Oil wastewater for crops deemed safe, but skeptics remain

Matt Boone, Bakersfield Now, 11-14-16

BAKERSFIELD, Calif. — As California's rivers and lakes have run dry during its extended drought, one source of water has remained constantly flowing: oil wastewater.

It's often referred to as "produced water." For every gallon of oil pumped, 10-20 gallons of water are produced with it.

The practice of using oil wastewater to irrigate crops goes back to the 1960s, said Dave Ansolabehere. He's the general manager of the Cawelo Water District, north of Bakersfield.

Cawelo has been providing produced water to farmers since the 1990s, when it built a pipeline that delivered produced water from the Kern River Oil Field directly into its water district.

"That's why we've been the center of attention," he said of the recent scrutiny surrounding their business model. "We take the largest volume of produced water probably in the state and use it for irrigation."

Cawelo supplies a blend of filtered wastewater and fresh water to 34,000 acres of crops. But, due to the drought, Ansolabehere said the demand for the water has increased. Other districts have jumped on the trend, too.

"It is less expensive and more firm," he said. "It doesn't matter the hydrology, they're pumping oil no matter if it's a dry year or a wet year."

Before the produced water makes it to Cawelo's holding pond, the oil companies filter out some of the contaminants. First, the nonsoluble elements are gravity filtered or separated by small bubbles. Then, the volatile organic compounds are removed through oxidation, usually involving additional chemicals. Ansolabehere said the water they get from Chevron is then filtered through walnut shells. By the time it enters Cawelo's canals and is mixed with fresh water, Ansolabehere said it meets state drinking water standards for organic compounds.

As for the crops grown with the water, "They're as clean as any fruit in the nation," claimed Ansolabehere.

That finding was backed by a study commissioned by Cawelo and released in October 2016 looking at citrus. Additional test results on carrots and potatoes were presented to the Regional Water Quality Control board on Oct. 28 and showed no organic constituents had accumulated in the roots of the plants.

"We've tested locally. We've tested countywide. So far, there's no difference in the fruit, whether it's grown here in Cawelo with produced water or up in the Tulare area with freshwater coming straight off the Sierra Nevada," said Ansolabehere.

But to, Carli Leonard, an organic farmworker, just the thought of eating food irrigated with wastewater "sounds super gross."

Even if the crops are safe to eat, she said there is a big difference between food grown with care and quality opposed to that grown by companies she said are focused on profits.

“I think it’s better for your body, and it's better for the environment,” she said of organic food.

Both she and Oakland resident Carolyn Norr said they are skeptical of Cawelo’s test results.

“There’s a lot of mystery involved, and I think we should just be playing it safe and keeping our families safe by making sure we are using clean water and not water that is contaminated,” said Norr.

Pointing to the water contamination crisis in Flint, Michigan, Norr said environmental health disasters are often discovered too late.

“I don’t want to have our kids and our families be the guinea pigs,” she said, worrying it might come out “years later, ‘Oh, this one chemical was getting in at high levels, and now it’s causing a problem.’ ”

There is currently more research being done on whether or not crops can accumulate the harmful chemicals found in wastewater.

Luis Cabrales, a researcher at California State University, Bakersfield is beginning a three-year study in conjunction with Fresno State and the University of California, Merced, funded through the Agricultural Research Institute.

“We want to know the threshold that plants can withstand a certain organic load,” said Cabrales.

In simpler terms, while Cawelo may not have found an uptake of harmful chemicals in their crops, Cabrales wants to know if there is a concentration at which chemicals would start appearing in plants at unsafe levels.

To prepare the wastewater, Cabrales and his team are using cutting-edge technology by the company, Origin Clear. The equipment allows Cabrales to separate the nonsoluble particles and filter out the organic compounds through an “electro-occidation reactor.”

The different water solutions will then be used to water grasses that will be grown in a lab at Fresno State. The resulting crops will later be tested at UC Merced. Cabrales said he’s hoping to find the safest and most cost efficient way to use produced water for irrigation.

“You need to find a balance in which you protect the soil and the environment and also generate a cost effective treatment,” he said.