

# Bacteria may fight acid rain

United Press International

WOODS HOLE, Mass. — Sulfur-eating ocean bacteria may one day be used to eat hydrogen sulfide, thus partially solving the acid rain problem while serving as food for commercially valuable shellfish.

For the past two years, two Woods Hole Oceanographic Institute microbiologists have grown a population of the tiny creatures that eat hydrogen sulfide and carbon dioxide.

They believe these gases could be fed to large populations of the creatures. The bacteria might then be used to mussels and other shellfish, which could be sold to seafood lovers.

"We envision this as a final stage of gas cleanup that might pay for itself or even make a profit," said Craig Taylor, an associate scientist in

the biology department. "But a lot depends on the economic aspects that haven't been investigated yet. We're still in the stages of basic research."

Taylor works with Holger Janasch, a Woods Hole senior scientist. The pair envisions the bacteria being used in detoxification stations the size of sewage treatment plants. The stations would be located near hydrogen sulfide producing industries, such as fuel refineries and steel plants.

The first stage of gas cleanup would still require large-scale detoxification processes. Hydrogen sulfide gas is so corrosive that even low levels left behind are still environmentally hazardous and produce a smell like rotten eggs. Even these small amounts of gas are still difficult and expensive to remove.

Once the smoke has been run through the first stage it could then be run through the detoxification stations, which would use the bacteria to remove the last of the sulfur.

Hydrogen sulfide is often present in natural gas, petroleum and coal. Fuel refinement usually produces high concentrations of this chemical that must somehow be disposed of.

The hydrogen sulfide when released into the air turns into sulfuric acid, which when mixed with rain falls as one of the primary components of acid rain.

When the acid rain falls on ponds that do not have the ability to buffer the acid, the water's acidity rises and kills the animals that live in the ponds. When the acid rain falls on

forest and croplands it is thought to stunt the growth and even kill many types of plants.

The scientists started their bacteria population by pouring seawater into a specially designed reactor that provides for the growth of surface-attached microorganisms. Then hydrogen sulfide mixed with seawater was pumped through the system and the sulfur-eating bacteria multiplied while other organisms starved.

The laboratory population is housed in a small tank. The scientists hope to start a new experimental population in a larger tank that would be a small-scale version of industrial-sized plants, which would probably contain four 12-foot-diameter cylinders containing rotating disks or honeycombed structures with a large surface area.

# Independents eager about new oil find

United Press International

DALLAS — Some oilpatch veterans are barely able to restrain their enthusiasm for an gas and oil find in the Southeast Ginger Field in Rains County.

"It has all the earmarks of a hellacious oil and gas field," crowed Ran Ricks, head of Ricks Exploration Co. of Oklahoma City.

"It's one of the more prolific fields to be developed in recent years," said Rod Robinson, marketing manager for Deep Gas Exploration Inc., also of Oklahoma City.

Deep Gas and Ricks have been partners in two wells in the field about 60 miles east of Dallas. Their first well, Jenkins 272-A went 12,696 feet and was tested at a rate of 1,555 barrels a day of rich 59.4 degree API gravity condensate and 4.7 million cubic feet of natural gas a day, on a 3/4 inch choke. In the United States, that is a large well by any scale.

"Independent engineers have estimated that that single hole will produce about \$100 million in future revenues," said Robinson.

The second well tested at a daily rate of 1,140 barrels of 58.2 degree condensate and 6.7 million cubic feet of gas through a half inch choke. No independent test has been done on the well.

Kevin Leonard, president of Deep Gas, said the field has 200 feet of play in the Smackover Dolomite formation. Ricks and Deep Gas are planning to drill at least two more wells in the area.

Gates Brelford, a spokesman for Prairie Producing Co. of Houston, said his company discovered the field and has four wells producing in the area now. One of the wells is producing 5.6

million cubic feet of gas per day, plus 1,459 barrels of condensate. Brelford said it is the largest Smackover discovery in since a boom in that that formation 20 or more years ago.

Brelford said the field was part of a larger Smackover formation that curves like a giant boomerang through northeast Texas. The Southeast Ginger Field is in the center of the boomerang, he said.

Gas and oil produced by the Prairie Production wells is piped to a Cities Service processing plant a few miles away while the production from the Deep Gas-Ricks wells is being taken to the nearby Amoco Edgewood Plant. The gas is extremely sour — with a highly toxic mixture of hydrogen sulfide.

"That used to be a problem but right now sulfur is selling at an all-time high," said Ricks. "I've read an estimate that there is only a two-year supply of sulfur in the United States. Now it's selling in excess of \$100 a ton."

Sulfur is a by-product derived from the sour gas.

Leonard cautions that the wells will have to produce for six months to a year before a fairly accurate estimate of their production can be made.

"The estimates may raise them, or may lower them somewhat," Leonard said. "But even if they cut them in half, the field still be very good. Whatever they give it (as an estimate), the final evaluation will be tremendous."

