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March 2016

TITLE: The lawyer who became DuPont's worst nightmare

Author: Rich, N.

Source: New York Times Magazine 2016 <http://nyti.ms/1V11Tgg>

Abstract: Just months before Rob Bilott made partner at Taft Stettinius & Hollister, he received a call on his direct line from a cattle farmer. The farmer, Wilbur Tennant of Parkersburg, W. Va., said that his cows were dying left and right. He believed that the DuPont chemical company, which until recently operated a site in Parkersburg that is more than 35 times the size of the Pentagon, was responsible. Tennant had tried to seek help locally, he said, but DuPont just about owned the entire town. He had been spurned not only by Parkersburg's lawyers but also by its politicians, journalists, doctors and veterinarians. The farmer was angry and spoke in a heavy Appalachian accent. Bilott struggled to make sense of everything he was saying. He might have hung up had Tennant not blurted out the name of Bilott's grandmother, Alma Holland White.

Document#: BIN.PFCS.5.11

TITLE: Perfluorochemicals surfactants in the environment

Author: Giesy, J.P., K. Kannan

Source: Environ. Sci. Tech. 2002 147A

Abstract: Concern about fluorinated organic compounds (FOCs), particularly perfluorinated (fully fluorinated) compounds (PFCs), is growing. The compounds are globally distributed, environmentally persistent, bioaccumulative, and potentially harmful. Moreover, the toxicity of these chemicals has yet to be extensively investigated, and, compared with chlorinated and brominated organic compounds, the environmental distribution of FOCs is poorly understood.

Document#: BIN.PFCS.5.12

TITLE: Concentrations and trends of perfluorinated chemicals in potential indoor sources from 2007 through 2011 in the US

Author: Liu, X., Z. Guo, K.A. Krebs, R.H. Pope, N.F. Roache

Source: Chemosphere 2014 98:51-57

Abstract: Certain perfluorinated chemicals (PFCs) in consumer products used indoors are potential indoor PFCs sources and have been associated with developmental toxicity and other adverse health effects in laboratory animals (Lao et al., 2007). The concentrations of selected PFCs including perfluorooctanoic acid (PFOA) and other perfluorocarboxylic acids (PFCAs), in 35 selected consumer products that are commonly used in indoors were measured from the year of 2007 through 2011. The products collected included carpet, commercial carpet-care liquids, household carpet/fabric-care liquids, treated apparel, treated home textiles, treated non-woven medical garments, floor waxes, food-contact paper, membranes for apparel, and thread-sealant tapes. They were purchased from retail outlets in the United States between March 2007 and September 2011. The perfluorocarboxylic acid (PFCA) contents in the products have shown an overall downward trend. However, PFOA (C8) could still be detected in many products that we analyzed. Reductions of PFCAs were shown in both short-chain PFCAs (sum of C4 to C7) and long-chain PFCAs (sum of C8 to C12) over the study period. There were no significant changes observed between short-chain PFCAs and long-chain PFCAs. Fourteen products were analyzed to determine the amounts of perfluoroalkyl sulfonates (PFASs) they contained. These limited data show the pronounced increase of perfluoro-butane sulfonate (PFBS), an alternative to perfluorooctanoic sulfonate (PFOS), in the samples. A longer and wider range of study will be required to confirm this observed trend.

Document#: BIN.PFCS.5.13

TITLE: Perfluorooctanesulfonate and related fluorochemicals in human blood from several countries

Author: Kurunthachalam, K., S. Corsolini, J. Falandysz, G. Fillmann, K. S. Kumar, B.G. Loganathan, M.A. Mohd, J. Olivero, N. Van Wouwe, J.J. Yang, and K. M. Aldous.

Source: Environ. Sci. Tech. 2004 38: 4489-4495

Abstract: Perfluorooctanesulfonyl fluoride based compounds have been used in a wide variety of consumer products, such as carpets, upholstery, and textiles. These compounds degrade to perfluorooctanesulfonate (PFOS), a persistent metabolite that accumulates in tissues of humans and wildlife. Previous studies have reported the occurrence of PFOS, perfluorohexanesulfonate (PFHxS), perfluorooctanoate (PFOA), and perfluorooctanesulfonamide (PFOSA) in human sera collected from the United States. In this study, concentrations of PFOS, PFHxS, PFOA, and PFOSA were measured in 473 human blood/serum/plasma samples collected from the

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United States, Colombia, Brazil, Belgium, Italy, Poland, India, Malaysia, and Korea. Among the four perfluorochemicals measured, PFOS was the predominant compound found in blood. Concentrations of PFOS were the highest in the samples collected from the United States and Poland (>30 ng/mL); moderate in Korea, Belgium, Malaysia, Brazil, Italy, and Colombia (3 to 29 ng/mL); and lowest in India (<3 ng/mL). PFOA was the next most abundant perfluorochemical in blood samples, although the frequency of occurrence of this compound was relatively low. No age- or gender-related differences in the concentrations of PFOS and PFOA were found in serum samples. The degree of association between the concentrations of four perfluorochemicals varied, depending on the origin of the samples. These results suggested the existence of sources with varying levels and compositions of perfluorochemicals, and differences in exposure patterns to these chemicals, in various countries. In addition to the four target fluorochemicals measured, qualitative analysis of selected blood samples showed the presence of other perfluorochemicals such as perfluoro- decanesulfonate (PFDS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), perfluorododecanoic acid (PFDoA), and perfluoroun- decanoic acid (PFUnDA) in serum samples, at concentrations approximately 5- to 10-fold lower than the concentration of PFOS. Further studies should focus on identifying sources and pathways of human exposure to perfluorochemicals.

Document#: BIN.PFCS.5.14

TITLE: Fluorochemical mass flows in a municipal wastewater treatment facility

Author: Schultz, M.M., C.P. Higgins, C.A. Huset, R.G. Luthy, D.F. Barofsky, and J.A. Field

Source: Environ. Sci. Tech 2006 40:7350-7357

Abstract: Fluorochemicals have widespread applications and are released into municipal wastewater treatment plants via domestic wastewater. A field study was conducted at a full- scale municipal wastewater treatment plant to determine the mass flows of selected fluorochemicals. Flow- proportional, 24 h samples of raw influent, primary effluent, trickling filter effluent, secondary effluent, and final effluent and grab samples of primary, thickened, activated, and anaerobically digested sludge were collected over 10 days and analyzed by liquid chromatography electrospray- ionization tandem mass spectrometry. Significant decreases in the mass flows of perfluorohexane sulfonate and perfluorodecanoate occurred during trickling filtration and primary clarification, while activated sludge treatment decreased the mass flow of perfluorohexanoate. Mass flows of the 6:2 fluorotelomer sulfonate and perfluorooctanoate were unchanged as a result of wastewater treatment, which indicates that conventional wastewater treatment is not effective for removal of these compounds. A net increase in the mass flows for perfluorooctane and perfluorodecane sulfonates occurred from trickling filtration and activated sludge treatment. Mass flows for perfluoroalkylsulfonamides and perfluorononanoate also increased during activated sludge treatment and are attributed to degradation of precursor molecules.

Document#: BIN.PFCS.5.15