

OIL & GAS CONSERVATION COMMISSION
Meeting: January 17, 1968
John Bannister, Executive Sec'y



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

A G E N D A

Meeting

January 17, 1968

Room 202, Arizona State Office Bldg.
1624 W. Adams, Phoenix

*June meeting
comm.
on phy
all wells*

9:30 a.m. Call to order

1. Approval of minutes of meeting of November 15, 1967
2. Executive Secretary's Report
3. Geologist's report
4. Old business
 - a. Temporarily abandoned wells *Ferrin-Potter-Fraser*
 - b. Requested legislation *Harless status*
5. New business *gas well pressure testing*
6. Adjourn *samples*

legislature



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

ROOM 202

1624 WEST ADAMS

Phoenix, Arizona 85007

PHONE: 271-5161

January 15, 1968

Fish, Game & Natural Resources Committee
House of Representatives
Twenty-eighth Legislature
Phoenix, Arizona 85007

Natural Resources Committee
The Senate
Twenty-eighth Legislature
Phoenix, Arizona 85007

There is much confusion within the State of Arizona concerning the licensing of an oil or gas well driller by the Registrar of Contractors. The Attorney General has advised that such licensing is not necessary for the driller on federal or Indian lands, but apparently will apply for the driller on State or private lands.

The language of the contractor's statutes section does not seem to specifically govern an oil or gas driller nor is the registrar of contractors set up to properly qualify an oil and gas driller as to his specific operations. For example, one driller, whom to my knowledge is well established in the industry and has drilled well over a thousand wells in his many years of operations, came to Phoenix from Farmington, New Mexico to take the test to qualify his company. The test consisted of questions on Workmen's Compensation Law, setting up payrolls, profit and loss balance sheets, etc. The driller himself was unable to pass the test; and consequently he had his accountant take it; and of course the accountant did pass the test. However, the accountant has no knowledge of oil and gas drilling as such.

Due to the migratory nature of oil and gas drillers work, most oil states have specifically exempted them from compliance with such registration, New Mexico, Texas, Utah, and Colorado, to name a few.

In Arizona we are faced with a situation that a driller may be on one section of federal land and not have to comply with the registrar of contractor laws; but on an immediately adjoining section of State land he must so comply. As you are aware, the majority of Arizona is federal or Indian land.

To my knowledge, our unusual situation has caused several drillers to refuse to come into the State. As you know, we are dependent for oil and gas drilling upon drillers from out of state. Any action or law which hampers their free access consequently hampers the development of our oil and gas industry.

In order to prevent further discouragement to drilling, and in order to make the application of our laws uniform throughout the State, and in

Page 2

order to bring our State in line with other oil and gas producing states, it is requested that ARS 32-1101, definition of contractor, be amended by adding at the end, the following:

There is specifically excluded from the provisions of Chapter 10, Articles 1, 2, and 3, any person or firm, partnership, or corporation, or association or combination of any of these, whose primary business is and while engaged in the drilling and completion of oil, gas, or helium wells.

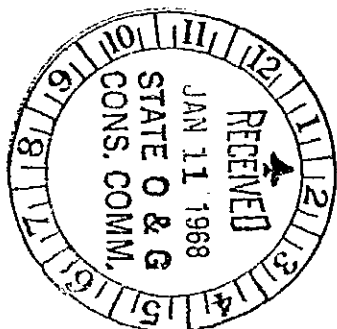
Should you agree that this request has merit, it is requested that the emergency provision be incorporated into the bill.

Your consideration of this request is appreciated.

Respectfully,

John Bannister

John Bannister
Executive Secretary
mr



El Paso Natural Gas Company

El Paso, Texas 79999

January 9, 1968

Mr. John Bannister
Executive Secretary
Arizona Oil and Gas Conservation Commission
Suite 202, 1624 West Adams
Phoenix, Arizona

Re: Testing of Gas Wells,
State of Arizona

Dear John:

This will confirm our conversation of sometime ago in which it was recommended that the Interstate Oil Compact Commission "Manual for Back-Pressure Testing of Gas Wells" be adopted as the standard for the State of Arizona.

It is recognized that all of the tests and procedures outlined in this publication are not required and may not be suitable for present operations in Arizona; however, a rule could be adopted which would provide that such tests as are required or that may be taken at the operator's option and filed with the State should be tested in accordance with the procedures as outlined in the IOCC manual.

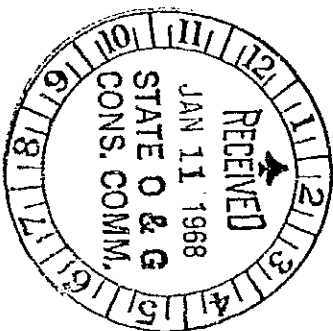
You will recall that we discussed the fact that the IOCC manual and the tables used therein are based upon a pressure base of 14.65 psia and that since the standard pressure base in the State of Arizona was 15.025 psia, certain of these tables would have to be amended. These amendments were made by computer when the State of New Mexico adopted the IOCC manual and can readily be duplicated. The IOCC manual is the composite work of some fifty experts in various fields of gas well technology and at the present time represents the most up-to-date thinking and most recent technological knowledge available.

