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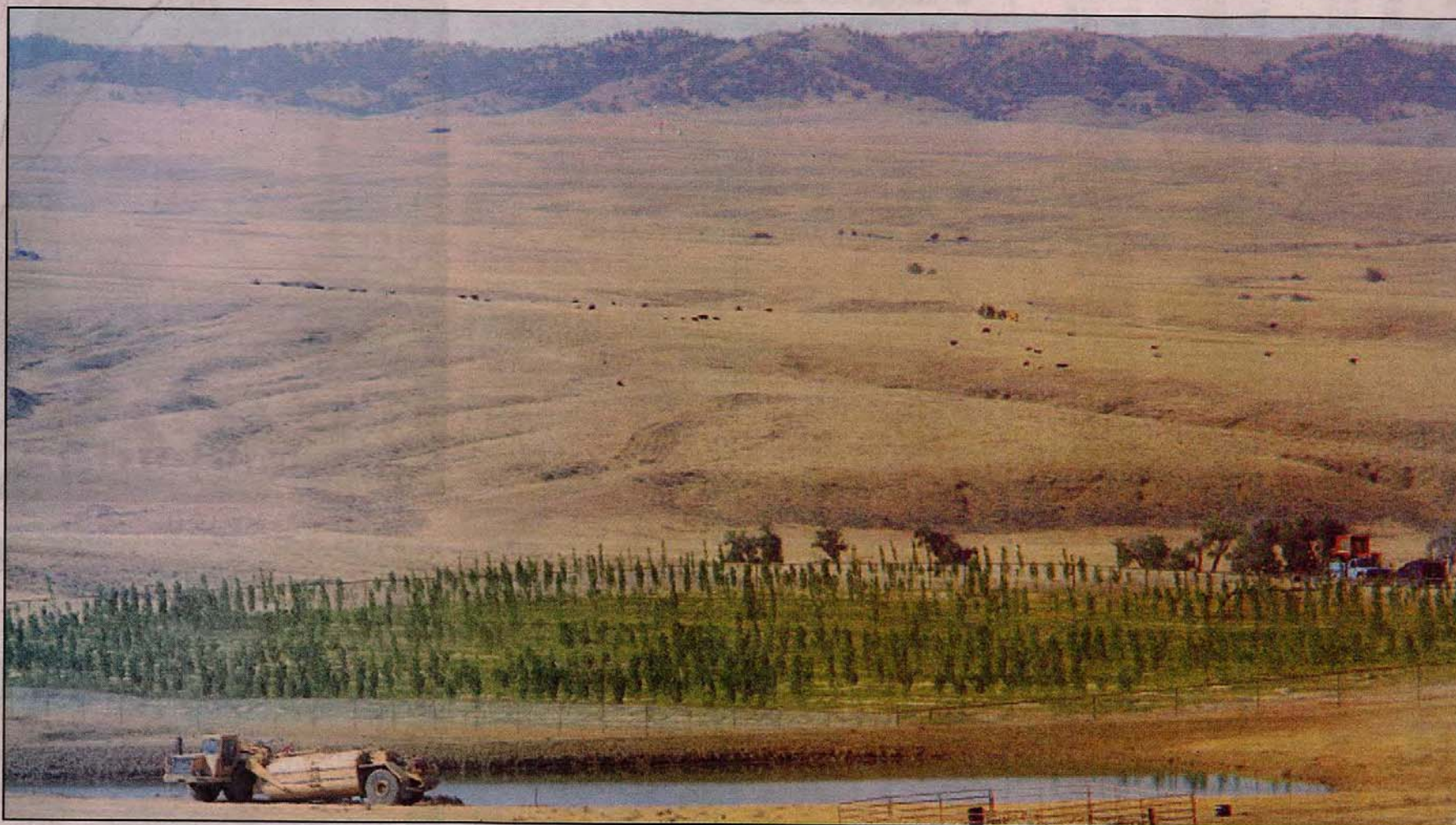
# NR MARKETPLACE

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**Section C**

Sunday  
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News-Record photos by Paul Ruhter

**A tree farm sits in rural Johnson County where coal-bed methane water is being neutralized to help grow poplar trees.**

# O creating an Oasis

from METHANE WATER

## Johnson County 'Garden of Eden' flourishes with the aid of coal bed methane water

By PETER GARTRELL  
News-Record Writer

The green oasis next to the coal-bed methane water reservoir stands out from the brown, sagebrush-covered prairie that eventually disappears into the Big Horn Mountains.

