

OIL & GAS CONSERVATION COMMISSION  
Meeting: March 25, 1977  
John R. ...

32x11



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106

PHOENIX, ARIZONA 85020

PHONE: (602) 271-5161

**A G E N D A**

**Meeting**

March 25, 1977

8686 North Central Avenue, Suite 106  
Phoenix, Arizona

10:00 a.m.

Hearing, Case No. 52

Immediately  
following  
Hearing

Call to order

1. ✓ Approval of minutes of meeting of  
November 12, 1976
2. ✓ Report of Executive Secretary
3. ✓ Report of Enforcement Section
4. ✓ Report of Geology Section
5. ✓ Old Business
6. New Business - *Int'l. Transit*
7. Adjourn

IF YOU ARE UNABLE TO ATTEND THIS MEETING, PLEASE NOTIFY  
THIS OFFICE AS SOON AS POSSIBLE.



OFFICE OF

**Oil and Gas Conservation Commission**

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**ACTIVITY REPORT**

March 16, 1977

John Bannister  
Executive Secretary

*JB*

The Commission will meet at 10:00 a.m. on March 25, 1977 at the Commission offices in Phoenix. A hearing will take place at the request of Energy Reserves Group wherein they seek permission to inject water in an existing well. At this time, the permission sought by Energy Reserves Group is favored by the staff.

Governor Castro has appointed Mr. Norman Levitt to fill the position formerly held by Roger Hafford. Mr. Levitt is President of Mayo's Home Furnishings and a Director of the Scottsdale Hilton. This office has contacted Mr. Levitt and I am sure he will become a valuable member of the Commission.

The staff has been heavily involved in various legislative activities recently. The breakdown of the bills with which we have concerned ourselves is as follows:

S.B. 1234, which would reduce the state depletion allowance for oil, natural gas and geothermal energies, failed to pass the Senate Natural Resources Committee.

S.B. 1383, which creates an Arizona Energy Office within the office of the Governor. The Arizona Energy Resources Information System, the Arizona Atomic Energy Commission, the Department of Mineral Resources, the Oil and Gas Conservation Commission and the Solar Energy Research Commission have been placed intact within the new organization, all of which will be under the authority of a director appointed by the Governor. One of the problems concerning this new office is the fact that the various Commissioners are transferred intact to the new organization, with their authority intact as spelled out by law, yet the proposed bill makes them responsible to the director. Other inherent weaknesses in the bill were such that the Senate Natural Resources Committee is holding this

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Executive Secretary  
March 16, 1977

bill for further study. It may possibly be on the agenda for March 22nd.

H.B. 2060, which, in effect, takes the Bureau of Mines and makes it into the Bureau of Geology and Technology, under the University of Arizona, has passed the Natural Resources and Government Operations Committees of the House. Some arguments have been made, however it appears that this bill will pass the House, at least.

H.B. 2061, which charges the Oil and Gas Commission to establish a program for the recycling of used oil, passed the House Natural Resources Committee but is being held in the House Government Operations Committee. It is unlikely that this bill will come out of Government Operations.

H.B. 2257 provides for the leasing of geothermal resources by the State Land Department. A committee met and re-worked the bill, reducing some of the conflicts and making clear other points, and, as re-worked, the bill has now passed the House Natural Resources Committee and will be heard this afternoon by the House Ways and Means Committee. You will be kept advised as to the progress of this bill.

H.B. 2330 creates an Arizona Energy Policy Board. This board is composed of the chief administrative officer of the Arizona Atomic Energy Commission, the Oil and Gas Conservation Commission, the Arizona Corporation Commission, the Department of Transportation, the Arizona Power Authority, the Arizona Water Commission, the Office of Economic Planning and Development, and the State Land Department, plus seven members to be appointed by the Governor. The board is charged to coordinate energy efforts of the State and to develop an energy inventory and an overall state energy plan. This bill has passed the House Natural Resources Committee and is to be heard by the House Appropriations Committee when scheduled.