If there is any further information that you need or any way in which we may be helpful, please don't hesitate to contact me.

Best regards,

D. H. RAINEY
Assistant Manager
Gas Proration Department

DHR:ps



El Paso Natural Gas Company

El Paso, Texas 79999

January 9, 1968

Mr. John Bannister
Executive Secretary
Arizona Oil and Gas Conservation Commission
Suite 202, 1624 West Adams
Phoenix, Arizona

Re: Testing of Gas Wells,
State of Arizona

Dear John:

This will confirm our conversation of sometime ago in which it was recommended that the Interstate Oil Compact Commission "Manual for Back-Pressure Testing of Gas Wells" be adopted as the standard for the State of Arizona.

It is recognized that all of the tests and procedures outlined in this publication are not required and may not be suitable for present operations in Arizona; however, a rule could be adopted which would provide that such tests as are required or that may be taken at the operator's option and filed with the State should be tested in accordance with the procedures as outlined in the IOCC manual.

You will recall that we discussed the fact that the IOCC manual and the tables used therein are based upon a pressure base of 14.65 psia and that since the standard pressure base in the State of Arizona was 15.025 psia, certain of these tables would have to be amended. These amendments were made by computer when the State of New Mexico adopted the IOCC manual and can readily be duplicated. The IOCC manual is the composite work of some fifty experts in various fields of gas well technology and at the present time represents the most up-to-date thinking and most recent technological knowledge available.

If there is any further information that you need or any way in which we may be helpful, please don't hesitate to contact me.

Best regards,

D. H. RAINEY
Assistant Manager
Gas Proration Department

DHR:ps

deposits in the central southeast region—Hatch Canyon and Cove area.

Surveys of last summer, made with the help of Petty Geophysical Engineering Co., uncovered a number of new deposits, among them the Rim Rock deposit near the long-known Asphalt Ridge along the Colorado border.

"The Rim Rock deposit occurs beneath very shallow cover and may be easily strip-mined," Ritzma said. "It is within sight of U.S. Highway 40 and the giant Red Wash oil field. The astonishing fact that it has apparently not been mapped should be ample proof that field work still has an important function in our (geological) profession."

"It is apparent that our study of the deposits has just begun."

Heavy oil deposits in Missouri also are awaiting development.

Geologist Jack S. Wells of the Missouri Geological Survey reported that comprehensive studies are now being made to determine the extent of the reserves in the western sector of the state and how much of it can be recovered commercially.

Only one recovery project, in Belton County south of Kansas City, is now in progress. Other projects

Louisiana's McKeithen named new IOCC chief

LOUISIANA Gov. John J. McKeithen was elected 1968 chairman of the Interstate Oil Compact Commission at the close of the winter meeting in New Orleans attended by more than 700 people.

First vice-chairman is George R. Lane of the Illinois Department of Mines, and second vice-chairman is Richard R. McConnell, independent of Columbus, Ohio.

The Compact reaffirmed its previous stand in favor of strict limitations on imports of crude oil and natural gas, and for regulation of gas production and gathering by the states, stressing that state conservation controls were responsible for the nation having sufficient reserve producing capacity to fill emergency needs during the recent Middle East crisis.

And it voted to cooperate with the attorney general of the U.S., and with appropriate committees of Congress, in a further study of its activities which is to be made during the next 2 years under the terms of a recent act of Congress extending the IOCC.

have been abandoned.

"Development of these tar sands depends on the willingness of government and industry to work together to improve the geology and the production economics," Wells said.

Bureau of Mines. Representatives of the Bureau of Mines reported to the committee that its recent study of heavy crude oil in the U.S. shows

22 states with sizable deposits of 25° crude and less.

The bureau estimates that the deposits total 106.8 billion bbl, of which 45.9 billion are in reservoirs favorable for thermal recovery.

"The large volume of heavy-oil resources contained in known reservoirs offers a challenge to an industry concerned with conservation, increasing finding costs, and a rising demand for crude oil," they said.

Justice memo on Compact slammed

THE OIL INDUSTRY has no intention of committing suicide.

And it is doing its dead-level best to cut its costs and achieve maximum efficiency, the IOCC was assured by John M. Houchin, chairman of the executive committee of Phillips Petroleum Co., Bartlesville.

Houchin defended the industry against the attack made on it in an unsigned staff memorandum attached to the U.S. attorney general's routine report on the Compact.

The report itself found no fault with the IOCC and recommended its continuance. But, said Houchin, the staff used this as an excuse to rehash a lot of old charges against integrated oil companies.

These charges are made by innuendo rather than directly, he said, and are based on hearsay, misleading criticisms, and unwarranted misstatements.

Houchin refuted some of these allegations:

Price fixing—ALLEGATION: Majors use the IOCC as a tool for keeping crude prices high.

ANSWER: They have done a very poor job of this, for the price of crude has declined during the past decade, and gasoline prices to the consumer have risen much less than the prices of all consumer purchases.

