

Feds have admitted TCE mess is theirs; Cheyenne waits for cleanup details

Pollution saga hits crucial juncture

JARED MILLER Casper Star-Tribune | Posted: Tuesday, July 14, 2009 11:00 pm |



[Buy this photo](#) Tim Kupsick/Casper Star-Tribune

Rain water seeps from a long-empty missile bunker near Cheyenne, Wyo., on June 7. Cold War-era missile bunkers are the source of contamination of Cheyenne-area water wells. The contamination has been pluming from the area for decades.

CHEYENNE - The rugged beauty of the rolling hills west of Cheyenne shows no evidence of the invisible poison beneath the grassy surface.

But deep underground, and extending for miles, a massive plume of industrial solvent called trichloroethylene, or TCE, adheres to the granite bedrock and mixes with snow-fed groundwater.

The TCE plume, a remnant of the Cold War, has seeped into city and private water wells, and it lies beneath land the city plans to drill for more water in coming years.

After a long fight, the U.S. Army Corps of Engineers in March all but admitted that the plume - possibly the largest of its kind in the nation - resulted from dumping at former nuclear missile sites near the city.

But an important question remains: Will the federal government clean up the mess or simply treat municipal and private water at the source, leaving thousands of gallons of toxic chemical pollutant in the ground?

State and city officials have already staked out their ground in what could be the next big fight in a long saga of environmental degradation in southeastern Wyoming.

"We will be pushing to clean up the whole plume; we want comprehensive cleanup," said Jane Francis, geological supervisor with the state Department of Environmental Quality's Water Quality Division, who oversees the state's interests in the contamination area under the federal Superfund program.

'Safe to drink'

Once used by the military and industry as a degreaser, TCE today is the most widespread water contaminant in the nation.

Considered a "probable" carcinogen by the International Agency for Research and Cancer and other organizations, TCE is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste.

Drinking small amounts of trichloroethylene for long periods of time may cause liver and kidney damage and can impair fetal development, according to the U.S. Department of Health and Human Services.

Consumption of TCE in Cheyenne's drinking water has been extremely limited, and no adverse health effects from the pollution have been documented in the Cheyenne area, state officials said.

"The water is safe to drink," Francis said.

The TCE plume near Cheyenne was deposited nearly five decades ago at a former nuclear missile site then under command of Cheyenne's F.E. Warren Air Force Base.

The missiles were stationed at seven locations in southeastern Wyoming and were part of the nation's first intercontinental ballistic nuclear missile system. They were in operation from about 1960 to 1964.

During readiness drills, young military men prepared the missiles for launch and then used TCE to flush fuel residue. They disposed of the powerful solvent in unlined pits that drained into the shallow water table.

There is no evidence of nuclear contamination at the former missile sites, state and federal officials confirmed.

At six of the former missile sites, the TCE drained straight down and never reached private or public wells. But the contamination under Atlas missile site 4, 16 miles west of Cheyenne, reached underground streams and spread for miles.

The TCE plume is estimated at 10 miles long, and it reaches depths of 300 feet - far larger than most other TCE plumes in the country.

Wells test positive

TCE was first discovered in Cheyenne municipal wells west of town in 1997. It was subsequently found in other wells in the Borie well field, an important source of city water during the summer months, city officials said.

Initial tests in those wells showed concentrations of TCE well above recommended federal guidelines. The federal EPA considers more than 5 parts per billion of TCE unsafe to drink.

Fortunately, the city water treatment plant was already fitted with a filtration system sufficient to remove the TCE. The Cheyenne Board of Public Utilities has adopted a policy prohibiting any detectable amount of trichloroethylene in city drinking water.

"We think that's what the community wants," said Bud Spillman, manager of the city water treatment plant, referring to the no-tolerance TCE policy. "We take pride in the high-quality drinking water we provide the community."

Last December, tests revealed 40 ppb of TCE in one well, enough to overpower the city filtration system. The well was shuttered and will remain so until the Army Corps of Engineers furnishes temporary filtration equipment at the wellhead this summer, city and federal officials said.

Private wells tainted

Test wells on the Belvoir Ranch, a sweeping property west of town that the city bought in 2003 and hopes to tap for additional drinking water, have also tested positive for TCE.

Tim Wilson, director of the Cheyenne Board of Public Utilities, indicated that the board did not know about the contamination when it bought the ranch.