House Concurrent Resolution 2013 was passed by the House Natural Resources Committee this week. It is a bill which says, in effect, that it is the policy of the Arizona State Legislature to assist in obtaining and maintaining an adequate and continuous supply of energy for the state, to encourage conservation of energy through a more proper use, to encourage the transportation industry to conserve energy, to encourage the development of energy resources and to encourage the citizens to conserve energy.

I anticipate that the current bills which create an energy

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Executive Secretary  
March 16, 1977

agency of some sort will fail and that an interim committee will be appointed to work out some sort of integrated agency, however we will follow each of these bills as they progress through the Legislature.



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**ACTIVITY REPORT**

March 15, 1977

W. E. Allen  
Enforcement Section

A year or so ago it was mentioned in this report that Home Oil Company, a Canadian and Houston based integrated oil company, had taken a large block of acreage in north-western Mohave County. Nothing more has been heard from this company until very recently. We are now informed that Home Oil Company is conducting a seismograph program on this acreage.

Nothing has been heard recently from Pyramid Oil Company on their plans to drill three oil tests in Mohave County. However, a geologist who has an interest in this drilling block tells me that all signals are go for the first of April, providing Pyramid can discharge their environmental obligation by then.

The chief geologist with Wichita Industries was in the office last week. You will recall that Wichita Industries drilled two tests in the Mormon Lake area of Coconino County last fall. This geologist, Craig Gunther, was interested in the wells that had been drilled in southeastern Cochise County. Wichita Industries is leasing in that area.

You are, of course, aware of the public hearing called at the request of Energy Reserves Group to convert their Navajo "O" No. 2 located in the NW/SE/4 Sec. 23, T41N, R30E, from a temporarily abandoned well to a water injection well. Since the completion of their No. 4 well located in the same section, they are producing some 30 to 50 barrels of water per day. After August 1, 1977 (I'm not real sure of this date) the USGS will not allow the produced water to be disposed of in ponds. The injection of the produced water back into the same formation that their

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Enforcement Section  
March 15, 1977

three other wells on this lease are producing from could act as a pressure maintenance system which could result in additional recovery of oil from this lease.

We have just issued permits to Duval Corporation to drill three potash tests in the Navajo Springs area.

Applications to plug and abandon the remaining helium wells in the Pinta Dome unit have been received and approved. This plugging program should start about the first of April.

Inquiries have been made to Eastern Petroleum and Western Helium concerning any plans they have for producing the helium wells that they have in this area. It was suggested to these operators that now would be an ideal time to completely plug out all shut in wells in the area.



OFFICE OF

## Oil and Gas Conservation Commission

STATE OF ARIZONA

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### ACTIVITY REPORT

March 15, 1977

J. N. Conley  
Geology Section

#### PUBLICATIONS

For last month sales to 66 purchasers amounted to \$438.25. Most orders were for our two most recent publications. Sales were made to independent operators, oil companies, and consulting geological/geo-physical firms. The largest orders were from the following purchasers:

Tenneco Oil Co., Tucson  
Gary O. Hall, Denver  
Wichita Industries, Denver  
Mobil Oil, Houston  
Pawnee Petroleum Co., Seminole, Okla.  
Geo. B. & James H. Rice, Operators, Dallas

#### OIL & GAS LEASING ACTIVITY

A few scattered tracts of State lands were leased in Cochise County this past month. No other leasing activity has been reported.

#### ENERGY-RESOURCE & MINERAL EXPLORATION BY INDUSTRY

Oil and gas. We have received no reports of physical, geological, or geophysical exploration strictly for petroleum in the State. However, several companies apparently have some interest in the petroleum potential, based on the sale of publications, visitors, and phone inquiries this past month. Wichita Industries is acquiring all available published geological material of the Cochise County portion of the Pedregosa basin. Two Mobil Oil geologists have been given an assignment to check the petroleum potential of the Paleozoic rocks in the State. A retired Phillips Petroleum geologist is going to attempt to promote some drilling exploration on a 100,000-acre block of leases in northern Mohave County owned by a Denver-based company.