Producing profits—ALLEGATION: Majors shift their income to the production level and willfully pay high prices for crude to get undue advantage of the depletion allowance.

ANSWER: All departments of an integrated company compete to show profits in their operations. There is no effort or intent to increase the wellhead price of crude, and it would be foolish to try. Phil-

lips produces less than half the crude it refines and raises the price on what it purchases only when it cannot obtain enough otherwise. The depletion tax savings from its own production do not nearly offset the cost of the higher price for purchased crude.

Depletion allowance—ALLEGATION: Integrated companies retain an excessive portion of the proceeds from the depletion provision as profit instead of using it for exploration as the law intended.

ANSWER: All active companies desiring to maintain their reserves annually spend far more in exploration than their tax saving under the depletion provision. But the depletion allowance is necessary to enable them to do this.

Crude trading—ALLEGATION: Crude-oil trading or barter among refiners is a device for fixing prices

and eliminating competition.

ANSWER: It is not a barter system. Crude is bought and sold in arm's-length transactions on the open market. It is not traded barrel for barrel, but prices are based on type and location of crude, and money changes hands. The system enables buyers to fill their specific needs and sellers to dispose of crude they cannot use to advantage.

Regulation avoided—ALLEGATION: Majors pull out of states with strict conservation controls and go to areas with little regulation.

ANSWER: Completely unfounded. Majors operate where oil is or where they hope to find it. And majors take the lead in promoting state conservation controls.

Connally Act—ALLEGATION: The Connally "hot oil" Act gives

federal consent to state regulation of production, and if it were repealed the whole IOCC and state proration systems would fall.

ANSWER: Courts have repeatedly stated that states have police power to regulate oil and gas production under our Constitution. Connally Act is a minor aid to enforcement and has no bearing on state powers to write laws and rule

Louisiana seeks bigger slice offshore

LOUISIANA LAST week took full advantage of its host role at the Interstate Oil Compact Commission to promote its cause for a better break in sharing in the profits from Offshore Louisiana production.

State Atty. Gen. Jack P. F. Gremillion sounded the keynote when he called for a more liberal interpretation of the location of the Louisiana coastline, from which the 3-mile line designating the state's boundary would be drawn.

Litigation, Gremillion said, has been going on for 20 years in the tidelands dispute—"and it could go on for another 20 years. We haven't thrown in the sponge by a long shot."

But this dispute, he added, could be quickly resolved if Congress will pass a proposed law giving coastal states 37.5% of the revenue from offshore minerals and dividing the remainder among the 50 states according to population.

"I'll buy that," he said flatly.

Louisiana's Gov. John J. McKeithen told the Compact the state is entitled to more of the offshore revenue because of the large number of services Louisiana provides for the offshore industry.

"We can't even collect sales tax on equipment purchased for use in Zones 2, 3, and 4," he said.

He pointed out that Louisiana has done a commendable job in administering the offshore development in federal waters but has not shared in the revenue from it.

Menefee to continue. Echoing of these sentiments, Conservation Commissioner J. M. Menefee indicated he expects to continue regulating offshore production, despite

earlier announcements by the Interior that it expected to take over the job of setting allowables.

"The subject appears to be dormant," Menefee said during the IOCC meeting.

The importance of Louisiana's role as a producer of oil and gas for the U.S.—and the nation's dependence on offshore reserves for future use—was described by Shell Oil's top offshore expert, John W. Pittman, executive assistant to the regional vice-president in New Orleans.

Pittman said Louisiana offshore "is the only major province in the U.S. that has found more oil than it produced over the past decade and has, to a large extent, borne the

load of adding to reserves for the entire United States."

Without specifically taking sides on the issue, Pittman pointed out that passage of the 37.5% bill in Congress, authored by Louisiana Sen. Russell Long, "should help settle the controversy" over the tidelands and give every state an interest in the future income from the entire federally-owned tidelands to help them pay some of their local government expenses."

The U.S. and Louisiana have placed approximately \$1 billion in escrow to be divided between the two when the tidelands dispute is settled. Most of the money is expected to go to the U.S. when the 3-mile line is finally drawn.

Demand study by IOCC urged

THE INTERSTATE Oil Compact Commission was challenged last week to make its own study of future oil and gas demand as a guide to a federal commission studying the use of federal lands for mineral development.

Rep. Wayne N. Aspinall of Colorado, chairman of the Public Land Law Review Commission, said the IOCC should come up with its own independent figures showing what the demand will be "and how you think it can be met in the year 1980 and the year 2000."

He cautioned the Compact to take into account "the mix" of various energy fuels that will supply future U.S. requirements and "why you believe that mix will prevail."

The study, if made, would supplement one being prepared for Aspinall's commission by Robert R. Nathan Associates. The Nathan report is due sometime in March of 1968.

He assured the Compact that the study, if completed at the same time, will be given equal attention in guiding the commission in determining the "various demands on public lands."

Aspinall said the commission has been urged to recommend preference for Outer Continental Shelf leases but that it must consider the interrelationships between offshore and dry-land areas.

"Presumably those who would limit oil and gas production on the

sheep would also seek to limit production from other new sources such as oil shale," said the Coloradoan, whose state has huge oil-shale deposits.