"I don't know that we had direct access to that type of knowledge," said Wilson, adding that development of aquifers under the ranch will proceed despite the contamination.

Wilson stressed that the Board of Public Utilities will continue to ensure that no TCE enters the city water supply.

Private water users have also been affected by TCE.

Hank VanGoethen and his family drank bottled water for months after tests in March 2008 showed that his well west of Cheyenne contained about 20 parts per billion of TCE, four times the maximum allowable level.

The Corps responded by providing the bottled water and agreeing to install a permanent filtration system at the VanGoethen residence and all other private wells affected by TCE.

"However long the contaminant has been in the water, we've been drinking it," said VanGoethen, who has lived at his current home for 27 years.

Superfund money

City officials immediately suspected the former Atlas missile sites as the source of the TCE contamination, but initially they could not afford to investigate, said Bud Spillman, manager of the city water treatment plant.

Eventually, the state Department of Environmental Quality won a grant to proceed with testing, and federal funds became available under the Formerly Used Defense Sites program, or FUDS, which falls under the federal Superfund process.

The investigation and any cleanup of the TCE plume near Cheyenne will take place within the framework of the FUDS process.

Army Corps digs in

But federal scientists believed sources other than the Atlas missile TCE plume might be responsible for pollution in the municipal water wells.

They insisted that a rock quarry, a nearby industrial plant, a local shooting range and a heavily used locomotive corridor all be investigated as possible sources of contamination.

"One by one, we ruled them all out," Francis said.

The Army Corps ultimately took responsibility for TCE contamination to a point east of the former missile sites called Cow Camp, but well short of the city water wells.

That's where the standoff stood until U.S. Sen. John Barrasso, R-Wyo., intervened in December 2007.

As the newly appointed ranking member of the Superfund and Environmental Health Subcommittee, Barrasso sent a letter to the chief of the Army Corps inquiring about the contamination and the lack of federal accountability.

The letter asked why the Army Corps had not responded to a DEQ theory that the Atlas 4 missile site was the source of TCE contamination, according to Barrasso's own records.

The Army Corps responded by drilling additional wells east of Cow Camp that tested positive for TCE. Those test wells, according to state scientists, provided the missing evidence that linked the Atlas 4 missile site to contamination in the Ogallala aquifer.

Soon after, the Army Corps scientist who had discounted the Atlas sites as the source of the contamination was reassigned, state officials said, and a new official with experience in pollution cleanup was tapped for the post.

Barrasso blasts Corps

In March, the Army Corps released a voluminous report that all but admitted what Francis and other state scientists believed all along:

"Based on all currently available data, (Atlas missile) site 4 is contributing TCE contamination in the Borie well field, and the municipal wells have likely been impacted from the site 4 TCE release."

However, additional careful wording in the report left room to blame alternate sources for the contamination should any ever surface.

"It cannot be stated conclusively that site 4 TCE is the only source," the report said, "as other industrial and commercial operations exist in the area."

Barrasso lambasted the Corps during a Dec. 11 speech on the Senate floor for hedging its responsibility in the report.

"The report doesn't actually say, 'We are responsible,' " Barrasso said mockingly. "Washington can never admit its faults so transparently. No, instead the report says that other potential sources of trichloroethylene, the chemical in our city's wells, 'May be limited.'

"I guess that's Washington's way of saying, 'Yes, it was us,' " said Barrasso, adding that the Army Corps should pay to remove the contamination.

State officials are adamant that Barrasso's intervention in the process was critical.

Francis said a federal official even told her that congressional pressure plays a major role in determining which of hundreds of TCE plumes across the nation get cleaned up.

"Barrasso's office has prodded them every step of the way," Francis said.

'We got their attention'

Even the Army Corps concedes that politics probably played a role in moving the process forward.

"Certainly getting the politics involved has certainly helped stimulate the interest of everyone to move forward as quickly as possible," said Jeff Skog, project manager for the agency.

But Skog said it's inaccurate to portray the Army Corps' actions during the past six years as adversarial.

Skog said the Corps did the best it could with limited funding to follow established federal laws and procedures, eventually reaching the proper conclusion.

"We're stepping up and doing the right things, as far as I'm concerned," Skog said.

A federal study on the feasibility of several cleanup options is due Sept. 30. Skog wouldn't hint about the contents, other than saying all of the alternatives will be costly and potentially difficult.

City and state officials insist that they will push hard for a full cleanup of TCE at all seven former Atlas missile sites.