U.S. Environmental Protection Agency
FACT SHEET

Perfluorochemical (PFC) Contamination of Compost from Dalton Utilities, Dalton, Georgia

October 2010

Introduction:

The Region 4 Office of the U.S. Environmental Protection Agency (EPA) is distributing this fact sheet to provide information to the public regarding perfluorochemicals (PFCs) found in soil, groundwater, surface water, and compost at the Dalton Utilities Loopers Bend wastewater treatment facility in Dalton, Georgia, and in the adjacent Conasauga River. 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. After receiving data indicating the presence of PFCs in the compost, Dalton Utilities temporarily ceased its distribution of the compost between July 2009 and May 2010. During this period, Dalton Utilities, working with Region 4 and other government agencies, conducted a study to better understand the potential levels of PFCs in local water, soil and compost samples.

After voluntarily ceasing distribution of the compost in July 2009 and prior to resuming distribution in May 2010, Dalton Utilities completed an extensive survey to understand potential exposures that may have resulted from selling and distributing the PFC-ladened biosolids. Private drinking water wells, compost, soil, industrial sources discharging to the Loopers Bend wastewater treatment plant, and surface water in the local Dalton area were sampled and analyzed for the PFCs.

PFCs are not currently on the list of regulated chemicals considered under EPA's biosolids program [Clean Water Act (CWA) Section 405 / 40 Code of Federal Regulations (CFR) Part 503]. Therefore, the distribution of the compost by Dalton Utilities is allowed under the EPA biosolids program.

EPA has coordinated with the Georgia Environmental Protection Division (GA EPD) and the Georgia Department of Natural Recourses (GA DNR) concerning the distribution of the compost and potential PFC contamination associated with the Loopers Bend wastewater treatment facility.

Dalton Utilities has informed EPA that it intends to regularly sample its compost and will only distribute compost that is ten times below EPA's residential soil screening guidance values for PFOA and PFOS. In addition, Dalton Utilities has informed EPA that it is requiring recipients of the compost to sign an agreement to use the product for landscaping only, and not for home gardens or farms. Individuals who are concerned about exposure to PFCs may want to avoid using compost from Dalton Utilities.

Background:

EPA regulations under the CWA allow biosolids to be composted and land applied as a soil amendment and fertilizer as long as certain monitoring requirements for regulated chemicals are performed and standard operating regulations are followed. PFCs are a class of man-made chemicals that, in most cases, are not regulated by EPA. Therefore, the testing of biosolids for these chemicals is typically not required.

PFCs are used in a variety of industrial and consumer applications and products, including fire-fighting foams; personal care and cleaning products; and oil, stain, grease, and water repellent coatings on carpet, textiles, leather, and paper. The Dalton Utilities Loopers Bend wastewater treatment plant receives wastewater from municipal (i.e., residential) sources, as well as nearby industrial facilities that use PFCs as part of their manufacturing processes. The majority of the wastewater treated by Dalton Utilities is from industrial sources such as carpet manufacturers. After treatment, the 30 million gallons per day of wastewater is applied to a 9800-acre tract of land owned by Dalton Utilities. The wastewater is applied using approximately 19,000 sprayheads to allow the effluent to percolate into the soil. The remaining Dalton Utilities' biosolids are mixed with wood chips, composted on-site, and distributed in bulk as a soil amendment to businesses and individuals primarily in northwest Georgia and southeastern Tennessee.

In January 2009, EPA issued national drinking water provisional health advisories for two PFCs, PFOA and PFOS. The provisional health advisory for PFOA is 0.4 parts per billion (ppb) [micrograms per liter (ug/L)] and the provisional health advisory for PFOS is 0.2 ppb. In November 2009, EPA released residential soil screening guidance values for PFOA and PFOS that are protective of children who might incidentally ingest soils during play. These soil screening values are 16,000 ppb [micrograms per kilogram (ug/kg)] for PFOA and 6,000 ppb for PFOS. The EPA's advisory levels for residential soils and drinking water are guidance values only and are not required to be met by federal or state regulations.