"Still, we must face up to the relationship between oil shale and other energy sources in shaping a policy for this tremendous asset."

He said the commission's study of the Outer Continental Shelf, one of 10 in progress, will provide "the most thorough compilation ever undertaken of the laws, rules, and regulations governing development of the shelf, as well as a review of the effect of the existing policy."

The commission has a deadline of June 30, 1970, to submit its report.

Platinum prices raised \$11-\$13/t oz

CATALYST USERS are studying new price hikes for platinum by one of the country's biggest suppliers, Engelhard Mineral & Chemicals Corp.

Company boosted price from range of \$109 to \$112 up to range of \$120 to \$125/troy oz last week. There are 14.6 troy oz in a pound.

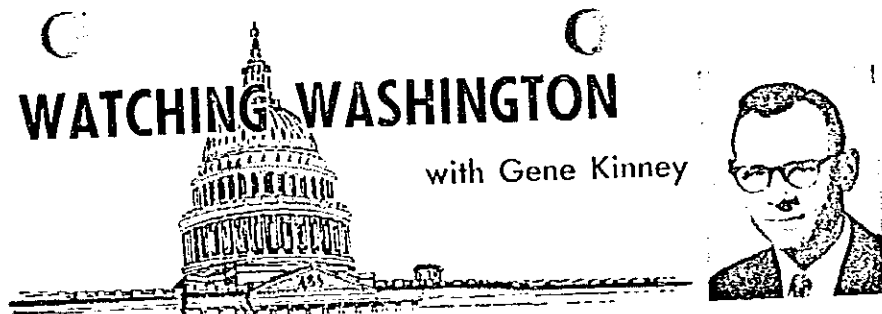
The major suppliers have their customers on allocation and some processors have to go to the open market for part of their needs. Platinum on the volatile and changeable futures market is going for over \$200/troy oz.

Last spring the going rate was \$100/oz, but a big jump came in May—the day after the API released its study of the possible effects of a ban on lead in gasoline. One conclusion reached was that it would take about 3.4 million troy oz more platinum to make lead-free motor gasoline. This is equivalent to the amount of platinum refiners bought during the last 7 years.

Insiders describe platinum as "tight but not scarce." If the Russians started unloading some of their supplies of this metal in the world market, prices would fall. But the Soviets apparently haven't been selling enough to quench demand the past couple of years. It's believed they are using their platinum for gasoline-reforming catalysts and catalysts to make nitric acid for fertilizers.

WATCHING WASHINGTON

with Gene Kinney



Producers try for small victories in area-rate battle

ARGUMENTS in the first area-rate case to hit the Supreme Court mark two milestones in gas-producer regulation.

The most obvious is that at long last, 13 years after the court first told the Federal Power Commission to control producers' interstate sales, a final decision on the method is only months away. The court took the Permian basin case under advisement Dec. 7. It will probably act on it by next June.

The second milestone is the change in attitude of producers toward regulation by FPC. A few—Superior, Sun, Hunt—continued to fight the good fight. But most gave up their opposition—tactically, if not in their hearts—to the area method of regulation as such and to some use of costs in the process.

FPC's PERMIAN opinion, creating ceiling prices for interstate sales from fields in the West Texas-New Mexico area, may well have many of the defects cited by producers. But, if the court signaled anything in arguments, it was that justices were interested only in small questions—not the basic method or the rates themselves.

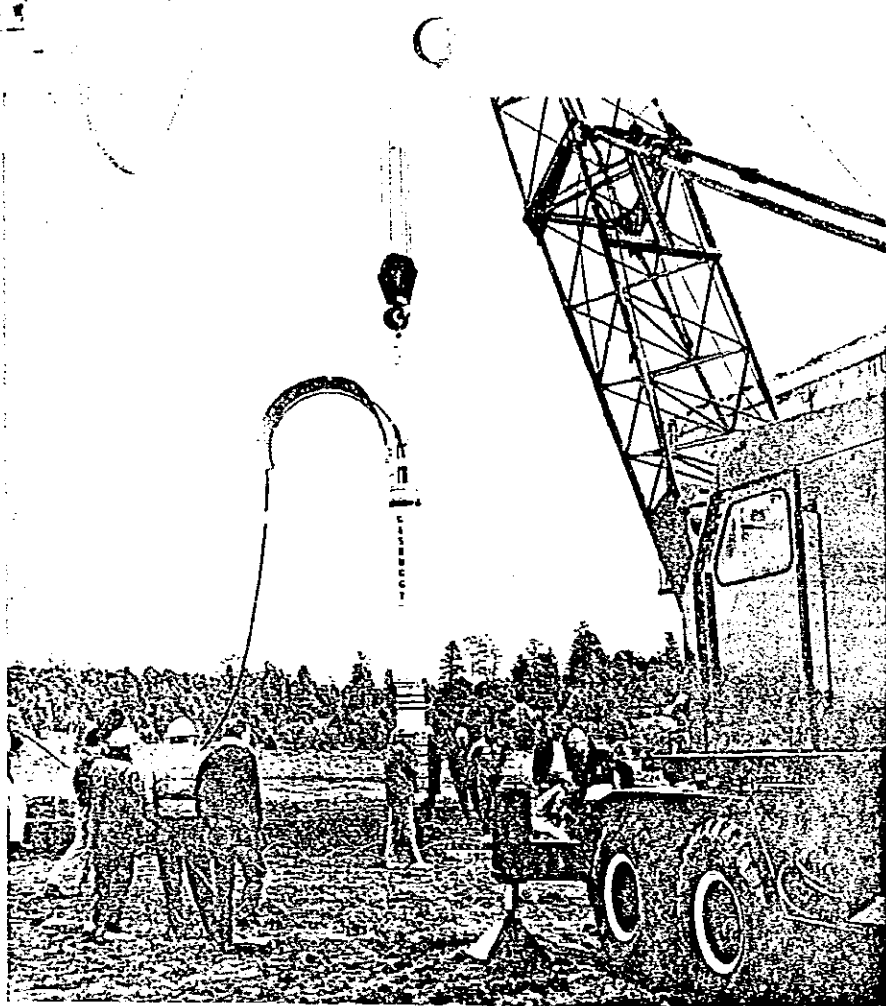
Hence, the court is not about to undo years of work going into the Permian case. Neither is it about to be party to further delay in setting the very first just and reasonable rates for producers in 13 years of fumbling efforts. The court can very easily hold that the rates set by FPC may not be the right ones, then say the way to find out is to give them a try.

