

Traces of cosmetics, medications create concerns for water supplies

By Bruce Finley

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A secure box for the take-back project stands in a King Soopers near West 32nd Avenue and Youngfield Street in Wheat Ridge. (Andy Cross, The Denver Post)

Colorado and federal authorities are ramping up efforts to control increasing pollution of waterways by "emerging contaminants" — antidepressants, antibiotics, birth-control pills, cosmetics and caffeine.

There is growing concern among scientists and utilities that traces of these urban contaminants — entering water supplies through human wastes, bathing and flushing — may harm people.

U.S. Geological Survey and University of Colorado studies using fish along Front Range waterways found the contaminants disrupt reproductive systems, leading to feminization — fish with male and female sex parts and populations of fish with many more females than males.



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(Andy Cross, The Denver Post)

This summer, federal Environmental Protection Agency teams began testing at Denver Water's Dillon Reservoir, and at the South Platte and other rivers. The EPA also launched new studies of effects on fish.

"At low levels, we don't know what the effects (on people) will be," said Kristen Keteles, a Denver-based EPA toxicologist.

"Current studies suggest (contaminants are) getting into the environment," Keteles said.

"We don't know what percentage is coming from improper disposal versus through elimination from the body."

The EPA is making emerging water contaminants a top national research priority, agency spokesman Rich Mylott said.

"Obviously, it's going to keep building up in the environment," said David Norris, a CU professor of integrative biology who has documented feminization of fish in three rivers.

Solving the problem ultimately "is going to take changes in the composition of what we

purchase," Norris said. "This has the potential of feminizing humans."

A few years ago, Denver Water officials discovered, through a university study, trace amounts of antibiotics and pharmaceuticals in water sources used to supply 1.3 million metro-area residents with drinking water.

"The fact that some compounds were detected surprised us and shows that even the best watersheds are experiencing the impacts of consumer products," Denver Water spokeswoman Stacy Chesney said.

The Colorado Department of Public Health and Environment, with EPA funding, is moving to expand a pharmaceutical take-back program launched in 2009.

Colorado is one of several states running take-back programs, which are aimed at preventing improper disposal of harmful chemicals in sewers and trash.

More than 3,400 pounds of drugs have been collected in special metal bins at 10 participating King Soopers and City Market stores and public-health clinics, according to Kathryn Stewart, Colorado Department of Public Health and Environment compliance unit leader.

State health department officials recently enlisted another King Soopers near Castle Rock.

The collected pharmaceuticals are ground up and hauled to an incinerator in Nebraska.

"There's no conclusion that there's any effect on human life," Stewart said. "However, the people concerned about it consider the fish to be the canary in the mine shaft."

The U.S. Drug Enforcement Administration has scheduled a national drug take-back day for disposal of controlled substances Sept. 25. Sites include police stations. DEA officials indicated drop-offs will be anonymous.

Neither federal nor state government agencies regulate releases of antidepressants, birth-control pills, antibiotics and other personal-care products — let alone caffeine.

Improvements this year at Boulder's wastewater treatment plant were shown to reduce feminization of fish. USGS and CU scientists are monitoring fish near the plant.

"We've found antidepressants, like Prozac, accumulating in the brains of fish," CU's Norris said. "We've found it slows their reactions down, slows their response to a predator."

Reverse osmosis and ultraviolet treatment systems being installed at some new suburban water plants can remove some contaminants.

Researchers haven't found ways of removing everything. Costs of plant upgrades run into the hundreds of millions of dollars.

"We recognize that pharmaceuticals and medications have greatly improved the health of Americans," but we need to deal with the consequences, EPA toxicologist Keteles said. "We want to do what we can — eliminate the improper disposal."

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You can drop off medications at King Soopers at 3400 Youngfield St. in Wheatridge; 1650 30th St. in Boulder; 4271 S. Buckley Rd. in Aurora; 9551 S. University Blvd in Highlands Ranch; and 2810 Quebec St. in Denver;

City Markets at 300 Dillon Ridge Rd. in Dillon; 400 North Parkway in Breckenridge; 4857 S. Broadway in Englewood; 4201 E. 72nd Ave. Suite D in Commerce City;

And the Wellington Webb Center for Primary Care at 301 W. 6th Ave. in Denver.

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