In the northeast part of the State Peppard-Souders & Associates, a petroleum consultant firm with offices in Dallas, Houston, Midland, and Denver, is making a detailed investigation of the remaining petroleum potential of the Paradox basin of Arizona and Utah for an undisclosed group of clients.

We have an unconfirmed report that Ram Oil Company has plans to drill two wildcat tests on the Navajo Indian Reservation.



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Minerals. The U.S. Geological Survey has completed the first phase of a study to assess the mineral resources of Indian lands. Twenty-four reports covering 23.7-million acres have been completed. Reportedly, a review of the available information indicates that the Papago Reservation in Arizona has a high potential for undiscovered porphyry copper deposits. A program of geologic mapping and geophysical surveys is underway.

Coal. In last month's Activity Report I reported that Dresser Industries had conducted a geophysical and core drill exploration program for coal resources within the Navajo-Hopi Joint Use Area in northern Navajo County. At the time I did not know what type of geophysical exploration was being utilized. Since then, I have learned that seismic techniques have been developed that record coherent coal-bed reflections. This is possibly the type of geophysical exploration utilized by Dresser Industries.

Uranium. Exploration for this energy resource continues to be active in northwestern Maricopa County and adjacent counties.

#### EXPLORATION "TOOLS" - ENERGY RESOURCES

Numerous technological improvements within the past few years have greatly advanced the effectiveness of the seismograph in searching for oil and gas accumulations. Similar improvements are being made in the use of other tools and applications to exploratory programs. An investigation by the U.S. Geological Survey of the Harley dome gas field in the Uinta basin of Utah indicated that helium sniffers may be useful as a direct detection device in prospecting for natural gas fields containing helium. This type of exploration might be effective in northeast Arizona, where much of the natural gas produced has comparatively high percentages of helium.

Another survey by the U.S. Geological Survey and a Canadian firm of the concentration of helium in soil gas over a portion of the Denver basin in Colorado produced significant results. The average helium concentration above background around producing wells was significantly higher than that around dry wells, the suggestion being that higher helium concentrations are associated with these petroleum deposits.

#### GEO THERMAL

General. In the last Activity Report I reported a cooperative ERDA, USGS, and State of Arizona investigation of the potential of non-electrical geothermal resources in the State. This investigation was to have been made of a large area in Cochise, Graham, Greenlee, and Gila Counties. The principal objective was to determine favorable areas for on-site drilling exploration. A preceding state-wide investigation is now being considered.

Colorado Plateau province. The Basin and Range province is generally considered to have the best potential for geothermal energy. However, investigations of the San Francisco volcanic field by the USGS indicate that the youngest known rocks, including basalt as young as 910 years and rhyolitic domes and plugs ranging in age from about 230,000 to 50,000 years, occur in the same general region in the eastern part of the field. All but

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one of these younger rhyolitic vents are aligned and on strike with the east-northeast-trending grabenlike interior of San Francisco Mountain formed approximately 200,000 to 400,000 years ago. This alignment coincides with a distinct, narrow magnetic low. The USGS suggests that the zone thus defined may be a particularly promising target for additional geophysical exploration to identify hot or molten rock within the crust.

#### INVESTIGATIVE PROJECTS - GEOLOGY SECTION

Geothermal. This past month we obtained from the Water Resources Division, USGS, Tucson, a list of water wells with temperatures in excess of 31.9°C (89.4°F) in the Basin and Range province. The data we did not have has been incorporated into our files.

A tabulation of all temperature data available from the geophysical logs of wells drilled in the State, plus such data obtained from drill stem and production tests has been compiled. The temperature gradients (degrees Fahrenheit per 100 feet) have been computed. Maps presenting some of the subsurface temperature data are being drafted currently.