FPC's flamboyant general counsel, Richard A. Solomon, argued with the supreme confidence that comes from an unbroken string of victories in that arena. He made his points with the cheerful abandon of an advocate whose case will be decided by a brother-in-law.

PRODUCERS, on the other hand, were an embattled crew. Some of the lawyers proved the equal of their clients' positions; others rose above them. The Amerada group of 30 majors made one notable achievement with a simple, perhaps brilliant, ploy. When Carroll L. Gilliam, at the start of a virtuoso performance, asked the jurists only to uphold the ruling of the appeals court, he instantly grabbed the lagging attention of the bench which was weary of economic arguments it never quite got hold of.

The position was based on a decision to seek what was deemed possible—a remand to get FPC to match producer revenue requirements with revenues, rather than what the group felt philosophically. The odds are against even this limited upset of the opinion, but it could well provide the basis for something significant in the future.

The court showed little concern for the conservation problems of producing states. The attorney general of New Mexico had only the slimmest of chances in this, even before he denounced California's conservation record as the worst in the country—with the former governor of that state sitting as chief justice.



GASBUGGY HYDROGEN DEVICE shown here was run on 7-inch OD casing and cemented in emplacement hole at 4,240 feet. The cannister was equipped to protect the bomb and electrical accessories from water accumulations and downhole temperature. Resulting explosion was equivalent to 26,000 tons of TNT.

AEC finally shoots H-bomb in gas sand

Additional wells will be drilled into rubble-filled cavity to evaluate results of stimulation with nuclear explosive

PHASE II of PROJECT GASBUGGY, the often delayed research effort to stimulate a low permeability natural gas reservoir with nuclear explosives, was finally climaxed at noon last December 10. At that time, the Atomic Energy Commission detonated a 26 kiloton hydrogen bomb at a depth of 4,240 feet in a San Juan basin, New Mexico, well. A succession of problems caused by leaks in the primary casing string, electrical cable trouble and increasing temperature in the

bomb cannister had caused several postponements of the shot.

The explosion, equivalent to 26,000 tons of TNT, created a large rubble-filled cavity or chimney in the gas-bearing Pictured Cliffs formation and extensively fractured the surrounding sand. A slight ground tremor was the only evidence of the blast at the official observer site located some five miles from ground zero. After gathering all data from surface instruments and subsurface instruments installed in four surrounding wells, a rig was

moved onto the emplacement hole to clean it out and obtain samples of gas in the cavity. These gas samples will be tested to determine extent of radioactive contamination.

Depending on these measurements and following a suitable "cooling" period for radioactive components to decay, additional holes will be drilled into the chimney and production tests of the stimulated section will be conducted. It is anticipated that at least eight months will pass before a directional well can tap gas in the chimney for production tests.

Nuclear operation. The Gasbuggy emplacement hole was cased with special 20-inch pipe and cemented to surface in stages. Lower portion of the string consisted of special "ribbed," very heavy wall casing. During the cementing operation, lighter weight pipe uphole parted about 250 feet from surface. Although repair was made, continuing leakage in the damaged area caused additional delay of the shot.

The hydrogen device was run flanged to the bottom of a 7-inch casing string. The bomb was housed in a special 17½-inch OD x 16-foot long environmental control cannister weighing some 2,000 pounds. The cannister was necessary to protect the explosive device since the latter is both water and temperature sensitive. Apparently, the cannister developed a leak or malfunctioned in another way since interior temperature began to rise slowly but steadily several days prior to the shot.

Taped electrical control cables were run to surface strapped to the 7-inch pipe. The string was centralized to prevent any damage to cables during running.

