Perfluorochemical (PFC) Contamination in Dalton, GA
Statement and Background
Prepared by U.S. Environmental Protection Agency (EPA)
October 8, 2009

Statement:

EPA received information in July 2009 from Dalton Utilities that PFCs were detected in soil, ground water, and compost at its Loopers Bend wastewater treatment facility, and in the adjacent Conasauga River. Dalton Utilities conducted a survey to identify drinking water wells in the immediate vicinity of the land application system in order to sample the wells for PFCs. To date, Dalton has sampled all 110 private water wells in a 1-mile radius around the Loopers Bend facility and most have no detectable levels of PFCs. One private well was determined to have concentrations of PFOS slightly above EPA's PHA. Dalton Utilities has voluntarily provided this residence with bottled water, and will continue to provide bottled water until a permanent alternative source of drinking water is found. Dalton Utilities is continuing its private drinking water well survey and sampling effort, and will notify residents of the results of the sampling.

In January 2009, EPA issued national drinking water PHAs for two PFCs, perfluorooctanaoic acid (PFOA) and PFOS. The PHA for PFOA is 0.4 parts per billion (ppb) [micrograms per liter (ug/L)] and the PHA for PFOS is 0.2 ppb.

In March 2009, EPA collected samples of drinking water from the public water supply systems of Dalton, Calhoun, Shannon, and Rome, Georgia due to their proximity to the Loopers Bend facility. The results showed no elevated levels of PFOA or PFOS above drinking water PHAs in any of these public water supply systems.

The Loopers Bend sewage sludge, known as biosolids, has been composted and sold to businesses and individuals in the Dalton area since 2003. Dalton Utilities has estimated that 80 million pounds of the compost have been sold and distributed. Dalton Utilities ceased its distribution of the compost in July 2009 after receiving data indicating elevated levels of PFCs in the compost.

Dalton Utilities is fully cooperating with EPA, the Georgia Environmental Protection Division (GA EPD), Georgia Department of Natural Resourses (GA DNR) to assess the impact of ground water and compost PFC contamination on the surrounding community.

Background:

Dalton is known as "The Carpet Capital of the World" and is home to many carpet and flooring manufacturers who may use PFCs, such as PFOA and PFOS, as surface protection and stain guards in their products. (Approximately 90% of the world's carpet is produced in this area.)

The majority of the wastewater treated by the Loopers Bend Plant is from industrial sources, primarily carpet manufacturers. After treatment, the 30 mgd of wastewater is land applied to a 9800-acre tract of land owned by Dalton Utilities using approximately 19,000 sprayheads. The biosolids are mixed with wood chips, composted on-site, and sold in bulk as a soil amendment to businesses and individuals in northwest Georgia and southeastern Tennessee.

In May 2009, EPA asked Dalton Utilities to investigate the potential for PFC contamination in its wastewater land application sprayfield and the compost generated by the facility. In response, in June 2009, Dalton Utilities collected and analyzed samples from its sprayfield site including soil, ground water monitoring wells, and effluent. It also sampled sewage sludge and compost produced in the wastewater treatment process, and surface water samples from the Conasauga River and a tributary, Holly Creek.

The initial analytical results were reported to EPA in July 2009. These results indicate:

- The compost has PFOA values ranging from 1900 to 4500 ppb and PFOS values ranging from 210 to 2500 ppb.
- The one sample of fresh sewage sludge has a concentration of PFOA of 91 ppb and PFOS of 210 ppb.
- The wastewater application sprayfield monitoring wells have PFOA values ranging from no-detectable level up to 4.4 ppb and PFOS values ranging from no detectable level up to 5.2 ppb. These wells are not sources of residential drinking water.
- The soil from the wastewater application sprayfield has PFOA values ranging from 5.3 ppb up to 37 ppb and PFOS values from 37.7 ppb up to 288 ppb.
- The effluent from the sprayheads have PFOA values ranging from 0.5 ppb up to 0.8 ppb and PFOS values from no detectable levels up to 0.4 ppb.
- The surface water samples taken in the Conasauga River and Holly Creek had PFOA values ranging from no detectable level up to 0.4 ppb and PFOS values ranging from no detectable level up to 0.7 ppb.

Based on these analytical results, Dalton Utilities has committed to conducting further evaluation in nearby areas including:

- A drinking water well survey to identify drinking water wells in the immediate vicinity of the land application system, and sampling any identified wells for PFCs.
- Further analysis of the on-site compost.
- Analysis of sites where soil was amended with compost and any nearby drinking water wells.
- An assessment of its collection system to identify sources and concentrations of PFCs in cooperation with the Georgia Department of Natural Resources (GA DNR).
- A wildlife impact study of deer and turkey (including blood and tissue analyses) to determine potential impacts of PFOA and PFOS on the local wildlife population.

EPA has not established advisory levels for PFCs in compost. However, the Agency is currently evaluating available data to develop these values and will keep the public informed of what we are finding and our actions taken to limit human and environmental exposures.

As part of a graduate study in 2006, the University of Georgia (UGA) sampled the surface water from the Conasauga River for PFCs both upstream and downstream of Dalton Utilities. The report, published in 2008, indicates downstream samples had concentrations of PFOA and PFOS. (PFOA concentrations ranged from 0.24 to 1.15 ppb; PFOS concentrations ranged from 0.19 to 0.32 ppb.)

In response to the elevated PFOA and PFOS levels found in the 2006 study, UGA partnered with the Georgia Environmental Protection Division (GA EPD) in late 2008 to sample fish and mussel tissue from sites upstream and downstream of Dalton Utilities. GA EPD is reviewing the fish tissue samples to determine if any follow-up actions are warranted.

Toxicology, Transport and other related information

PFCs are synthetic (man-made) chemicals that do not occur naturally in the environment. These compounds are used in a variety of industrial and consumer applications, including use as a processing aid in the manufacture of non-stick and stain-resistant surfaces and products and to impart water, stain, and grease resistance to carpets, paper and textiles. PFOS and PFOA are very persistent in the environment have also been found at very low levels both in the environment and in the blood of the general U.S. population. PFOS is no longer manufactured in the United States. Other PFCs have been determined to be degradable in the environment and to form PFOA, PFOS and related compounds.

Since April 2003, EPA has been working closely with companies and interested parties to develop the information necessary to better understand the sources and exposure pathways of PFOA. In January 2006, EPA invited the eight major companies in the industry to participate in the 2010/2015 PFOA Stewardship Program. The companies agreed to participate and in so doing committed to reduce facility emissions and product content of PFOA and related chemicals by 95% 2010, and to work toward eliminating emissions and product content by 2015. The first progress reports were received in October 2007, and showed significant reductions. For example, three companies reported greater than 98% reductions in emissions of PFOA in the United States, and 5 companies reported greater than 74% reductions of PFOA outside the United States.