Recent New York State Water Regulations Not Ready for Prime Time

By David L. Ganje

Earlier this year, the DEC's new water withdrawal regulations came into effect. These regulations are designed "*to regulate the use of the water resources of the state… by implementing a water withdrawal permitting, registration and reporting program for water withdrawals equaling or exceeding a threshold volume*." Under the new regulations, the threshold volume refers to the withdrawal of a volume of one hundred thousand gallons of water or more per day.

In New York State, groundwater rights are based on land ownership rights. A property owner can withdraw as much water for use provided the rights of other property owners are not adversely affected. Water systems within the state require Water Supply Permits issued by the New York State Department of Environmental Conservation (DEC), if they have the capacity to withdraw 100,000 gallons per day, or more, of ground or surface water and they do not qualify for an exemption under state regulations.

The state draws fresh water from three sources, namely the Susquehanna River Basin, the Delaware River Basin, and the Great Lakes Basin.

The new regulations do not affect those in possession of DEC-issued water supply permits as of February 15, 2012, or those actions (e.g., withdrawals approved by the Delaware River Basin Commission or Susquehanna River Basin Commission, withdrawals of hydropower facilities under a valid Federal Energy Regulating Commission license, or withdrawals used for fire suppression or other public emergency purposes) exempt in accordance with 6 NYCRR 601.9. All other water withdrawal actions that meet or exceed the 100,000 gallons per day threshold will require a DEC permit. Power generating stations and municipal water systems are examples of operators that typically use more than 100,000 gallons of water per day.

Initial permits issued under the new regulations will be implemented using a staggered schedule that enables the largest water users to obtain permits with priority over small water users.

Efforts to preserve and manage an invaluable natural resource such as water are laudable. The regulations do, however, raise areas of concern including a failure to undertake a cumulative impact analysis of water usage in the state, including water usage for hydrofracking; and an inherent unfairness to small water users who are last in the pecking order when it comes to the issuance of withdrawal permits.

Hydraulic fracturing,"hydrofracking" or "fracking," is a process that forces a mix of water, sand, and chemicals down a gas or oil well under extremely high pressure with the goal of cracking previously impermeable rock (typically shale) to create fractures that will allow trapped oil and/or gas deposits to flow to the surface.

The Marcellus Shale, encompassing 104,000 square miles across Pennsylvania, West Virginia, Ohio, and parts of New York, is the largest source of natural gas in the United States. Since 2008, hydraulic fracturing has been used to release and capture the shale gas for energy consumption. However, New York does not permit the drilling of the Marcellus Shale formation. For the past five years, the DEC has had a ban on high-volume hydrofracking. The moratorium was put in force during the Paterson administration by executive order that called for revisions to the Draft Supplemental Generic Environmental Impact Statement, reflecting a comprehensive analysis of the environmental impacts associated with high-volume hydraulic fracturing combined with horizontal drilling. The DEC will not issue permits for hydrofracking until it obtains assurances from the NYS Department of Health that the process would be safe.

Hydrofracking uses water, but the volume used should be put in the context of other water uses currently in place. In the U.S. more water is used to cool power plants than for any other use pursuant to the United States Geological Survey. Over 53.7 billion gallons per day of water were used to cool power plants in the Great Lake states in the year 2000. By comparison, hydrofracking of the Marcellus Shale formation throughout Pennsylvania requires a total of 3 to 5 million gallons of water over a 2-to-5-day period per well based on Susquehanna River Basin Commission data.

The EPA estimates a horizontal well in a shale formation can use between 2 million to 5 million gallons of water. It must be noted that depending on the geological formation, technology used and type of well being drilled, water usage varies.

Horizontal hydrofracking is estimated to use five to ten times as much water as vertical hydrofracking. As Monika Freyman notes, "the whole drilling and fracking process is a well-orchestrated, moment-by-moment process requiring that one million to five million gallons of water are available for a brief period…they need an intense amount of water for a few days, and that's it." The overall amount of water used for hydrofracking, even in

states like Colorado and Texas that have been through severe droughts in recent years, is still small: in many cases 1 percent or even as little as a tenth of 1 percent of overall consumption, far less than agricultural or municipal uses.

The water used in the hydrofracking process in Pennsylvania comes primarily from fresh water obtained from surface sources such as rivers or recycled water from previous hydrofracking operations. Withdrawal of surface water should be undertaken when assurances are provided, supported by scientific evidence, that downstream water quality and quantity is sufficient to meet existing and anticipated needs of people, wildlife and ecosystems in the affected area.

The DEC initiated an environmental study on hydrofracking almost five years ago subject to a well-known longstanding moratorium. Governor Cuomo anticipates making a final decision on hydrofracking in the state before the 2014 elections. Business groups have expressed their frustration with the unresolved moratoriums, and the New York chapter of the National Federation of Independent Business has called for an end to "paralysis by analysis." The Federation has also advocated the enactment of stringent standards to protect the environment and health while permitting the extraction of natural gas by hydrofracking.

The New York Farm Bureau is a non-governmental organization representing the agricultural sector. The Bureau takes the position that hydrofracking, with certain rules in place, can protect the environment and would provide an economic benefit for the state enabling farms to not only continue to operate but expand. The Bureau supports rules that would require gas drilling companies to disclose the composition of their hydrofracking mixture as a condition to obtaining DEC permits, in addition to strict measures that would prevent methane migration into wells and aquifers. The Bureau advocates payments on a per unit basis for right-of-way agreements with oil and gas companies. These are but a sample of the four dozen policy statements the Bureau advocates in its support of natural gas drilling in the state.

Conversely, studies by academics, including Professor Vengosh of Duke University, indicate that hydrofracking produces high concentrations of metals, salts, and radioactivity downstream from a wastewater treatment facility in Pennsylvania.

It is surprising that the DEC has proceeded to promulgate water withdrawal regulations that do not address hydrofracking. Regulations were scheduled to be issued earlier this year, but the DEC continues to await the report of the New York State Commissioner of Health. It is hoped that the Health Commissioner's report will soon address hydrofracking and horizontal drilling practices and their impacts.

Effective June 1, 2013, large water users (100 million gallons or more per day) were required to submit applications for DEC withdrawal permits. Each year thereafter, other users will be required to apply for DEC permits until all users withdrawing 100,000 gallons or more per day submit applications by February 2017.

While water availability in New York is sufficient to meet domestic and commercial requirements, concerns have been raised that large water users with permits may not be eager to adjust their withdrawals in times of scarcity to meet the needs of small users. Given the anticipated increase in human population, large-volume water uses such as those required in hydrofracking must be considered in light of the effects of global climate change and other increasing demands on the state's water resource.

The DEC, upon digesting the long awaited environmental report on hydrofracking, should draft revised water withdrawal regulations that address the needs of all stakeholders. The economic opportunities and benefits of hydrofracking on the Marcellus Shale should, of course, be balanced against health and environmental concerns, but eight years of indecision is long enough.

As Cornell University researchers Rahm and Riha noted, rules and regulations are needed to ensure that water withdrawals are performed in a way that is considerate of natural conditions, existing withdrawals for other purposes, and ecological health.

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