The first 400 feet of 7-inch casing was slotted to facilitate cementing with special grouts. Cement was spotted through tubing and the pipe was filled with grout up to a depth of 3,000 feet. Sand, used to fill the pipe from 3,000 feet up to 50 feet, was topped with a special sealing compound to insure against any leakage from the blast.

The bomb was detonated in the Lewis Shale formation about 40 feet below the bottom of the Pictured Cliffs. Energy of the explosion melted, vaporized and crushed surrounding rock and created a spherical cavity estimated to be 160 feet in diameter in about 1/10 of a second. As the cavity cooled and pressure declined, the roof

collapsed and a cylinder of broken rock was formed. Although specific dimensions of this chimney were not available as of this writing, it was expected to be about 350 feet high and 160 feet in diameter.

In addition, the explosion was expected to laterally fracture rock for more than 400 feet on each side of the detonation point. Over-all dimensions of the fracture zone were estimated at 850 feet in diameter. Including the chimney, vertical fractures were expected to extend for 430 feet from top to bottom.

Future wells will confirm extent of the chimney and fracture zone. When completed, these wells will be produced and extensive reservoir studies will be initiated to determine effectiveness of the shot in stimulating gas production.

Gasbuggy is a research experiment in the truest sense. Much additional work and several more shots will probably be required to determine whether nuclear stimulation is worth pursuing.

Stated objectives of Gasbuggy are:

1. Determine any changes in gas producing rate and ultimate recovery caused by the explosion and reasons for these changes

2. Determine extent of radioactive contamination of the gas and ways to get rid of it

3. Develop engineering knowledge in nuclear reservoir stimulation

4. Improve predictive capability for seismic effects on producing wells, equipment and nearby structures.

Project Gasbuggy is a joint experiment by the U.S. Atomic Energy Commission, the Department of the Interior and El Paso Natural Gas Co. The Nevada Operations Office of the AEC and the University of California's Lawrence Radiation Laboratory—under contract to AEC—have been responsible for most work conducted to date. El Paso so far has drilled two pre-shot wells and tested them in cooperation with the U.S. Bureau of Mines and the AEC. El Paso will also provide construction support services and equipment for testing future wells. The Bureau of Mines is responsible for the direction and development of the reservoir evaluation portion of the technical program. ■

Keep carrier bars aligned with HUBER DUAL COMPLETION PUMPING EQUIPMENT

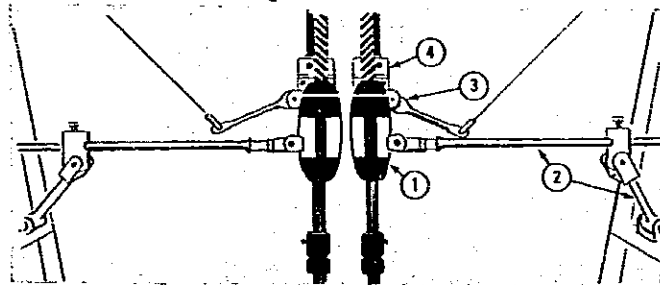


Diagram of dual well setup with (1) Carrier bar; (2) Stabilizer unit; (3) Rod Rotator; (4) No-bolt clamp

You save time and money with dual pumping well equipment from Huber. Here's how:

1. Socket-type carrier bars permit perfect alignment.
2. Stabilizer assembly maintains alignment and prevents bumping of carrier bars.
3. A small compact rotator (T series) and No-Bolt clamp, or No-Bolt, Jr., allows the user to get the benefit of rod rotation.
4. T series rod rotators also make it possible to use Huber scrapers when paraffin accumulation is present in dually pumped wells.

Ask your supply store or write for literature . . . and see our pages in the Composite Catalog.



Petroleum Equipment Department
J. M. HUBER CORPORATION
P.O. Box 831 • Borger, Texas 79007

Rod Rotators • No-Bolt Rod Clamps • Load Indicators
Rotating Scrapers • Polished Rod Lubricators

For medium HERCUL EC CASING H

These compact, highly designed heads are ideal for medium depth wells with work of 1500 psi or less. The pressure of 3000 lbs., w lb. maximum load limit at factor.

Interchangeable internal chart) save you time and bodies furnished with 2"

OD Casing

OD Casing

OD Casing

Designation for EC
OD 8 Rd API male ca
* Internal parts (slips, changeable.
** Internal parts interch

Order from



J.M. H
P. O. Box

Stuffing Boxes • Casing
Clamps and Head Ad



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

January 10, 1968

Memo to: Commissioners
From: John Bannister, Executive Secretary
Re: Report of Activity

The December meeting was not called to order because we did not have a quorum present. As you are well aware, our weather was at its worst at the time of our regular meeting. Mr. Owens and Mr. Bilby were present.

At this time I am delighted to report that Mr. Lynn Lockhart is doing much better.

The extremely cold and snowy weather in the northeast section of the state will very definitely reflect in the production for the months of November and December. Humble found it necessary to suspend both drilling and production operations for some seven days in December.

