

Animal waste likely cause of salmonella

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Young James Atencio of Alamosa gets his gallon water jug filled by U.S. Army Sgt. Sanchez at the Boyd Park water station during Alamosa's water crisis in 2008.

State releases final report on Alamosa

outbreak

STAFF REPORT

ALAMOSA — The Colorado Department of Public Health and Environment on Wednesday released its final report regarding the salmonella outbreak that struck Alamosa in 2008. The outbreak resulted in hundreds of people in the community becoming ill and had a significant economic impact on the city.

By the time the outbreak subsided, there were 442 reported cases of illness, typically involving vomiting and diarrhea. There was one death associated with the outbreak. Overall, state health experts estimate that up to 1,300 people may have been ill in the town of 8,900. For about three weeks during the outbreak, Alamosa residents were advised to drink bottled water or boil their water, and many businesses temporarily closed.

The health department's final report provides a comprehensive look at the disease outbreak, the response to the outbreak, and the conclusion of the 18-month investigation into how the city's drinking water became

contaminated. The investigation involved a detailed review of the water system; historical records; and interviews with city of Alamosa personnel, local health officials and responders to the outbreak.

"We believe the people in Alamosa deserve to know what happened, what was done about it and why it happened," said Ron Falco, Safe Drinking Water program manager in the Water Quality Control Division at the department.

The 65-page report concludes that animal waste most likely contaminated a concrete in-ground water storage tank that had several holes and cracks. A water sample collected during the outbreak indicated that water in the tank contained bacteria. Additional site visits conducted in 2009 found animal footprints in the snow around the tank, and a photograph in July 2009 captured bird feces on a corner of the tank that was repaired at the time of the outbreak. While these observations were made in 2009, they likely are representative of the animal activity that could have contaminated the water supply in the tank in 2008.

"We cannot say with absolute certainty where the salmonella came from because the actual contamination event was not directly observed, and probably occurred at least 7 to 10 days before the outbreak was reported," Falco acknowledged. "But after weighing all the evidence, we believe that the most likely scenario is that contamination entered this in-ground storage tank."

The city commissioned an inspection of the in-ground storage tank in July 1997 by a professional tank inspection company. That inspection report noted cracking and problems with the corners of the tank, and recommended routine inspections for the future. It appears that the tank continued to deteriorate into 2008. The state did not know of the city's 1997 inspection findings, and its own inspections did not focus on storage tanks and distribution piping.

Alamosa was granted a waiver from state requirements to disinfect its drinking water in 1974, so water being served to the public in Alamosa at the time of the outbreak was not chlorinated. The investigation showed that only a small quantity of bird or animal feces contamination may have led to the salmonella outbreak. This kind of outbreak may have been very difficult to prevent in a system that did not chlorinate its water.

The state is continuing its review of all public drinking water systems with disinfection waivers, and has withdrawn 72 of them since the Alamosa outbreak. "This incident further underscores the long-accepted public health benefits associated with disinfecting drinking water," said Falco. "Chlorine is a highly effective means of destroying bacteria such as salmonella."

The report also highlights how the department's Safe Drinking Water program historically has had staffing and funding challenges since its inception in the 1970s. Some new staff have been added to the program since the outbreak, but resource problems continue, with few solutions available during the current economic downturn. The Safe Drinking Water program is prioritizing the use of resources to enhance inspections of water storage tanks, escalate enforcement for systems that fail to correct problems found during inspections, and develop training to help water systems optimize storage tank and distribution piping operations and maintenance.

"I was very pleased with the department's response to the Alamosa salmonella outbreak," said Chief Medical Officer Ned Calonge, interim executive director of the department. "Many, many employees from the department's environmental and public health divisions, as well as additional individuals in other state and local agencies teamed up to assist Alamosa in addressing its crisis as quickly as possible."

The report has been posted to the department's Web page, along with a photograph slide show and video at: <http://www.cdphe.state.co.us/wq/drinkingwater/AlamosaOutbreak.html>