Deep Gas and Ricks have 4,000 acres leased in the field. Ricks thinks the six wells already drilled in the area will produce 10 million barrels of oil.

# Parimutuel horse racing is now legal for first time in Oklahoma

United Press International

SALLISAW, Okla. — Oklahoma's first legal parimutuel horse race will become a reality Thursday with an estimated 10,000 people on hand to watch and place bets, a Ribbon Downs spokesman said Wednesday.

"We expect around 10,000," track spokesman Lance Burchett said. That's smaller than the original crowd anticipated before races were put on hold two weeks.

The Oklahoma Horse Racing Commission examined the track and determined the facility was not ready for races to begin Aug. 16. Last Sunday, the commission gave the go-

*The Oklahoma Horse Racing Commission examined the track and determined the facility was not ready for races to begin Aug. 16.*

ahead to begin parimutuel races Thursday.

"As far as opening day we don't expect we will have as large a crowd as we would have had," Burchett

said. "As far as opening weekend goes, we should average more over the entire weekend."

It's difficult to predict how much money the opening crowd will bet, Burchett said, but a good estimate is usually an average \$100 per person.

"That just all depends on how many people show up and how much they want to bet," he said.

"We would certainly be pleased if we had a handle of \$1 million a day," he said. "I don't think that's an unreasonable amount. That's 10,000 people at \$100 per head."

The first race will get underway at 1:30 p.m. Thursday, following noon

opening ceremonies. Burchett said the program would include six quarter horse races, four thoroughbred races and one paint and one appaloosa race.

Spectators will come from as far away as Dallas, Little Rock, Ark., Oklahoma City and Springfield, Mo., Burchett said. The horses competing will be "from the east coast to the west coast," he said.

The audience will find the track finished, except for the offices, Burchett said.

"Anything the betting public will be concerned with is ready," he said.

## MEMORIAL STUDENT CENTER

**Cafeteria - Snack Bar**  
You get more for your money when you dine on campus.

"Quality First"

**SAVE AT ELEK-TEK**

**TEXAS INSTRUMENTS**

BA-2 ... \$33	TI-55-2 ... \$33
TI-MBA ... 25	TI-57 ... 22
BA-55 ... 43	TI-LCD-PROG ... 50
BA-55 ... 43	TI-66 ... 52

**HEWLETT-PACKARD LCD PROBLEM SOLVERS**

HP-11C Scientific ... \$56	PC 1250A ... \$90
HP-15C Scientific ... 90	CE 125 ... 119
HP-12C Financial ... 90	PC 1550A ... 160
HP-16C Programmer ... 90	CE 150 ... 165

**HP-41C ... \$168**  
**HP-41CX ... 245**

Optical Wand ... \$95  
Card Reader ... 146  
Printer (82143A) ... 283

**HP-II ACCESSORIES**

HP-II Module ... \$95
HP-II Printer/Plotter ... 335
Acoustic Modem ... 395
Dig. Cassette Drive ... 335
Thermal Printer ... 370
D.S./D.D. Disk Drive ... 600

**HP-41CV \$168**

**TOLL FREE ORDER LINE 800-821-1769**  
EXCEPT Illinois, Alaska, Hawaii

**ELEK-TEK, inc.**  
6557 N. Lincoln Ave. Chicago, IL 60645  
(800) 821-1769 (773) 677-1600

# DON'T WASTE YOUR TIME STUDYING.

For the time of your life in college, come to one of our free One Hour Evelyn Wood Seminars. We'll show you the way to have more free time by cutting your study time in half. While you raise your grade point. There's a lot more to college than textbooks, tests, and term papers. And Evelyn Wood is the way to enjoy it. Now's the time to make your move. Bring a friend and join us at our seminar. It's only an hour. It's free. And it's definitely not a waste of time.

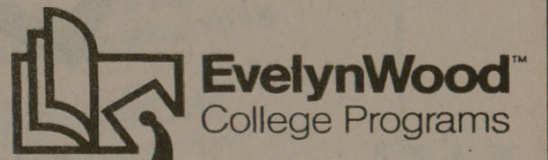
### Free Seminar Schedule

### LOCATION:

AGGIELAND HOTEL 1502 S. TEXAS AVE.

TUESDAY 8/28 12PM, 2PM, AND 4PM

WEDNESDAY 8/29 2PM, 4PM, AND 6PM



Choose the day and time most convenient for you. Reservations not necessary. For more information call 1 (800) 447-READ.

Walk to Campus

**NEWPORT**  
NAGLE 402

NEWPORT offers apartment condominiums for lease this fall. Two and three bedrooms floor plans available. Completely furnished, includes washer and dryer, covered parking, 24-Hr. emergency maintenance and security access. Call today for more details!

402 Nagle  
College Station  
846-8960