For a good part of this time the main generator on the Kerr-McGee properties was out, and due to weather conditions Kerr-McGee was unable to get in to quickly repair it.

It later became necessary for Kerr-McGee to shutdown completely the production of the #14, #15, and #16 wells, and this generator was taken to produce the better wells, the #1, #2, #3X, and #4. It was this latter generator that was knowked out by the weather.

Kerr-McGee has advised that this generator has been replace and they anticipate only a temporary disruption of production from now on. With the bad weather still with us I feel that the production for the next few months will be down.

The weather of course is hampering drilling operations and although some new wells have been completed drilling-wise, the testing and completion for production will likewise be slowed down.

As you will recall, during our June 21, 1967 meeting we granted Mr. Harold Ferrin an extension to December 31, 1967 to resume operations on his two wells in Navajo County.

Mr. Ferrin has made no attempt to do any work in the interim and has recently contacted this office requesting a further extension due to bad weather.

The Potter well, south of Flagstaff, is in this same category and no attempt has been made to actually do any work. We have not at this time heard anything from Mr. Potter. Undoubtedly he too is closed down by weather.

It is my feeling that at the February meeting a hearing should be held to consider ordering the plugging of these wells. Inasmuch as no legitimate attempt has been made by either of these operators to commence within any of their granted extension, I cannot be in sympathy with their requests due to bad weather.

According to instructions from Mr. Owens and Mr. Bilby at our unofficial December meeting, I have proceeded with the attempts to secure legislation aimed at tightening the time in which information must be filed with this Commission, as well as attempting to prevent delays in our order processes, such as has been called by Harless. In addition, we are attempting to secure permission to charge for the costs of certain of our services in order to reduce the operating costs.

I have sent copies of this requested legislation to the chairmen of the natural resources committees of both the House and the Senate. I have also contacted Senator Huso and Representative Pritzlaff and both have indicated their support.

In addition, Representative Pritzlaff will introduce our request for supplemental appropriation. It is hoped that you will make such contacts in the Legislature as you are able to secure support for both our requested legislation and our most necessary supplemental budget appropriation. Should you have any suggestions concerning this, please pass it on.

New Permits:

- 444 AAA Fishing Tool Co., to re-enter the old Humble #E2 Navajo, SW NE 9-41N-28E, Apache County
- 445 Kerr-McGee B-1X Navajo, NW NW 5-35N-30E, Apache County
- 446 To replace expired permit to drill Kerr-McGee #10 Navajo, SE NE 30-36N-30E, Apache County
- 447 Humble #4-88 Navajo, SE NW 25-36N-30E, Apache County

Geologist's
Activities Report

Pinta Dome

Dec. 29th, Navajo.

Met with Mr. Otto Barton, Kerr McGee production superintendent, to observe shut-in and producing back-pressure tests of some of the currently producing helium wells. Pressures were measured by dead weight method.

Results of Testing:

This well somewhat isolated by fault.

	Pounds Shut-in Pressure after 3 Hrs.	Pounds Shut-in pressure after 22 Hrs.	Pounds Back press. after 3 Hrs. flow	Pounds back press. after 22 Hrs. flow
Kerr McGee State #1 Unit VI	64.4	64.4	63.4	63.4
Kerr McGee State #2 Unit V	64.3	64.3	55.5	57.7
Kerr McGee State #3A Unit IV	64.4	64.4		
Kerr McGee Fee #1 Unit III	64.4	64.4		
Eastern State #1-2 Unit IX	69.3	69.4	64.5	65.0
Eastern State #1-28 Unit II	64.5	64.5	57.4	57.7

Note: SHUT-IN press. AFTER 22 HRS. shows maximum of 0.1 pound INCREASE OVER 3 HR. SHUT-IN. THIS VERY Fast build-up indicates HIGH PERMEABILITY of FORMATION. (CHARTS show MAXIMUM build-up Within 15-20 MIN. AFTER SHUT-IN.)

#####

- (1) Line pressure on the gathering system is very low, ranging from approx. 39 lbs. to 45 lbs.
- (2) Reserves (volume) in the gathering system is low.
- (3) Frequent change in the pressure of the gathering system due to frequent starting and cut-back in plant take, according as arrival of trucks require step-up in plant take.

The above three facts explain why, from Kerr McGee's point of view, it is impractical to take long shut-in and flowing back pressure tests on these wells. Also, they point to the recent unitization of Pinta Dome and to the dead weight pressure data (above) to show that long periods of shut-in testing and back pressure testing are not necessary. I concur with these conclusions.

Pinta Dome (cont.)

Current production: about 75-80 million cubic feet of raw gas per month. Pressure in the formation is declining at about 1/2 lb. per month. Will plan to produce (about another 4 1/2 yrs.) until field pressure has been reduced to 8-10 lbs; at which time the field will be put on vacuum. Ultimate recovery of Pinta Dome estimated will be 6-9 billion cubic feet of raw gas.

#####

Discovery Well at Pinta Dome blew wild to the atmosphere for 6 months before being capped. Well (estimated) made 60 million cfbpd. Original field pressure est. 240-220 lbs. Thus, about half of the original reserves wasted before the first well was capped. Barton has speculated that this very rapid initial venting of the gas may have caused the tilted water table here.

