

Previously undisclosed State Water study

By Tom Harris
McClatchy News Service

SACRAMENTO — Polluted farm drainage and tainted ground water from hundreds of waste-water sumps are being pumped directly into California's two main water delivery systems, which irrigate the rich farm fields of the San Joaquin Valley and satisfy the thirst of more than 15 million Southern Californians, according to a previously unpublicized study.

Although it is unclear what threat the pollutants pose to human, animal and plant life, health officials are voicing concern.

Water officials were surprised to learn of findings in an unpublicized 1990 private study on the quality of drinking water sent south through the state's California Aqueduct and in federal reports on drainage into the federal Delta-Mendota Canal.

Clint Milne, San Luis Obispo County engineer, said he has read the aqueduct study and does not believe there's cause for alarm.

"There's not any problem with the quality of the water from a health standpoint," he said. "The water is safe. If it doesn't meet drinking standards, you can't deliver it."

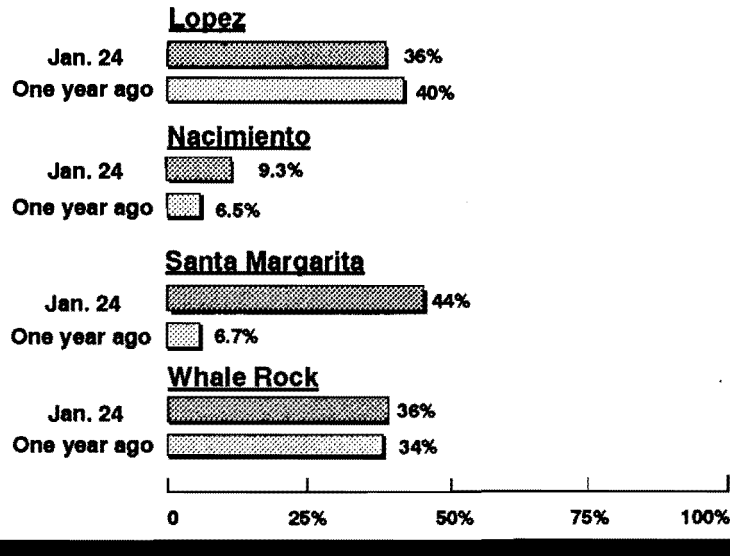
According to the study, untreated and largely unmonitored seepage from 251 agricultural drains, ground-water sumps and sources of urban, livestock-grazing and highway runoff is pumped into the state aqueduct. There it co-mingles with lower-quality, pesticide-tainted San Joaquin River water drawn through a federal canal.

The studies also show that 266 farm drains discharge into the federal canal, some of which contain levels of selenium up to 2,100 parts per billion — seven times greater than what flowed into California's Kesterson National Wildlife Refuge more than a decade ago and triggered massive death and deformity in waterfowl, fish and other wildlife.

Finally, the reports reveal that nobody knows what threat the drainage poses, because most of the testing for contaminants is done only once a month and is not timed to reveal any of the individual releases from the

County reservoir levels

Water levels at area lakes. Figures represent percent of capacity.



upstream drains, a monitoring deficiency that concerns state health officials.

The "Sanitary Survey of the State Water Project" was commissioned by the State Water Contractors Association and done by the engineering firm of Brown and Caldwell Consultants. One of its key conclusions is that the unregulated discharges may cause "significant short-term impact ... that is not detected by the routine monthly monitoring."

Richard Haberman, a sanitary engineer with the state Department of Health Services office of drinking water, said, "It's a concern of ours, to have those drains discharging into the aqueduct, especially."

Haberman said he feels that mixing and long storage times in reservoirs would allow any pesticides to decay before reaching Southern California customers. But he is worried that

smaller valley towns that take water directly out of the canals are at risk.

Although both the federal and state operators concede there is a potential for water quality impairment from the discharges, they say they have not seen anything, so far.

Normally, the effect of pumping ground water or surface runoff into the canals is undetectable because of the volume of water in the system, said Mike Delamore, chief of water quality for the Bureau of Reclamation, which built and operates the 116-mile Delta-Mendota Canal.

"But under low flows, we do have selenium levels that go up to fairly high numbers," he said.

Some of those range up to 76 and 87 parts per billion (ppb), far above levels known to be lethal to fish, waterfowl and other aquatic wildlife. At the levels measured in the canals, selenium would not be a threat to

humans, but with much higher selenium levels, the element can build up in

State and major project contractors who monitor contaminants in the aqueduct say they have never detected selenium beyond 1 or 2 ppb. Months ago, an environmental group said it had sampled and found 100 ppb in the state system and 100 ppb in the Delta-Mendota Canal. The current Environmental Protection Agency drinking water standard is 100 ppb.

Data from the federal Bureau of Reclamation on six agricultural drains on its system — the ones it monitors among the 266 drains — show year-round releases that average 10 acre-feet (approximately 400,000 gallons) a month and selenium levels ranging from a few hundred to several thousands parts per billion.

Dan Peterson, chief of water quality for DWR, said the agency monitors two or three of the creeks that flow into the canal but only infrequently. Those, he said, show only small increases in trace elements, including selenium and arsenic.

