

New techniques may recover old oil

Time has become a factor in getting more oil out of Texas fields by secondary means.

Primary producing methods left behind 100 billion barrels. Secondary and tertiary recovery offer ways of getting more.

Two things — economics and time — stand in the way, says Dr. Paul B. Crawford of Texas A&M University. Government-controlled oil prices make producing the oil by secondary and tertiary methods cost more than it brings on the market. A Getty Oil spokesman said thermal oil brings less than \$5 a barrel under federally-fixed prices. For comparison, a barrel of foreign oil last fall cost \$14.

But even if price restrictions are eased on domestic oil in the near future, Crawford adds, enhanced recovery faces the other problem.

"If we wait until wells are plugged and abandoned, it's very unlikely that these processes will be initiated on a paying basis," said the assistant director of the Texas Petroleum Research Committee and a Texas A&M petroleum engineering professor.

Crawford has tests in mind for some Texas fields about to be closed in. He has begun studies on adapting fireflooding alternated with steam to enhance recovery. Previously unproductive separately in shallow Texas fields, the techniques have been applied with success in other U.S. localities.

"Fire-flooding pushed oil out of a reservoir like fire in a cigarette pushes out tar," Crawford explained. He believes a combination of fire and steam should enhance recovery in deeper Texas formations.

Once techniques are lab-proven, field tests will require a series of

wells in a field in which production has fallen off.

In the steam-fire alternated method," the engineer said, "steam would be injected first to heat up the rock and oil, thinning the oil. Then a burn would be started and manipulated by varying injected air pressure, pushing the thinned oil to producing wells. Cold water would be injected after the burn, since it would become steam on contact with the heated rock."

An 80 to 85 percent recovery might be expected due to irregularities in the oil-bearing rock. Ten to 15 percent of the in-site oil would be burned in fire-flooding.

"But the combined technique will also encounter what I call the 'baseball diamond' problem," Crawford said, a possible further limit recovery. "Suppose we had injection wells at first, second and third bases and home plate, with the producing well on the pitcher's mound. How do we get the oil out of left field?"

Minimum distances between injection and recovery wells can be tolerated using enhanced recovery techniques.

Enhanced methods costs run high. Besides capital outlay for big air compressors to obtain 1,000 pounds per square inch in deep reservoirs, companies will pay a double

price for injecting steam and fire.

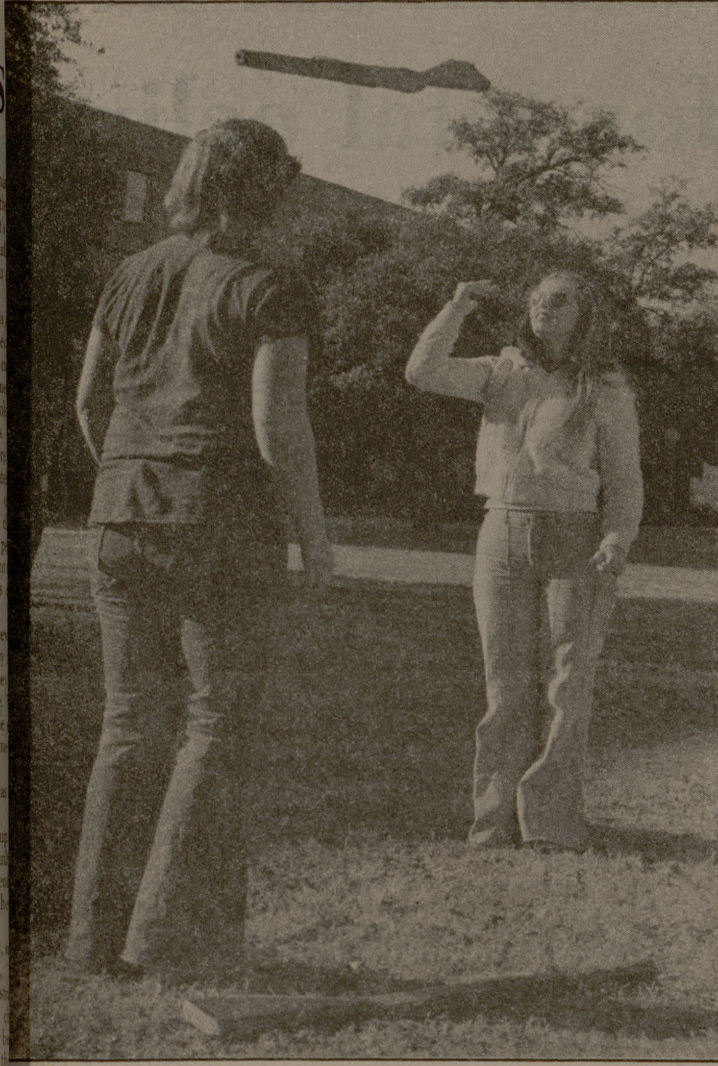
"The price of oil produced by this method should not be less than the price the government allows on imported oil," Crawford commented.