Dineh bi Keyah

Field expected to produce its 3millionth bbl. during January.
###

Kerr McGee E-1 (SE SE Sec. 20-36N-30E) Now completed as salt water disposal well

Kerr McGee C-2 (SE NW Sec. 33-36N-30E) Completed as a shut-in helium well in the Devonian McCracken sandstone. Tested at the rate of 440 MCFPD on 20/64" choke with FTP of 100 psi

Kerr McGee C-1 (SE SW Sec. 33-36N-30E) Location.

Kerr McGee B-1X (NW NW Sec. 5-35N-30E) TD 3165 ft. Set 7" csg. to total depth. Perforated Hermosa sill from 3062-84 ft. Acidized and fracked. Now swabbing. This looks good.

Kerr McGee #10 Navajo (SE NE Sec. 30-36N-30E) Spud 1-2-68. Set 9 5/8 csg. at 248' and cemented with 300 sx.; now drilling 8 3/4" hole below surface csg.

Kerr McGee #1-F (SE SE Sec. 24-36N-29E) Total depth 4465'. Set 7" O.D. csg. at 4462' with 150 sx; perforated Hermosa sill from 4226-51; acidized & fracked; Now moving out rotary and moving in completion unit.

Humble #1-88 (SE SE Sec. 25-36N-29E) Acidized and fracked; still pumping load oil.

Humble #3-88 (SE NE Sec. 36-36N-29E) Drilled 8 3/4" hole to total depth of 3875. Running csg.

Humble #4-88 (SE NW Sec. 25-36N-29E) Location.

#####

Wildcats

Simmons #1 Navajo (SE SW Sec. 30-36N-27E) Shut Down @ weather.

Will plug. Last few days of pumping well was making about 1/2 bbl fluid (50% oil). Company is considering drilling another well in here to test this same Desert Creek (Pennsylvanian limestone) zone perhaps further to the north where the zone appears to be thicker with better porosity and permeability.

#####

Champlin #1 Navajo 335 (NE SE Sec. 4-41N-29E) Well flowing about 8 bbls of oil per day plus 7 bbls water on 24/64" ch.

Will continue to flow for another few days; plan to take shut-in pressure and then treat with large acid-frack.

#####

AAA Fishing Tool #E2 Humble Navajo (SW NE Sec. 9-41N-28E) Shut down @ weather. Well had been flowing 10-15 BOPD and

making approx. 500,000 cfbpd. Plan to rig piston lift so as to lift the oil with gas.

#####

Arizona Helium Corp. has sold its first offering of 600,000 shares of common stock for \$1.00 per share and now (as of Jan 2) has started selling another issue of 750,000 shares for \$2.00 per share.

The instrument pannel and compressors have arrived from the west coast and are now being installed in the building. Plant will be on stream by about middle of Feb. producing initially from Crest #8 Santa Fe (SE NW Sec. 25-20N-27E) and from Eastern #21 Ancon Santa Fe (SE NW Sec. 31-20N-28E).

Arizona Helium Corp. reports that the helium market remains strong; and they anticipate that they will be able to sell all the helium they can produce to the west coast market through Industrial Cryogenics.

#####

PHONE: 531-2101

Arizona Helium Corp.

1034 WEST AVENUE

ROOM 305

CITY OF ARIZONA

Oil and Gas Commission

OFFICE OF





OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

ROOM 202

1624 WEST ADAMS

Phoenix, Arizona 85007

PHONE: 271-5161

Corrective Legislation Needed

Amend 27-515.B by adding:

4. Collect such fees as determined by the Commission which will cover the costs of such services as, but not limited to, reproduction of records or any portion thereof, publication of technical maps, copies of Rules and Regulations, and any other forms of publications by the commission. The monies so collected shall not be subject to the provisions of 27-523, but shall be deposited by the Commission with the state treasurer to the fund from which the expenditure was originally made.

Amend 27-516.A.2 to read:

Requiring reports showing location of oil and gas wells and requiring filing of logs and drilling records within ten days from the time of completion of the work whereon said report is based.

Amend 27-516.A.15 by adding:

Said report to be submitted by the fifteenth day of the month following.

Amend 27-516.A, by adding:

19. Requiring the filing of such other reports and information as the commission may deem advisable and in the public interest. The filing of such reports and other information required hereunder shall be submitted within ten days of the date of the commission's request or within ten days after the action upon which the information or report is based.

Amend 27-517.A by adding:

The request for hearing shall be accompanied by a fee of \$50.00 which shall be applied toward the fees for the court reporter. The interested persons requesting the hearing shall also be billed by the commission as soon as possible for the cost of publication of the hearing and shall within ten days after receipt of the billing reimburse the commission. The monies so collected shall not be subject to the

provisions of 27-523, but shall be deposited by the commission with the state treasurer to the fund from which the expenditure was originally made.

Amend 27-520.A by adding:

The civil action contemplated in this section must be commenced within twenty days from the effective date of the (article, rule or regulation or) order complained of.