It is certainly an interesting time to practice environmental law. This has been my sentiment for many years, but this remains especially true in 2018. While no longer a growth practice area as it was early in the careers of many of our colleagues in the environmental bar, environmental law is firmly rooted but ever changing. That is why it is now and will remain in the future a fascinating and challenging area of law. One has to look no further than the articles in this edition of the Environmental News to see that new issues, new scientific research and new government policies impact how environmental lawyers and consultants approach environmental problems. In this edition, there is a detailed update on the emerging contaminant GenX -- a substance generally unknown until recently -- and how state regulators are attempting to assess its risks to human health and the environment. While vapor intrusion is not a new concept, its implications across state regulatory programs continue to be top of mind. In particular, the extraordinary treatment of potential vapor intrusion by trichloroethylene (TCE) only appeared on the regulatory radar in Raleigh in the past two or three years. Vapor intrusion topics were the subject of a comprehensive two-day program in Charlotte last October, profiled in this issue. The final substantive article in this issue discusses how the new risk calculator developed by NCDEQ in 2017 and the 2015 risk based remediation legislation (included in North Carolina Session Law 2015-286) can potentially be used to close contamination incidents that would have been thought impossible.

GenX: Health Goals and On-going Investigations

By Edmund Woloszyn

The Chemours Company plant in Fayetteville produces a wide variety of films, fibers, and specialty chemicals. One of the byproducts found in their waste streams is ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propanate or GenX, which was found in the Cape Fear River. GenX is included in a group of compounds referred to as per- and polyfluoroalkyl substances (PFAS). The regulatory reach of the N.C. Department of Environmental Quality (NCDEQ) as it relates to GenX was summarized in a November 2017 article written by Robin Smith for the North Carolina Bar Association’s EENR Section newsletter.

No surface water or groundwater quality standards have been established in North Carolina for GenX. So DEQ requested the assistance of the Department of Health and Human Services (DHHS) to address the potential health effects of GenX as well as other PFAs. Few toxicity studies exist for GenX or other PFAS. With scant studies on the toxicological effects of GenX or other PFAs, DHHS developed a preliminary assessment on GenX consumption via drinking water based on the European Chemical Agency (ECHA) study titled Evaluation of substance used in the GenX technology by Chemours, Dordrecht that addressed a two-year rat chronic toxicity and cancer. ECHA reported a no observable adverse effects limit (NOAEL) of 1.0 milligrams of GenX per kilogram of body weight per day (mg/kg bw/day). Based on U.S. risk assessment calculations for an infant’s body weight and water intake rate, this corresponds to a concentration in drinking water equivalent (DWE) of 71,000 nanograms per liter (ng/L) or parts per trillion (ppt) of GenX, which was more than 100 times greater than the mean value of 631 ng/L detected in the Cape Fear River.

DHHS revised the DWE for GenX based on a subchronic toxicity study performed by DuPont on mice in 2010, which reported a no observable adverse effects limit (NOAEL) of 0.1 milligram per kilogram body weight per day (mg/kg bw/day), a 10-fold lower NOAEL than reported by ECHA. It should be noted that Chemours is a spin-off company of E. I. du Pont de Nemours and Company (DuPont).

Using a NOAEL from the subchronic toxicity study by DuPont, DHHS used EPA guidance methodology by applying default uncertainty factors (UFs) for interspecies variability (UF of 10), intraspecies variability (UF of 10, and subchronic to chronic extrapolation (UF=10) for a total UF of 1000. Using the NOAEL of 0.1 mg/kg bw/day and dividing by a UF of 1000 yielded a reference dose (RfD) value of 0.0001 mg/kg/day. The health goal was then calculated by multiplying the RfD by a relative source contribution (RSC) or 20 percent (0.2) and multiplying by the body weight of an infant divided by the intake rate [Health Goal = (0.0001 mg/kg bw/day x 0.20 x 7.8 kg) ÷ 1.113 liters/day)], which yielded a health goal of 0.00014 mil-

Continued on page 3
in years past. These are just some examples of relatively recent regulatory and policy developments that impact the environmental legal landscape in North Carolina. If you add these types of developments to major changes in environmental policy priorities and initiatives such as those we have seen with the change in administrations in Raleigh and Washington, D.C., I think you will agree that it truly is an interesting time to practice environmental law.

It has also been an interesting time for the Environment, Energy & Natural Resources Section, which has been active on several fronts worth noting here. First, on January 12, members of the Section Council and the Section Membership Committee hosted a reception for law students at the University of North Carolina School of Law to promote the Section and generate interest in legal careers in environmental and energy law. Members of the UNC Environmental Law Project and Section attendees chatted about legal career opportunities in government, the private sector, and non-governmental organizations. Special thanks to Section members Greg Icenhour, Jeff Tyburski and Adrian Velazquez for putting this event together. Second, the Section will sponsor the Fourth Annual EENR Section Sustainability Essay Competition for high school students across North Carolina with a prize of $500. The topic this year involves the tradeoffs associated with the use and promotion of biomass renewable energy resources in North Carolina. Inquiries should be directed to Professor Maria Savasta-Kennedy at mskenned@email.unc.edu. Third, members of the Section CLE Committee have been very busy planning the EENR Section Annual Meeting and CLE, which will be a joint program with members of the Georgia and South Carolina Bar Associations in Asheville, NC on May 11-12, 2018. Please save that date and be on the lookout for the forthcoming brochure for the program. A portion of the program will be state-specific programming for each state in separate rooms, but the majority of the program will focus on federal and regional environmental topics in plenary session. The program will include our annual North Carolina legislative and case law updates as well as remarks from NCDEQ General Counsel Bill Lane. Special thanks to Amy Wang, Mary Katherine Stukes, and Alex Elkan for their work on this program.

I look forward to seeing a large contingent of Section members and sponsors at the Annual Meeting in May. It will be a unique opportunity to network with peers in Georgia and South Carolina and could set the groundwork for similar joint programs in the future.