In 2006, the University of Georgia (UGA) sampled the surface water from the Conasauga River for PFCs both upstream and downstream of the Dalton Utilities Loopers Bend facility. The report, published in 2008, indicated downstream samples had elevated concentrations of PFOA and PFOS as compared to upstream samples. Concentrations of PFOA ranged from 0.24 (upstream) to 1.15 ppb (downstream) and concentrations of PFOS ranged from 0.19 (upstream) to 0.32 ppb (downstream).

In response to the elevated PFOA and PFOS levels found in the published 2008 UGA study, UGA partnered with the GA EPD in late 2008 to sample fish and mussel tissue from sites upstream and downstream of Dalton Utilities. Preliminary results from this sampling study indicated elevated levels of PFOS in spotted bass and blue catfish downstream of the Loopers Bend land application site. GA EPD is currently reviewing the fish tissue sampling results to determine if any follow-up actions are warranted.

Due to their proximity to the Loopers Bend facility, EPA collected and analyzed drinking water from the public water supply systems of Dalton, Calhoun, Shannon, and Rome, Georgia in March 2009. The public water sample results indicated the levels of PFOA and PFOS in community water systems are below the EPA's drinking water provisional health advisory levels. In January 2010, EPA collected additional drinking water samples from the public water systems of Dalton and Rome, Georgia. The final analytical report indicated concentrations of PFOA and PFOS in the samples collected from the two drinking water systems were below the EPA's provisional health advisory values.

In May 2009, EPA sent Dalton Utilities an information request under the CWA Section 308 to investigate the potential for PFC contamination in its Loopers Bend wastewater land application sprayfield and the compost generated by the facility. In response to this request, Dalton Utilities collected and analyzed samples from its sprayfield site in June 2009. Samples collected and analyzed included soil, groundwater monitoring wells, and effluent. Dalton Utilities also sampled sewage sludge and compost produced in the wastewater treatment process, and surface water from the Conasauga River and a tributary, Holly Creek.

From July through September 2009, Dalton Utilities also conducted a survey to identify private drinking water wells in the immediate vicinity of the land application area in order to sample the wells for PFCs. Of the 110 private drinking water wells sampled within a 1-mile radius around the Loopers Bend facility, 100 wells had no PFCs above the analytical detection limit, seven wells had detectable levels of PFCs below EPA's provisional health advisory for drinking water, two wells had detectable levels of PFCs

other than PFOA and PFOS; and, one well was determined to have concentrations of PFOS slightly above EPA's provisional health advisory level. Dalton Utilities quickly provided bottled water to the residence with elevated PFOS levels, and then connected it to the public drinking water system. Dalton Utilities continues to sample the remaining drinking water wells that had detectable concentrations of PFCs on a quarterly basis.

In July and August 2009, Dalton Utilities submitted its reports to EPA with detailed analyses, methods and results for the water and solids samples collected in response to EPA's May 2009 CWA Section 308 information request. The analytical results from these two reports indicated:

- The compost had PFOA values ranging from 1900 to 4500 ppb, and PFOS values ranging from 210 to 2500 ppb.
- One sample of fresh sewage sludge had a concentration of PFOA of 91 ppb, and PFOS of 210 ppb.
- The wastewater application sprayfield monitoring wells had 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 had 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 had 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

On October 6, 2009, EPA sent a second CWA Section 308 information request to Dalton Utilities for the monitoring of the private drinking water wells, characterization of the wastewater, sewage sludge, compost, compost use, wastewater application sprayfield and the Conasauga River and Holly Creek. From October 2009 through August 2010, Dalton Utilities submitted PFC analytical results as requested. In addition, in December 2009, Dalton Utilities voluntarily submitted wildlife data of PFC concentrations in deer and wild turkey serum, muscle and liver. Dalton Utilities also voluntarily completed the Dalton Utilities industrial users PFC wastewater sampling project. The summary of the analytical results from these reports indicated:

- The compost had PFOA values ranging from 590 to 2600 ppb and PFOS values ranging from 89 to 1200 ppb.
- The fresh sewage sludge PFOA and PFOS concentrations remained consistent with the July / August 2009 sampling event. Sample collected in April 2010, the most recent sampling, indicated concentrations of PFOA of 97.2 ppb and PFOS of 219 ppb.
- The wastewater application sprayfield monitoring wells had PFOA values ranging from no-detectable level up to 6.5 ppb and PFOS values ranging from no detectable level up to 14 ppb. Again, these wells are not sources of residential drinking water.
- The surface water samples downstream of Loopers Bend sprayfield site taken in the Conasauga River had PFOA values ranging from 0.14 to 0.358 ppb and PFOS values ranging from 0.33 to 0.665 ppb. Surface water samples at the confluence of the Conasauga River and Holly Creek had PFOA values ranging from no detectable level to 0.31 ppb and PFOS values ranging from no detectable level to 1.2 ppb.
- The muscle tissue sampled from a 0.5-year old female deer and a 3.5-year old male deer taken from the Loopers Bend wastewater sprayfield site had no detectable levels of PFOA, and PFOS values ranging from 12.65 to 90.3 ppb. The serum from these deer had no detectable levels of PFOA, and PFOS values ranging from 113 to 1130 ppb. The liver samples from these deer had no detectable levels of PFOA, and PFOS values ranging from 589 to 2675 ppb.

- The muscle tissue sampled from a 1-year old male wild turkey and 4-year old male wild turkey taken from the Loopers Bend wastewater sprayfield site had no detectable levels of PFOA, and PFOS values ranging from 86.1 to 184.5 ppb. The serum from these turkeys had PFOA values ranging from 18.5 to 33.3 ppb, and PFOS values ranging from 2090 to 2695 ppb. The liver samples from these turkeys had PFOA values ranging from no detectable level to 12.55 ppb and PFOS values ranging from 1570 to 2055 ppb.

Dalton Utilities also submitted analytical results of soil and five nearby drinking water wells of private property owners that received the compost. These locations were chosen based on the amount of compost used and the application of this compost to areas in close proximity to private drinking water wells. The analytical report indicated the following:

- The soil had PFOA values ranging from no detectable levels to 780 ppb and PFOS values ranging from no detectable level to 470 ppb.
- The five private drinking water wells had no detectable level of PFOA or PFOS.

Additional Information:

General information on PFCs is available at the EPA Office of Pollution Prevention and Toxics (OPPT) website:

http://epa.gov/oppt/pfoa/

Information on PFC contamination of compost from the Dalton Utilities, Dalton, Georgia and other related topics are available at the EPA Region 4 website:

http://www.epa.gov/region4/water/PFCdaltonindex.html

The Dalton Utilities compost contains other PFCs for which EPA has not issued drinking water and residential soil advisory levels. EPA is currently working to establish a threshold value for PFCs, including PFOA and PFOS, in biosolids to protect public health through all exposure pathways, but has not yet completed this ongoing work. Therefore, it is not currently known if the levels of PFOA, PFOS and other PFCs in Dalton Utilities biosolids are protective of public health. In addition, EPA has not established guidance levels for PFCs, including PFOA or PFOS, in wastewater effluent, sewage sludge, compost, groundwater or surface water as it has for drinking water and residential soil. Individuals that are concerned about exposure to PFCs may want to avoid using compost from Dalton Utilities.

If persons are concerned about PFC compounds in their drinking water, some water filtration devices (point-of-use devices that are installed at an individual tap, faucet, or outlets) may remove some of these compounds from water, based on a study conducted by the Minnesota Department of Health. Individuals should contact the company that makes the water filtration device to determine whether the device is effective in removing PFC compounds, and ask for advice on how often they should change their filters.

Contact Information:

Connie Roberts , Special Assistant to the Director
Water Protection Division
EPA Region 4
61 Forsyth Street
Atlanta, Georgia 30303
Phone: 404-562-9406
roberts.connie@epa.gov