Oil and Gas Maps. Considerable progress has been made in the preparation of subsurface structure maps and cross-sections of the Mogollon Slope region in Coconino, Navajo, and Apache Counties.

#### GENERAL

Cores. The Commission has in storage in the old stadium at Arizona State University the cores of 39 holes drilled by Arkla Exploration Co. in defining potash deposits of the Permian Supai Formation in Apache and Navajo Counties. The total footage cored was 8,091 feet.

As we cannot use this storage space indefinitely, I have been attempting to find a home for the cores. Dr. R. J. Hite, geologist, USGS, has expressed an interest in transporting them to Denver.

#### VISITORS

A. M. Horrall  
G. O. Hall  
K. Khunkhun  
R. B. Ralston, geologist  
R. R. Church and D. T. Phillips, geologists, Mobil Oil  
Herman Loeb, Geologist and public relations, Pennzoil  
C. E. Gunter, geologist, Wichita Industries  
L. B. Sneddin  
D. M. Howe, Black Hawk Resources Corp.

#### OIL AND GAS POOLS AND WELLS

Attached to this Activity Report are two tables presenting data pertaining to oil and gas production and wells drilled in Arizona to January 1, 1977.

JNC:os

*gmc*

# Oil and Gas Pools, Arizona

Table shows name of pool, number of completed wells, number of producing wells, and cumulative production of each pool as of December 31, 1976.

Pool	Wells		Cumulative Production Through 12-31-76	
	Total Completions	Producing as of 12-31-76	Oil (barrels)	Natural Gas (thousand cubic feet)
Akah	1	0	6,900	19,800
Bita Peak	1	0	12,500	2,376,700
Black Rock	4	0	1,300	14,700
Dineh-bi-Keyah	21	18	14,392,800	2,121,700
Dry Mesa	3	3	571,800	92,200
E. Boundary Butte	12	4	750,000	9,200,100
N. Toh-Atin	1	0	300	915,300
Teec Nos Pas	3	2	192,100	912,600
Twin Falls Creek	1	0	600	194,300
Unnamed	1	0	6,200	8,100
Unnamed	1	0	760	
Walker Creek	1	0	97,100	
Total	50	27	16,032,360	15,855,500

Table shows production for the month of December, 1976.

Pool	Oil (barrels)	Natural Gas (thousand cubic feet)
Dineh-bi-Keyah	34,683	19,463
Dry Mesa	1,426	438
E. Boundary Butte	711	2,275
Teec Nos Pas	3,345	5,966
Total	40,165	28,142

#### Wells Drilled in Arizona

Table shows wells drilled in the State for oil, natural gas, helium gas, and geothermal resources, and wells drilled for information pertaining to other natural resources, structure, and stratigraphy.

County	Oil		Helium	Geothermal	Information
	Natural Gas				
Apache	220		125		128*
Cochise	38				
Coconino	26				
Gila	2				
Graham	17				2
Greenlee					
Maricopa	20			2	11
Mohave	15				19
Navajo	65				50
Pima	8				17
Pinal	13			1	13
Santa Cruz	2				
Yavapai	26				3
Yuma	13				19
Total	465		125	3	262

\* Most of these wells were drilled to evaluate potash deposits in the Permian Supai Formation in Apache and Navajo Counties.

# MONTHLY FINANCIAL REPORT

RECEIPTS MONTH OF Feb 1977	CLASSIFICATION	RECEIPTS	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
-0-	1	Permits to Drill			2.00 00
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
-0-	TOTAL CURRENT MONTH RECEIPTS			-0-	XXXXXX
	TRANSFERS IN				
XXXXXX	BALANCES BROUGHT FORWARD			476 83	XXXXXX
-0-	TOTALS - MONTH AND YEAR TO DATE			476 83	200 00

