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## Carbon capture project leaking into their land, couple says

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*Pair abandon Saskatchewan farm because of blowouts, dead animals and algae*

First there were the strange blooms of algae on water that had pooled in a gravel pit near Jane and Cameron Kerr's house. Then there were the dead animals - a cat, an African goat, a rabbit, a duck, a half-dozen blackbirds. Then there were the night-time blowouts, which sounded like cannons and left gashes in the side of the pit.

But what started as a series of worrisome problems on a rural Saskatchewan property has now raised serious questions about the safety of carbon sequestration and storage, a technology that has drawn billions in spending from governments and industry, which have promoted it as a salve to Canada's growth in greenhouse-gas emissions.

Before the blowouts made them nervous enough to leave home, the Kerrs lived on a farm near Weyburn, which is home to a major project that involves taking captured carbon dioxide and injecting it into the ground. It pumps 6,000 tonnes of the substance underground every day; since 2000, it has sequestered more than 16 million tonnes, all of it 1.4 kilometres below the surface.

In Weyburn, the injected gas is used to help squeeze more oil out of old wells. But the project has been a key test of a technology that could help clean up atmospheric emissions from industrial users like coal-fired electrical plants and oil sands.

Carbon capture and storage holds the promise of allowing industry to continue operating while scrubbing out carbon emissions. As such, it has become a key plank of climate-change strategy for both the federal Conservatives and the government of Alberta, which has dedicated \$2-billion to funding several pilot projects.

Industry says it is perfectly safe, a conclusion echoed by a massive \$40-million study for the International Energy Agency that received funding from 10 companies and governments in Canada and Europe.

One company immediately countered parts of the Kerrs' story, arguing that other factors could be to blame for the strange occurrences, since carbon dioxide has never been injected below their property. On Tuesday, Saskatchewan Premier Brad Wall said there is "nothing proven by the incident," although he promised the government will examine the occurrences.

"I haven't seen any evidence to tell me that it's not safe, but we're doing the homework. We're going to ask all the questions," he said.

Still, the Kerrs' account has cast a stark light on the problems that could arise from carbon sequestration. Their troubles began in 2003, when the farming couple dug a gravel pit to supply aggregate to Encana Corp., the company that was then in charge of the Weyburn project.

When the snow melted the following spring, they found that large cones of algae had developed in the bottom of the pit. It was an unusual discovery.

"Dad used to have gravel pits back into the 1960s, and you never had that," Mr. Kerr said. "You could dig a gravel pit and get down there and drink the water, it was that clean. I wouldn't do that today."

The algae bloom was just the beginning. Mr. Kerr saw "slicks of red that looked like blood had come onto it. And there were dead animals around it."

When the blowouts happened, they were accompanied by foam that shot out, looking as if someone had shaken a great underground pop can. More worrisome, the strange events seemed to coincide. "We'd be out to the pond and notice a blue slick and go back three hours later and find a rabbit that dropped dead," Ms. Kerr said.

To them, it appeared obvious what had happened: Carbon dioxide from the Weyburn injections had begun seeping to the surface. That explained the foam - since carbon dioxide is what makes pop fizzy - and it explained the animal deaths, since the gas can cause asphyxiation.

They fought with the government of Saskatchewan, and received a pledge in 2007 for a year-long study. They say that promise wasn't kept, forcing them to hire their own consultant. In October, their suspicions were confirmed - 25 soil tests showed levels of carbon dioxide as high as 110,000 parts per million, or nearly 70 times what Paul Lafleur, the consultant, considered normal.

Levels that high, especially near a home, "could be very dangerous," concluded Mr. Lafleur, who said faults in the rock beneath the Kerr property likely allowed "micro-seepage" of carbon dioxide, which then found its way to the surface. Most damning of all: The fingerprint of the carbon dioxide he sampled matched what was being injected, he said.

But scientists who have reviewed Mr. Lafleur's report say it's not clear that he has proven such a match - and research in the area casts doubt on whether those high levels are, in fact, unusual. In 2001, before the Weyburn injections began in earnest, scientists collected samples across the area. One found 125,000 parts per million of carbon dioxide.

In addition, Cenovus Energy Inc., the company that now runs Weyburn, said the Kerr property has never seen carbon injections, adding it is very unlikely that the substance could have travelled there underground. Cenovus has hired independent consultants to review Mr. Lafleur's report. They have not yet completed their work, but "as Cenovus, we're confident that our carbon dioxide is not affecting the Kerrs' property," said spokeswoman Rhona DelFrari.

"And we're not just saying that. There have been tests done over and over again by external consultants to prove that as well."

The Saskatchewan government also argues that it did make good on its pledge to study the Kerr property. Officials took air, water and soil samples and concluded in a 2008 report that there was nothing wrong.

The Weyburn project "is the largest laboratory in the world, and it is being studied to death by numerous eminent scientists," said Ed Dancsok, an assistant deputy minister in Saskatchewan Energy and Resources.

Some have come from such institutions as the British Geological Survey and the University of Rome that have little incentive to colour their findings in favour of industry.

And, Mr. Dancsok said, "no evidence of carbon dioxide originating from the reservoir has been observed in any of the surveys undertaken."

*With a report from Trevor Melanson*

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