The Ground Water Sentinel

Passaic Valley Ground Water Protection Committee ~ Volume I, Issue 2 - November 2001

Sustaining Water Supplies for the Future: First 10 of 16 Objectives for the Rockaway, Whippany and Upper & Mid-Passaic Watersheds of Watershed Management Area #6

The goal of maintaining adequate water supplies for future water users has three aspects which must be considered together:

1. Sustaining reliable quantities of water for water supplies.
2. Protecting the quality of water supplies.
3. Improving both the quality and quantity of water supplies by restoring ecosystem health.

Out of a total of 16 recommended objectives, the following 10 have been approved and adopted by the WMA-6 Public Advisory Committee (PAC):

1. Increase, or at minimum, maintain recharge to ground water and ground water levels: Recharge is precipitation that seeps, or infiltrates, into the ground. Ground water that is "mined" is not being replenished. For it to remain a renewable resource, ground water must be allowed to recharge.

2. Maintain stream base flow: Stream base flow comes from ground water. It keeps streams flowing between rain events, when there is no rainwater runoff. If more water is pumped out of the ground than is replenished through recharge, then stream base flows are diminished.

3. Reduce consumptive uses of water: Consumptive uses of water are those which evaporate water back into the air so that it cannot be reused. Lawn watering, which transpires water into the air, is a consumptive use. Water conservation should be encouraged.

4. Increase reuse of water within the Passaic River Basin: Ground water is distributed to customers, piped to sewage treatment plants, and discharged to surface water downstream from where it was taken. Treated wastewater, when returned to the watershed, would be available for reuse.

5. Strive to sustain water supplies by considering reducing reliance on sources of water from outside the Passaic River Basin and from downstream in the Basin: When water is transferred from one watershed to another, the receiving basin is supplemented while the supply basin is depleted. This is an equity issue.

6. Reduce contamination of ground water: Not only does well water contamination reduce the amount of water available for use, but remediation of the contamination is a costly and time-consuming process. A commitment to implement well head area protection programs, and to clean up contaminated ground water, is needed.

7. Reduce, or at minimum, maintain nitrogen and phosphorus loadings to ground and surface water: High levels of these two nutrients intensify algal blooms in streams, resulting in reduced water quality. Increased loadings would degrade existing water quality, making it more difficult and costly to treat water supplies.

8. Improve ecological functioning of wetlands and stream corridors: Wetlands and vegetated stream corridors improve water quality by removing pollutants from water. Wetlands also maintain stream base flow during periods of drought. Where such areas have been destroyed, they could be restored to their natural functions.

9. Maintain or improve aquatic communities and their habitats, including wetland communities: The many benefits that the aquatic biota can provide in cleaning up water supplies, contributing to recreational activities and enhancing aesthetic qualities, must be part of the watershed management process.

10. Reduce damages from flooding: Flooding in areas that don't usually flood indicates that the normal movement of storm water, into ponds, wetlands and ground water recharge areas, has been altered. Restoring floodways to their natural functions will reduce flood damage and allow the water to be retained and utilized.

Errata

In last issue's article, "What Is The PVGWPC?" committee chair Herbert J. Cannon should have been introduced as a retired Engineer of Chatham *Borough*.

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Private Well Testing

Condensed from the NJ Department of Health & Senior Services publication:
Facts: Private Well Testing
www.state.nj.us/health/eoh/hhazweb/well.pdf

Minimum Test	**Recommendations**	**MCLs: Maximum Contaminant Levels**
Total Coliform Bacteria	At least once a year	No bacteria in sample
Total Nitrate / Nitrite	Yearly	10,000 ppb *
First Draw Lead	At least once	15 ppb *
Additional Tests	**Recommendations**	**MCLs: Maximum Contaminant Levels**
Total Mercury	Yearly	2 ppb *
Volatile Organic Scan	Yearly	Varies by compound
Pesticide Scan	Every 3 years	Varies by compound
Radionuclides	Gross Alpha Test, At least once	15 pCi/l **
Odor	Yearly	3 Threshold odor number
Color	Yearly	10 Color Units
Taste	Yearly	No objectional taste
pH	Yearly	6.5 to 8.5 is optimal
Total Dissolved Solids	Yearly	500 ppm ***
Chloride	Yearly	0.2 ppm ***
Hardness	Yearly	250 ppm ***
Iron	Yearly	0.3 ppm ***
Manganese	Yearly	0.05 ppm ***
* ppb = parts per billion	** pCi/l = picocuries per liter	*** ppm = parts per million

Some other common contaminants are: Inorganic compounds such as those containing mercury; **Volatile Organic Compounds** from petroleum products and solvents; **Pesticides** from farms and residential areas; and **Radionuclides** such as industrially manufactured uranium and radium, and naturally occurring radon.

Commercial testing labs are listed in the phone book's yellow pages. Make sure the lab is certified to test for the specific contaminants of concern to you. A list of NJ certified labs in your area can be obtained from your local health department, cooperative extension office, or the NJDEP. Check with your local health department to find out if they provide low cost testing services.

Approximately 12% of NJ residents get their drinking water from private wells. If you fit this profile, you have the responsibility of making sure your drinking water supply is safe. While public water supplies are maintained under the state and federal Safe Drinking Water Acts, private well owners are entirely responsible for the monitoring and upkeep of their own wells.

A well that is properly constructed, and routinely maintained, will help to safeguard your drinking water quality. In addition, regular well testing can help you to observe changes in water quality over time, and identify problems before they negatively affect your health. Don't rely on whether your water looks, smells or tastes clean, because even a gradual exposure to some contaminants, in small amounts over a long period of time, can cause chronic health problems.

First, you need to assess the various conditions that may make your well susceptible to contamination. Some determining factors are: the design, construction and location of the well; the underlying geology of the area; the depth of the well; and types and locations of potential pollution sources near the well. Knowing the details will help you evaluate the contamination risks, allowing you to select the tests that are most appropriate for your circumstances.

The most common sources of well water contamination in NJ include*:* Infectious Microorganisms such as bacteria, viruses and protozoa that can enter your well water from faulty household septic systems or nearby animal feed-lots. **Nitrates** come from the decomposition of human and animal wastes, and chemical fertilizers. **Lead** can come from municipal landfills, industrial sites, and old household plumbing—especially if your water is acidic.

For more information contact:
NJDEP *www.state.nj.us/dep*
- ► Office of Ground Water Quality Standards: 609-292-1875
- ► Bureau of Safe Drinking Water: 609-292-5550
- ► Office of Quality Assurance: 609-292-3950

EPA *www.epa.gov/safewater*
- ► Safe Drinking Water Hotline: 800-426-4791

The Ground Water Adventures of Walter Wet©

Hi! I'm Walter Wet. I'm the star of this 12-minute educational video that teaches all about ground water preservation. You'll learn about basic hydrology, aquifers, wells, pollution sources and well head protection. To order my video for only $19.00, call my friend, Louisa Lubiak, at 908-766-7550. Maybe she'll even let you take a peek at a preview! See ya later!