CLAIMS PAID MONTH OF Feb 1977	FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
6,633 44	1 Personal Services	75,700 00	54,039 14		21,660 86
927 44	2 Emp. Related Exp.	11,350 00	6,955 48		4,394 52
2,073 73	3 Other Operating Exp.	29,074 60	19,529 32	5,405 18	4,140 10
141 00	4 Prof. & Outside Serv.	2,775 00	1,442 50	459 00	873 50
872 10	5 Travel - State	6,000 00	4,057 30	847 90	1,094 80
	6 Travel - Out of St.	2,000 00	678 40	514 00	807 60
	7 Cap. Outlay - Equip.	300 00			300 00
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
10,646 70	TOTALS	127,199 60	86,702 14	7,226 08	33,271 38

AGENCY Oil & Gas Conservation Comm.

DIVISION \_\_\_\_\_

IDENTIFICATION CODE NO. \_\_\_\_\_

1		2		3		4	
CLAIMS PAID YEAR TO DATE		OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES		CLASSIFICATION	CLAIMS PAID MONTH OF Feb 19 77	
480	00	7111	1	Per Diem: Commission Members	1		
53,539	14	7112	2	Salaries: Employees	2	6,633	44
			3		3		
185	90	7151	4	Industrial Insurance	4		
201	46	7152	5	Unemployment Insurance	5		
2,165	12	7153	6	F.I.C.A.	6	388	03
3,749	30	7155	7	Retirement	7	464	36
533	70	7156	8	Health Insurance	8		
120	00	7159	9	Personnel Comm.	9	75	00
			10		10		
		7215	11	Professional Services: Engineer	11		
1,442	50	7219	12	Professional Services: Other	12	141	00
			13		13		
534	60	7221	14	Travel-State: Mileage	14	13	50
862	50	7222	15	Subsistence	15	136	50
		7223	16	Public Transportation	16		
2,623	65	7224	17	Vehicle Expense	17	720	00
36	53	7225	18	Reg. Fees; Parking; etc.	18	2	10
			19		19		
276	00	7232	20	Travel-Out of State: Subsistence	20		
377	40	7233	21	Public Transportation	21		
		7234	22	Airport Parking	22		
25	00	7235	23	Reg. Fees; Telephone; etc.	23		
			24		24		
14,479	92	7251	25	Occupancy: Office Rent	25	1,608	88
		7261	26	Warehouse Rent	26		
		7263	27	Maintenance & Repairs	27		
203	00	7272	28	Mtn. & Repairs: Furniture & Equipment	28		
1,331	46	7280	29	Office Supplies	29	142	38
		7280.1	30	Orthophoto Quads.	30		
338	35	7300	31	Field Supplies: Film; Am.Strat; P.I.; etc.	31		
351	70	7331	32	Printing: Reports; Large Maps; etc.	32		
48	73	7332	33	Legal Advertisement	33		
81	75	7333	34	Court Reporter	34		
175	70	7334	35	Postage	35		
1,527	11	7335	36	Telephone	36	321	46
		7337	37	Drayage; Express; etc.	37		
		7339	38	Rental, Misc.	38		
79	60	7360	39	Dues & Subscriptions	39		
662	00	7370	40	Insurance Coverage	40		
		7431	41	Capital Outlay: Office Equip.	41		
		7434	42	Spec. Equip. (Geol.)	42		
		7436	43	Automobile	43		
			44		44		
250	00	7913	45	Revolving Fund	45		
			46		46		
			47		47		
			48		48		
			49		49		
			50		50		
			51		51		
			52		52		
			53		53		
			54		54		
			55		55		
86,702	14		TOTAL			10,646	70



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**ACTIVITY REPORT**

February 2, 1977

John Bannister  
Executive Secretary

There will not be a meeting on February 11, 1977. You will be notified when the next meeting will be called.

On January 24, 1977 I appeared before a subcommittee of the House Appropriations Committee on our budget. Again, on Wednesday, January 26th, I appeared before a subcommittee of the Senate Appropriations Committee. Both of these committees pretty much accepted our larger budget, including approval of a new geologist. This position, of course, will replace one of the two geologists we lost this year. Sufficient monies to cover salaries and employee related expenditures were approved at the same time. We will not be allowed an increase in out of state travel or in state travel however, as to state travel, we should have sufficient funds for normal purposes. Out of state travel still contains money enough for only the four IOCC related trips.

