



6450 York Street - Denver, Colorado 80229-7499
(303) 286-3000 Telefax (303) 286-3030
www.metrowastewater.com

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Contact: Steve Frank, 303-286-3465
Cell: 303-263-5039

Some endocrine disrupting chemicals may defy wastewater treatment

DENVER, Oct. 20 — The Metro Wastewater Reclamation District is concerned that recent news coverage about fish with both male and female sex tissues found in the South Platte River downstream of the Metro District's treatment plant may be causing unwarranted concern.

News coverage focused on a class of chemicals called endocrine disruptors — mostly estrogen and chemicals that mimic estrogen. Endocrine disruptors are a subset of a larger group of chemicals often referred to as pharmaceuticals and personal care products.

Metro District officials said their primary job is protecting human health and the environment and expressed concerns about this issue. "We have been following it for several years, though many unanswered questions remain," said Steve Frank, public information officer.

The Metro District and 16,000 other wastewater treatment facilities across the country do not make endocrine disrupting chemicals. They treat the wastes generated by society, and those wastes may contain endocrine disrupting chemicals.

The US Geological Survey published a study in 2002 that found water samples taken in 1999 and 2000 from 139 streams in 30 states across the U.S. showed the presence of 95 endocrine disrupting chemicals and other so-called "organic wastewater contaminants." These chemicals, originating in residences, industry and agriculture, were found in 80 percent of the streams sampled.

"With so many chemicals from so many sources, the first and most important question for the Metro District is to determine what is causing the sexual tissues in fish downstream of its treatment plant to exhibit both male and female characteristics," Frank said. "We need to know whether finding fish with male and female tissues is a natural phenomenon. Plants, for example, make estrogen compounds. And we need to know whether it is human-induced and whether treatment technologies are available that can remove the cause of the malformation without causing another problem that is just as serious or worse," he said.

Frank said three points are important in placing the issue in perspective:

1. The Metro District is following the study reported in the news and the growing body of scientific research related to this issue. Fish and humans are vastly different species, and though current scientific evidence indicates that endocrine disrupting chemicals may

affect fish, linking similar effects to humans requires significantly more data. Meanwhile, the Metro District has contributed money to the Water Environment Research Foundation (WERF), which has conducted eight studies in this area since 1999 and has three more studies at the Request for Proposal stage. The Metro District is participating directly in the WERF study entitled "Contributions of Household Chemicals to Sewage and their Relevance to Municipal Wastewater Systems and the Environment." Jorg E. Drewes, PhD, at the Colorado School of Mines, is leading this study. It is also worth noting that endocrine disrupting chemicals (EDCs) are not unique to Metro's facility and Denver, or even the United States. EDCs also interest international water and wastewater agencies. WERF is a member of the GWRC (Global Water Research Coalition), which is made up of countries in Europe, the UK, Australia and South Africa. The first research topic area of the GWRC is EDCs.

2. As a public agency, the Metro District has a responsibility to its ratepayers to make sure the dollars we spend on their behalf to protect public health and the environment are well spent. We must be sure we have identified the substance(s) that are causing problems for humans or the environment and be sure the appropriate treatment technology is both available and reliable before we spend public dollars to install and operate it. It is worth noting that consensus has not yet been reached among scientists on the appropriate analytical methods for measuring endocrine disrupting chemicals, and that a great deal of research also remains to be done to determine the best removal methods. Nevertheless, the Metro District is following these studies with a great deal of interest.
3. The Metro District is on record as having commented to the US EPA in March 2004 that certain common household chemical compounds called nonylphenol ethyloxylates, which mimic the effects of estrogen, are so widespread and prevalent that perhaps the best approach for society is to ban them.

The Metro District believes the right approach under these circumstances is to make sure the right scientific questions are asked and fully answered before it commits significant public resources to building and operating treatment technologies. "We will continue to work with organizations such as the Water Environment Research Foundation, other scientists, and state and federal regulatory agencies to proceed to a solution that will protect public health and the environment," Frank said.

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