The Oil Producing and Exporting Countries (OPEC) have in the last six months twice boosted prices from \$14 a barrel.

"Federal pricing policy, in effect,

amounts to Congress voting to provide jobs and lower taxes in OPEC countries, instead of providing oil, jobs and lower taxes in the United States," Crawford said.

"Free market pricing is required to produce the energy we need to warm our homes, run our businesses and provide jobs for Americans."



Working before school even begins

Two members of Texas A&M's Women's Drill Team practice for the coming round of competitions. Freshman Sandra Thorpe, right, rehearses a throw of her rifle to her partner. The meet is scheduled this week in San Antonio.

Battalion photo by Lee Roy Leschper, Jr.

Primer met hospitals may get aid

A&M University secret committee can't be held in 1977 and actions relies on

Officials from Texas A&M University and the veterinary profession hailed as a major step toward the construction of an \$11.5 million clinical facility during breaking ceremonies Wednesday.

The 103,000-square-foot structure will require almost three years to build, but will include all new clinical and diagnostic facilities plus, for the first time, capabilities for cloning zoo and exotic animals.

Texas A&M President Jarvis E. Miller said the addition would significantly enhance the reputation of the College of Veterinary Medicine, which he described as one of the best of the total University program.

Miller also said the Legislative Budget Board is prepared, for the time, to recommend to legislators in Austin that a separate appropriation be made to assist the college and small animal hospitals at

Animal clinic begun

of square feet per student of any veterinary program in the United States.

Miller added that the new construction will complement the cooperative human-veterinary medical program at Texas A&M, which already includes the Institute of Comparative Medicine administered jointly with Baylor College of Medicine.

Dean of Veterinary Medicine George C. Shelton described the occasion as a "red letter day" for which the college had been planning for five years.

Shelton noted that Texas A&M, the nation's largest veterinary college, trains about 10 percent of America's practitioners in a facility built for about a fifth the present size.

Figures indicate Texas A&M has been operating on the smallest ratio

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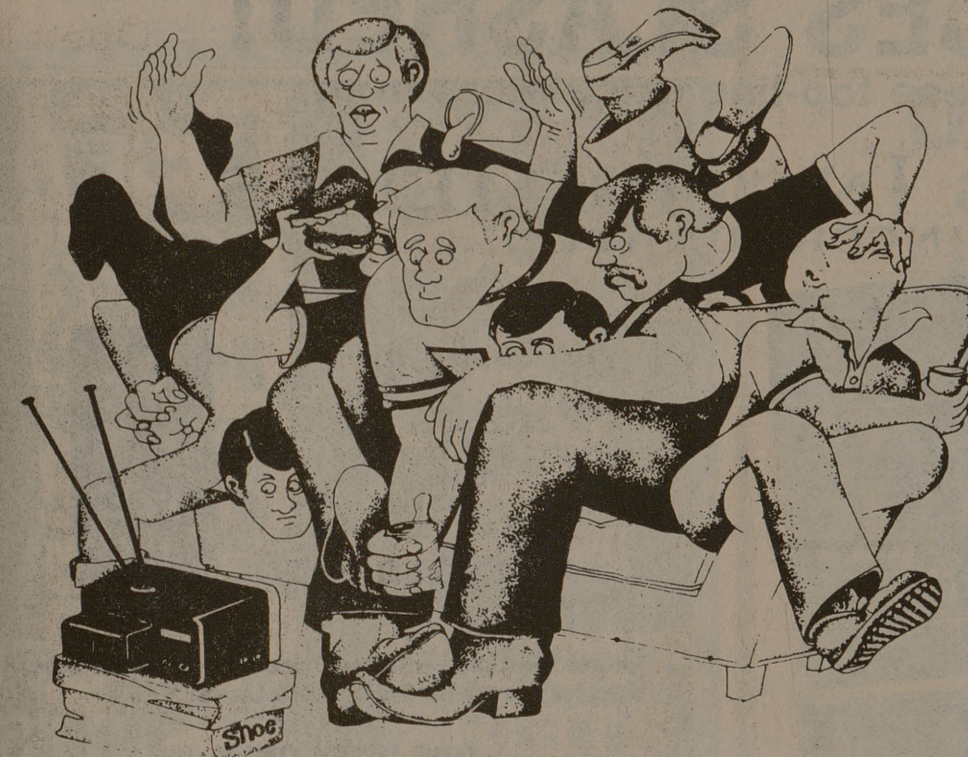


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