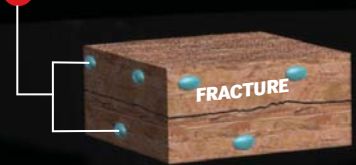


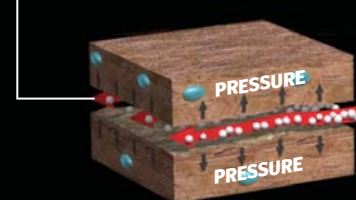
The technology that fuels the boom

Hydraulic fracturing—or “fracing”—is common in northwest Colorado, where tight formations trap gas, making it hard to extract. To coax it out, drillers send huge volumes - sometimes numerous boxcar loads - of a mixture of sand, gel, water and other chemicals under high pressure into the well. This forces the fracing fluid into tiny openings in the rock until it’s cracked open, creating the perforations that liberate the product. The sand, or a kind of fiberglass bead, aluminum pellets or other material—often called “proppants”—holds open the cracks, allowing continuous flow of gas into the well casing and to the surface.

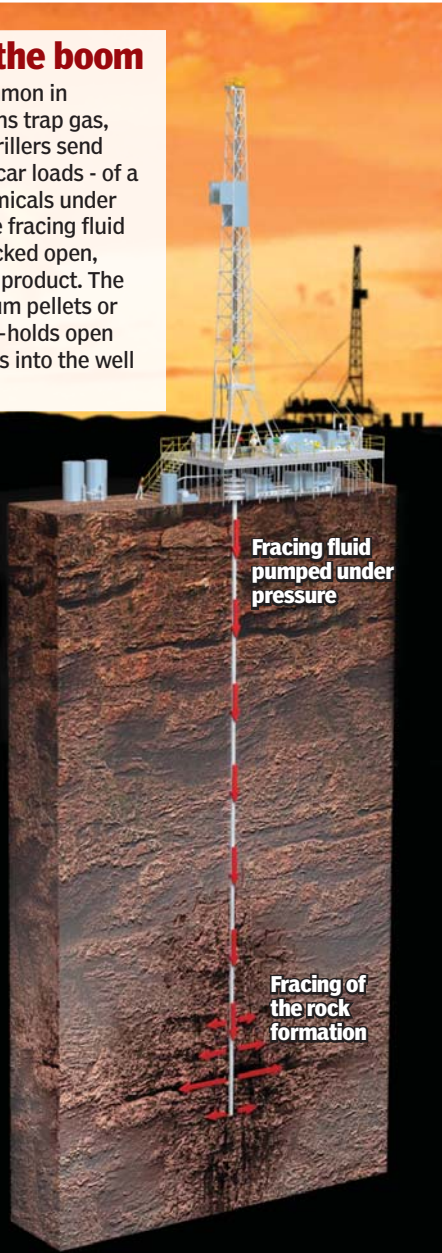
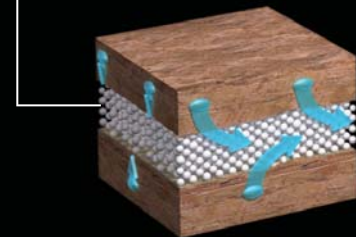
1 Embedded gas



2 Fracing fluid containing proppants pumped under great pressure causing fractures to expand



3 Permeable proppants remain to hold fracture open and allow the flow of gas to the well



Seeping threat

In 2004, a poorly drilled gas well near Silt allowed millions of cubic feet of natural gas to escape a formation over 55 days and travel 4,000 feet through fractures in the rock and exit in West Divide Creek. Testing revealed elevated levels of benzene, a cancer-causing chemical, in the creek water. State regulators say such occurrences are extremely rare, but serious. The seep resulted in the largest penalty — \$371,200 — ever levied by the Colorado Oil and Gas Conservation Commission.

How it happened

1. The well was supposed to be surrounded by cement from the bottom to the top. But the cement collapsed falling to a depth of about 4,050 feet.
2. The failure allowed surrounding natural gas to seep into the opening around the well and drift upward, exiting at about 1,550 feet, where it traveled through rock fractures to the creek.