"We haven't sampled the area right near any of the drains," he said. "I am not sure what, if anything, anyone knows about how much selenium any of these drains contribute to their impact is."

There is confusion about how much selenium is in the aqueduct water.

DWR staff toxicologist Richard Dard said, "We have never measured anything in the canal above 100 ppb and we don't have any evidence of slugs of selenium moving through the system. If there were very high spiked slugs, it would be possible to miss them, but that doesn't seem feasible."

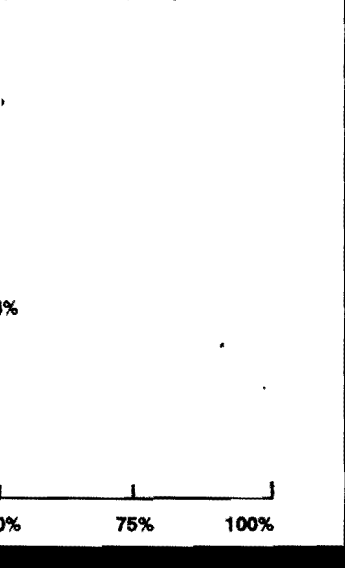
Nevertheless, tables of selenium levels at the back of the contractors' report show selenium at eight sampling points ranging from 10 to 40 ppb at

County & region

State Water study reveals high toxin levels

er levels

percent of capacity.



smaller valley towns that take water directly out of the canals are at risk. Although both the federal and state regulators concede there is a potential for water quality impairment from the drains, they say they have not found any evidence of selenium in anything, so far. Informally, the effect of pumping groundwater or surface runoff into the canals is undetectable because of the large volume of water in the system, says Mike Delamore, chief of water quality for the Bureau of Reclamation, which built and operates the 116-mile Delta-Mendota Canal. But under low flows, we do have selenium levels that go up to fairly high numbers," he said. Some of those range up to 76 and 87 parts per billion (ppb), far above levels known to be lethal to fish, waterfowl and other aquatic wildlife. The levels measured in the canals, he says, would not be a threat to

humans, but with much higher exposure, the element can build up to toxic levels.

State and major project contractors who monitor contaminants in the aqueduct say they have never detected selenium beyond 1 or 2 ppb. But 18 months ago, an environmental group said it had sampled and found up to 12 ppb in the state system and 24 ppb in the Delta-Mendota Canal. The current Environmental Protection Agency drinking water standard is 10 ppb.

Data from the federal Bureau of Reclamation on six agricultural drains on its system — the only ones it monitors among the 266 drains that dump into the canal — show steady, year-round releases that average 122 acre-feet (approximately 40 million gallons) a month and selenium counts ranging from a few hundred to a few thousands parts per billion.

Dan Peterson, chief of water quality for DWR, said the agency samples two or three of the creeks that flow into the canal but only infrequently. Those, he said, show only small increases in trace elements, including selenium and arsenic.

"We haven't sampled the aqueduct right near any of the drains," he said. "I am not sure what, if anything, anyone knows about how much water any of these drains contribute or what their impact is."

There is confusion about how much selenium is in the aqueduct water.

DWR staff toxicologist Rick Woodard said, "We have never measured anything in the canal above 1 or 2 ppb and we don't have any evidence of slugs of selenium moving through the system. If there were very sharp spiked slugs, it would be possible to miss them, but that doesn't seem very feasible."

Nevertheless, tables of test data in the back of the contractors' report list selenium at eight sampling points ranging from 10 to 40 ppb and each

having a median level (half the samples above that mark and half below) of 10 ppb.

Woodard was stunned by the numbers, even though DWR was identified as the source. "Those have got to be in error. We have never found those kinds of concentrations," he said. "It must be a misprint. They are not correct numbers. That is all there is to it."

Woodard is hardly alone in his surprise. Virtually everyone contacted about the previously undisclosed study expressed surprise at the number of drains involved, including representatives from the contractors' association, the Bureau of Reclamation and environmental groups.

Delamore, who charts such issues for the reclamation bureau, said he thought there were only six drains, rather than 266. Peterson initially thought there were two or three dozen.

Marshall Davis is the water quality laboratory manager for the Metropolitan Water District of Southern California, which receives half of the aqueduct water and supplies it to

public or private water companies with more than 15 million customers. He thinks dilution has dampened the impact of any drain contamination.

The 30-member contractors association is happy with the results of the study, says staff engineer John Coburn. "The existing monitoring, even though the report says it is lacking in some respects, has not shown any problems in the past.

"The bottom line for us is that the water we are delivering from the aqueduct is safe and reliable."

Environmental groups were less accepting.

"I think it will be a real shock to others, the public as a whole, that there are this many drains," said Eugene Gardner, staff scientist with the Bay Institute of San Francisco.

"If it is true that polluted drainage is entering the aqueduct, that underscores the critical need for reduced water use by irrigators," said Karen Garrison, a staff scientist in the San Francisco office of the Natural Resources Defense Council.

— Ann Fairbanks contributed to this story