Both subcommittees approved money for the Commissioners on a half-time basis, i.e., no more than six meetings per year. In addition, our other operating expenditures category was decreased by approximately \$15,000, this being predicated upon our moving from our present location into the State Capitol Complex.

We have been contacted by Mr. Floyd Williams' office and advised that Rooms 308, 310 and possibly 312 in the Capitol Annex at 1624 West Adams are being reserved for us and our move is to be completed by May 2, 1977. We have inspected these rooms and find that they will accommodate the Commission, though certainly not on the comfortable basis we are now enjoying.

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Executive Secretary  
February 2, 1977

Facilities for the Commission meetings will have to be arranged in one of several meeting rooms which are convenient to our new location.

I do not know at this time how the move will be paid for, that is, from our budget or from the budget of Floyd Williams. However the savings of two months rent on the part of the Commission would be sufficient to cover the cost of the move.

Room 308 is one large, carpeted room. At this time we contemplate setting up the Geology Section, i.e., Jack Conley and OEnone Stacey, with their necessary records, in this area. Room 310 adjoins Room 308 but is not connected, other than through the outside corridor. Room 310 is one long room consisting of three offices in a row, each office being approximately 12' x 14', and a long hall-like room running in front of the three offices. At present, it is contemplated that Bill Allen, Ann vonBlume and I will move into Room 310, partitioning a portion of the elongated area in order to accommodate Mrs. vonBlume. Our files will occupy the remaining office and corridor area.

If the new geologist is allowed to us, he could occupy the third office, though it is felt that Room 312 would perhaps be necessitated. I have been in contact with the housing people and they advise that Room 312 will be kept available, should our need develop.

At such time as we accomplish this move, much of our present furniture will have to be turned over to the Surplus Property Department. Most of the furnishings of our hearing room and the furnishings of at least one geologist's office will be the prime excess items.

Just as soon as this phase of the Commission's operations is firmed up, you will be advised.

Pursuant to our contract with Diversified Investments, notice was given that we would vacate our contract within the stipulated 90 days. Diversified Investments, of course, indicated their desire to keep us in our current location and said they will make contacts with Floyd Williams and others, seeking to keep us here. In their contacts they will make clear this is the action of our "Landlord" and not that of the Commission. It is my feeling that their efforts will not be sufficient.

As of this time, no legislation of particular concern to this



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Executive Secretary  
February 2, 1977

Commission has been introduced, however indications are that some legislation seeking to establish some form of an energy commission will be introduced and heavily pursued. We have suggested that the Legislature again consider the same tax incentive program the Commission sought last year.

In addition, we have suggested a legislative solution to the State's problem of leasing geothermal resources. That is, we have suggested that the Legislature define geothermal resource as a unique resource and provide a specific method for its leasing. This was discussed with State Land Commissioner Bettwy prior to sending a letter to the Natural Resources Committees of the Senate and House, requesting their consideration.

A substantial leasing play is developing in Cochise County. I am sure the reports of both Bill Allen and Jack Conley will cover this fully, so I will just make mention of it at this time.

I have received several requests to discuss the energy situation with local groups and am fulfilling these as rapidly as possible.

I have not been made aware of the selection of a new Commissioner by the Governor. This office was contacted early in the year by the Governor's office, requesting information as to Mr. Hafford. It was my understanding they were merely trying to determine the "type" of person now serving as Commissioner.



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**ACTIVITY REPORT**

February 2, 1977

W. E. Allen  
Enforcement Section

We have just been informed that the Utah Oil, Gas and Mining Commission has issued permits to drill two 3000 foot wells in Sec. 32, T43N, R14W, Washington County. These two tests are located only 500 feet north of the Arizona state line. The name of the operator is unknown to us at this time. We have written the Utah Commission for the identity of the operator.

