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ARTICLES

Emerging Contaminants: Valuation Issues Linked to Perfluorinated Chemicals (PFOS/PFOA, C8, GenX)

The EPA has not yet formally regulated PFCs, but states are doing so and lawsuits are already being filed.

By Orell Anderson, Steve Figgins, Rudy Perrino, Alex Wohl, and Steve Valdez – February 28, 2018

Recent media coverage and high-profile litigation involving perfluorinated chemicals (PFCs) has drawn the attention of the real estate valuation community. PFCs and their more common forms, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), are a class of synthetic compounds effective in repelling water, oil, and grease. Since the introduction of PFCs in the late 1940s, they have been used in a variety of industrial and manufacturing applications, including in the production of waterproof fabrics, insulation materials, non-stick cookware, and fire-fighting foam. As claims for damages to real estate involving these chemicals emerge, it is important for attorneys and their experts to understand the characteristics of PFCs and how their presence may or may not impact real property values.

Regulatory Activity

PFOA/PFOS are mobile, persistent in the environment, and bioaccumulative in humans and wildlife. Through both laboratory testing and epidemiological studies, they have been linked to a variety of adverse health effects, including low birth weight, delayed neurological development,

early menopause, kidney disease, and elevated cholesterol. They have also been linked to several cancers, including kidney, liver, testicular, thyroid, and pancreatic cancers.

In the 1990s, the U.S. Environmental Protection Agency (EPA) learned that PFOS was present in the blood of the general U.S. population. Most of the human exposure to PFCs is through food and consumer products such as non-stick pans, clothing, or adhesives that use it as a water repellant.

During the past fifteen years, the EPA has taken several regulatory actions to limit human exposure to PFOS/PFOA. In 2006, the EPA led several major companies in a global stewardship program to eliminate PFOA from emissions and products by 2015. According to the EPA, all participating companies have met the program goals.

In May 2016, the U.S. EPA issued a lifetime drinking water health advisory for PFOA/PFOS at 70 parts per trillion. While EPA health advisories are non-enforceable and non-regulatory, they are relied upon by state agencies and other public health officials in establishing enforcement criteria. To that end, several states have already passed groundwater quality regulations for PFOA/PFOS. Those states passing regulations include West Virginia, Ohio, Minnesota and New Jersey. Given the ubiquitous presence of PFOA/PFOS in drinking water sources throughout the nation, further regulation seems likely. Of more concern to the litigation community, state nuisance lawsuits are already on the rise and show no signs of abating. Furthermore, though the EPA and other agencies have issued health advisories, PFOS/PFOA face an uncertain and changing regulatory climate—especially given the changes to EPA regulation and funding under the current administration.

The Valuation Perspective

Valuation experts are faced with the task of quantifying price impacts, if any, of these contaminants on specific properties. Though PFCs are considered emerging contaminants, the framework for understanding the impact of contamination on property values has been developing for three decades.

From a valuation perspective, PFC contamination—like any chemical contamination—falls into two distinct categories. First, there is the larger environmental concern, such as its presence in the hydro- and biospheres which, though certainly concerning, is generally irrelevant to individual property diminution claims. The second category is the presence of PFCs as a localized, measurable property valuation concern. These two categories are not often separated in the

national and local news reports, but the distinction is critical to focused work in forensic property valuation.

Just as there are exposure pathways for the human body, there are analogous exposure pathways for affected properties whereby a specific property becomes exposed to *cost*, *use*, and *risk* effects in the market. In the case of PFCs, localized exposure tends to occur through contaminated water sources, such as aquifers. This localized contamination may be attributed to a specific nearby facility. Such facilities include industrial properties such as chemical plants and manufacturing facilities, as well as military bases and firefighter training facilities.

> **Cost, use, and risk and the remediation lifecycle.** PFCs may impact real property values through cost, use, and risk effects. There is a common pattern to the unfolding of these cost, use, and risk impacts. The sequence of events following the discovery of contamination follows three major stages—the assessment stage (before remediation), the repair stage (during remediation), and the ongoing stage (after remediation). These three phases together make up the remediation lifecycle.
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> It is essential that cost, use, and risk issues be considered separately within each of the three stages of the remediation lifecycle. Cost, use, and risk factors evolve over the course of the remediation lifecycle. Risk factors, for example, may be mitigated or minimized as the extent and character of PFC contamination is more fully understood at a specific property.
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> Most properties potentially impacted by PFCs are likely not fully characterized and thus face the full spectrum of cost, use, and risk issues associated not only with the assessment phase of the remediation lifecycle, but also the subsequent remediation and ongoing stages.
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> Cost issues in the assessment stage of remediation include the costs of assessment, immediate cleanup, and development of a remedial action plan. These costs are usually not borne by the non-source property owner, though there may be certain reimbursable mitigation efforts.
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> Use issues in the assessment stage may include the loss of access to private water, restrictions on consumption of locally sourced food and game, but could also include

relocation to a substitute property until site closure.

Risk considerations in the assessment stage include the uncertainties associated with a property whose health risks are not fully characterized. The risks associated with such a property may be compounded by the uncertain regulatory climate for PFCs in the United States. These assessment stage risk perceptions due to potential PFC contamination may further impact value as buyers and lenders factor the contamination into their evaluation of debt-equity ratios.

The impacts of risk on financing. A full consideration of risk effects in the assessment stage should include the impact on financing and the lending environment. Potential contamination may lead a risk-averse lender to believe that the value of the underlying real asset used to collateralize a loan is eroding. In response, such a lender would likely tighten loan terms by increasing the interest rate, lowering the loan amount, or even side-stepping the liability altogether by refusing to lend to affected or potentially affected properties. Thus, the risk associated with uncharacterized contamination may result in reduced financing opportunities for otherwise willing buyers. Likewise, if buyers fear losing their down payment, they are less likely to pay the market price. With tighter financing requirements, the buyer may pay all cash or seek seller financing at nonmarket terms as an incentive to buy. When the willingness to pay for a property affected by PFCs decreases and the willingness to sell increases, prices decline.

Looking Ahead

While the EPA has yet to formally regulate PFCs, the life time health advisory is already leading states to regulate them and lawsuits are already being filed. From a legal perspective, property owners, drinking water purveyors, and manufacturers of PFCs and PFC-containing products would be wise to conduct risk assessments and develop a litigation strategy ahead of time.

Remediation options exist for removing PFCs from groundwater and include pump and treat methods that extract the contaminated water, treat it through some form of carbon filtering, and discharge the treated water to a sewer or surface body of water. However, these remediation methods are costly in terms of time and money.

By applying the appropriate methodologies as promulgated by the Appraisal Institute, the International Right of Way Association and the Appraisal Foundation valuation experts should be

able to provide meaningful and accurate assessments of property value impacts, if any, due to PFC contamination.

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