used and any effects the development is having on the local water table. Take lots of pictures,

create a daily log of observations and progress at the site and continue to monitor water quality. Be consistent with your sampling by using the same locations and time intervals. You are testing to first establish base-line, pre-construction values. As testing continues at regular intervals, you can then establish a trend line demonstrating the impact of the development on water quality.

Upon completion of the project you must continue to monitor your water quality on a regular basis. Watch for a spike in EC readings in the spring. If you spike, get another EPA approved water quality test and compare with your baseline test. Notify your health department of any unusual spikes, odors, unusual color or excessive iron bacteria.

A high EC reading that does not diminish with the spring rains indicates that the groundwater supply to your irrigation source is contaminated. You should immediately retain an EPA approved water analysis (note: EPA drinking water standards are not the same as agricultural water standards). Carefully monitor your plant material for any changes. If you should note plant losses, get a tissue analysis and a media analysis. Take pictures of your plant losses and note counts and dollar value.

Immediately make an action plan for an alternative water source. Request dye testing if possible and request the MSDS for de-icing materials being used. Make public records requests. Record all time and dollars spent on a resolution and notify all appropriate government entities and the developer with scientific data gathered. Remember to DOCUMENT! DOCUMENT! DOCUMENT!

The environmental effects of deicing agents are far reaching. Plant life, rivers, lakes and streams, aquatic life and our world's fresh water supplies are at risk. Groundwater contamination leads to drinking water contamination. As reported by the News Herald on 17 Sept. 2009 many urban streams have become salty enough to harm aquatic life, largely because of the salt used for de-icing. The U.S. Geological Survey released in Sept. 2009, studied urban streams and groundwater for levels of chloride, a component of salt, in 20 states spanning from Alaska to the Great Lakes and Northeast. It found chloride concentrations above federal recommendations designed to protect aquatic life in more than 40% of the urban streams tested. The highest levels were as much as 20 times the federal guidelines when salt and other chemicals are used for de-icing.

High chloride levels can slow plant growth, impair reproduction, and reduce the diversity of organisms in affected waters. A 2005 study in the Proceeding of the National Academy of Sciences said chloride concentrations were increasing in many northeastern states at a rate that threatened to render them undrinkable and toxic to freshwater life.

Roemer Nursery was out of water as of August 2009 and began purchasing city water to keep our plant material irrigated. Despite our efforts to resolve this issue since 2007, Roemer Nursery, Inc. filed suit against Wal-Mart and others on 20 Aug. 2009. We have been faced with a virtual "Sophie's Choice" of attempting to decide whether to watch our plant stock die for lack of water or to water our plants with the high sodium/chloride water and hope for the best.

We have gained the support of Ohio's largest environmental group, and 84-year-old Gied Stroombeek vows to continue the fight, for Roemer Nursery, the horticultural industry, and for our environment!

If any of you have any information or resources that could assist us in this valiant effort for our very existence, your assistance is both welcomed and appreciated.