



## U.S. Environmental Protection Agency FACT SHEET

### Perfluorochemical (PFC) Contamination of Biosolids Near Decatur, Alabama

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June 2009

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#### **Introduction:**

The Region 4 Office of the United States (US) Environmental Protection Agency (EPA) is distributing this fact sheet to provide information to the public regarding perfluorochemicals (PFCs) found in treated sewage sludge (biosolids) from the Decatur Utilities Dry Creek Waste Water Treatment Plant (Decatur Utilities) in Decatur, Alabama. For approximately the past 12 years, these biosolids from the Decatur Utilities were used as a soil amendment on about 5000 acres of privately owned agricultural fields in Lawrence, Morgan and Limestone Counties. EPA is coordinating with the State of Alabama, the US Department of Agriculture (USDA), the US Food and Drug Administration (FDA), the Decatur Utilities and local industries to investigate the potential for PFC contamination to the environment associated with the application of the biosolids at these sites.

#### **Community Involvement:**

On June 2, 2009, EPA hosted a public informational meeting in Moulton, Alabama to explain the coordinated federal, state and local activities and to respond to questions from residents in the community. Panelists at the meeting included representatives from the EPA, USDA, FDA, Alabama Department of Environmental Management (ADEM), Alabama Department of Agriculture and Industries (A&I), Alabama Department of Public Health (ADPH), and Decatur Utilities.

EPA expects host the next public information meeting in the fall of 2009.

## **Background:**

EPA regulations under the Clean Water Act allow biosolids to be land applied as a soil amendment and fertilizer as long as certain monitoring for regulated chemicals is performed and standard operating regulations are followed. PFCs are a class of man-made chemicals that, in most cases, are not regulated by EPA, and therefore, the testing of biosolids for these chemicals is typically not required. EPA recently developed drinking water provisional health advisory levels for two of the PFCs, perfluorooctanoic acid (PFOA), and perfluorooctyl sulfonate (PFOS). The provisional health advisory level for PFOA is 0.4 ppb and the provisional advisory level for PFOS is 0.2 ppb.

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. Several industries in the Decatur area manufacture or use PFCs as part of their manufacturing processes.

The Decatur Utilities plant receives wastewater from municipal (residential) as well as industrial sources, including PFC manufacturing and use facilities in the area. In 2007, one of the PFC manufacturers in Decatur notified EPA that it had unknowingly discharged PFCs into the Decatur Utilities wastewater treatment plant. This action led EPA to initiate an investigation to determine if the biosolids were contaminated and if the land application of the biosolids had resulted in a potential discharge of PFCs to the environment.

In October 2008, EPA received analytical results from its Office of Research and Development (ORD) for a limited set of screening study soil and sludge samples collected from two of the biosolids agricultural application sites and from the Decatur Utilities facility. The analytical results indicated relatively high levels, when compared with other environmental sampling results from industrial and non-industrial (e.g., residential) sites, of perfluorooctyl sulfonate (PFOS), perfluorooctanoic acid (PFOA), and other PFCs in the biosolids and in the soil that received the biosolids. These limited screening data on the two soil sampling sites showed PFOS ranging from 589 to 1296 parts per billion (ppb) and PFOA ranging from 55 to 2531 ppb in the nine soil samples analyzed by the EPA ORD.

Decatur Utilities made the decision to cease land application of biosolids in November 2008, after learning of these levels of PFCs in its biosolids.

After receiving the screening study results, EPA planned and conducted a series of targeted monitoring studies (November 2008 – February 2009). Two studies were conducted to determine if PFC contaminated the Decatur-area public drinking water system, ground water, and /or surface water. An additional study was conducted to better characterize the potential PFC contamination to the application area soils. The samples were forwarded to EPA ORD for analyses and data reporting.

### **Recent Activities:**

Samples collected by EPA and ADEM from the public water supply systems in Morgan and Lawrence County in November 2008 were analyzed for PFCs. There were no quantifiable levels of PFCs in two of the three public water systems (Moulton and Decatur). Levels of PFCs detected in the East Lawrence/West Morgan system were at levels below EPA's provisional health advisory levels of 0.4 ppb for PFOA and 0.2 ppb for PFOS in drinking water.

In January 2009, EPA and ADEM conducted a screening survey to locate private ground water wells in and adjacent to the land application areas. During February and March, EPA collected a total of 51 water samples from the identified ground water wells, ponds, and a stream in or near the fields that received the highest applications of biosolids.

The final report indicated the following results:

- Two of the six private drinking water wells sampled had PFOA levels above EPA's provisional health advisory level and none had levels above the PFOS provisional health advisory levels. These two wells had PFOA levels of 2.2 ppb and 0.6 ppb respectively. Both of these residences with elevated PFOA levels were quickly provided with bottled water and connected to the public water supply system by Decatur Utilities and a group of local industries in the area.
- Additionally, Decatur Utilities and the group of local industries offered to connect the owners of the remaining four residences, in or adjacent to the land application area and who were using private drinking water wells, to the public water system. Of these four residences, two chose to connect to the public water supply and two chose to continue using their existing drinking water wells.
- The final ground water sampling results from the 13 other water wells for PFOA ranged from no detectable levels to 6.41 ppb and for PFOS ranged from no detectable levels to 0.15 ppb.
- The final surface water sampling results from 32 ponds and one stream for PFOA ranged from no detectable levels to 11.0 ppb and for PFOS ranged from no detectable levels to 0.08 ppb.

In March 2009, 30 soil samples in or near the fields with the highest applications of biosolids were collected and forwarded to the EPA ORD for analyses. The final results of these analyses may be available in June 2009.

Currently, there are no federal guidance values for PFCs (including PFOA and PFOS) for livestock watering, meat or milk consumption, surface waters, or soils. The drinking water guidance values are specifically developed for protection of human health from the consumption of drinking water only, and are not representative of values that may pose a risk to livestock or to humans from the consumption of meat, milk, or exposure to soils. The USDA and FDA are conducting an investigation of the potential impact of the environmental PFC contamination on livestock and food products (such as beef and milk) in the Decatur area.

### **Next Steps:**

EPA and ADEM are working with the Decatur Utilities and a group of local industries to further investigate and identify any additional private drinking water wells near the biosolids application sites that may be contaminated with PFOA and/or PFOS at levels above the EPA's provisional health advisory levels.

The federal and state agencies, including EPA, USDA, FDA, ADEM, and the A&I are working diligently and expeditiously to collect and analyze environmental data and information from the area to advise the community on the risks associated with PFC exposures based on sound science and information.

Industries in the Decatur area have made significant progress over the last few years to reduce and prevent the release of PFCs. For example, the industries have stopped manufacturing PFOS and are phasing out PFOA. EPA and ADEM have initiated an investigation to identify industrial and domestic sources of PFCs to the wastewater treatment plant and to eliminate or reduce the intake and output of these contaminants to levels that will not interfere with the appropriate land application of biosolids.

### **Additional Information:**

- Information on PFC contamination of biosolids applied near Decatur, Alabama and other related topics is available at the EPA Region 4 website:  
<http://www.epa.gov/region4/water/PFCindex.html>

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