Over a rise on the Upper Sussex Road — to the west of the Campbell County line in a valley just north of nowhere — the grove attracts hundreds of rabbits with a unique landscape feature: Trees.

But not a single one of the 2,100 trees covering the three-acre spread in carefully planted rows would be there if it were not irrigated by coal-bed methane water.

"What we started was what we consider a pilot project," said Patsy Ballek, an environmental specialist with Windsor Energy Group, an Oklahoma-based company with coal-bed methane operations in the Powder River Basin.

Now the trees — poplars bred by an Iowa-based company to soak up large volumes of salty water — appear to be thriving. Some have grown more than two feet since they were planted in late April, giving Ballek and others involved with the project hope that the technique might be used in other parts of the basin.

"We were looking to use our water for ben-



**Very few trees at the experimental site are experiencing dying leaves from an excess of sodium in the methane water.**

eficial use and one of our consultants came up and said they had been investigating some stuff with trees," Ballek said.

The investigation began when Chris Ewart was a graduate student in Portland, Ore. Now an engineer with CBM Associates in Gillette, Ewart thought trees he had seen planted on top of capped Oregon landfills might be a solution to water management issues in the Powder River Basin.

With the help of former professors, Ewart found the trees were planted by Ecolotree. Owned by Lou Licht, the North Liberty, Iowa,



**Lou Licht of Iowa grades each growing tree on a scale of one to five, while Kenneth Andreen of Edgerton takes notes.**

company uses trees to reduce pollution by minimizing seepage into the water table at 85 sites in 22 states across the country.

The Johnson County project has gone as well as could be expected, Licht said. Only a handful of trees have died, failed to grow or withered when the saline water from the sprinklers landed on their leaves.

"Better than I thought it would be," Licht said earlier this week, as he stood under the blazing July sun during a break from an inventory of the trees.

The poplars were planted in trenches a little less than a foot in diameter and up to 10 feet deep. Since being put in the ground, they have gone from long, leafless poles to trees with leaves — their growth marked by green twigs sprouting from the bark that's brown and spotted with white specks.

The trees are watered for two to three hours a day by coal-bed methane water that is piped to sprinklers via a gravity-flow system.

Cow manure is spread across the ground as fertilizer, and a mixture of gypsum and

sulfur is used to neutralize the naturally alkaline water. Grass is grown to choke out weeds and all the trees are male to keep them from germinating and taking seed outside the irrigated area.

It has made for a sight that resembles the Garden of Eden off Highway 191, northeast of Linch. Kenneth Anderson, a retired farmer who cares for the trees during the week, said he has seen sage grouse in addition to the rabbits that hop through the field. Antelope and cattle have been attracted to the spruced-up area but are kept out by a fence.

"It has worked as well as we'd hoped," Ewart said as he bounced along in the passenger seat of a pickup truck, traveling along the 22-mile dirt road to the site at Jepson Draw.

"If this area were conducive to growing trees, there'd be trees in all the draws," he said.

Bureau of Land Management officials toured the site this week and came away impressed. The system could help operators

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# Oasis: Wildlife are attracted to the area

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manage water coming from coal-bed methane wells. However, Mike McKinley, a hydrologist with the Buffalo Field Office, said it was not a silver bullet because it uses relatively little water.

Licht estimates the site will use up to 1.3 million gallons of water annually. More than 544 million gallons were pumped from the basin's coal seams last year.

"This is actually a beneficial use if it's done correctly," McKinley said. "If it's done properly with the soils ... I don't see any (negative) effects."

Based on previous experiences and experiments he's done at his Iowa farm, Licht said the trees can grow 40 feet tall and up to 24 inches in diameter. When harvested, the wood has been used for baseboard siding and paper pulp. But the main task is to sop up water.

"We do not plant trees for landscaping. Every tree we have has a permit attached to it," he said. "I believe these trees multi-task. You can do more than just grow wood."

The system is attractive at this point because the trees use more water than irrigated crops, Ballek said. She and Ewart agreed that if the trees prove successful, they eventually could be an option for private landowners. However, hurdles remain before the test site can be declared a success.

The first frost of the fall and last of the spring will be major tests of heartiness for the trees. And although the trees have responded well to the methane water so far, Licht said there is still tweaking to be done.

"We decided on a small project because it would be more like a study," Ballek said. "We want to be environmentally friendly, and we want to use our landowners' property, but we want to do it in the right way."

Ewart is hopeful.

"We're using the water to grow trees in Wyoming. We're finding out if it's good science," he said.

Those at the site agreed: It looks good so far.