Activity within the State may be looking up. There is considerable leasing activity in Cochise County. The Sun Oil Company and several of their subsidiaries have recently filed organization reports with this office, and Mountain Fuel is acquiring some of the acreage formerly belonging to Webb Resources.

I have recently talked with a Mr. Charles Martin with Pyramid Oil, a California Corporation. He tells me that they plan to drill in northern Mohave County. Don Russell, the District Engineer for the USGS, confirms this. Pyramid has filed a tentative drilling program with USGS to drill three wells in Mohave County. Two will be located in T41N, R9W and one in T40N, R9W. Mr. Martin estimates the total depth in the 4000 foot range and the wells will be drilled with cable tools. This will be a slow drilling process but the operators surely won't pass up any prospective pay zones using this method.

Kerr-McGee plans to plug out the Pinta Dome helium wells in June of this year. They have experienced some difficulty in getting cooperation from some of their partners to plug out this unit.

We are going to request that Eastern Petroleum plug their remaining wells in the Navajo Springs Unit and Western Helium

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Enforcement Section  
February 2, 1977

plug their one Shinarump well in the same area. This request will be made because of the extremely doubtful economical productive ability of these wells and, also, there will be no market for the gas since Kerr-McGee will dismantle their shut down extraction plant.

I recently made a field trip to all of our producing leases. The timing of this trip wasn't too good - all of our operations, including Williams Energy's Adamana storage project, happened to be in the snow belt.

Energy Reserves Group have completed the drilling of their Navajo "0" No. 4 located in the SW/SE Sec. 23, T41N, R30E, Apache County. This well hasn't been potentialized at this time. The operators have swab tested it and are waiting on a pumping unit prior to running a potential test and placing the well on production.



OFFICE OF

## Oil and Gas Conservation Commission

STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106

PHOENIX, ARIZONA 85020

PHONE: (602) 271-5161

### ACTIVITY REPORT

February 1, 1977

J. N. Conley  
Director, Geology Section

#### PUBLICATIONS

Sales for the past month totaled \$99.25. Purchasers were:

Shell Oil Co., Houston  
Phillips Petroleum Co., Bartlesville  
Kerr-McGee Corp., Oklahoma City  
Peter W. Hummel, Reno  
Robert E. Horton, Bakersfield  
Bob Hoffmann, Santa Ana  
Shenon & Full, Salt Lake City  
Barlow & Hann, Inc., Evergreen, Colo.  
Tipperary Corp, Grand Junction, Colo.  
Kansas & Nebraska Natural Gas Co., Ltd., Lakewood, Colo.

#### OIL AND GAS LEASING ACTIVITY

Cochise County. C. S. McGhee, Denver, has acquired leases on approximately 23,000 acres of state lands near the extreme southeast corner of the county. Most of the leases are in T. 21-22-23 S., R. 31 E.

The GECO 1 State, a dry hole drilled to a depth of 5679 feet in Cambrian rocks, is located in T. 24 S., R. 31 E., sec. 2.

Southwest of the town of Bowie, J. Donald Miller, Oklahoma City, has leased 12,000 acres of state lands. He had previously leased approximately 32,500 acres east and northeast of Bowie (Activity Report of January 4, 1977).

#### ENERGY RESOURCES EXPLORATION BY INDUSTRY - OIL, GAS, URANIUM

We have received no reports of geophysical exploration for petroleum or geothermal energy resources. However, Dresser Industries is conducting a geophysical and "core drill" exploration program for coal resources within the Navajo-Hopi Joint Use area in Navajo County.

In the Date Creek-Bullard Wash area near the common corner of Mohave, Maricopa, and Yavapai Counties, exploration for subsurface occurrences of uranium continues to be very active.

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In T. 11 N., R. 10 W., Yavapai County, a subsidiary of Union Oil Co. of California and partners have drilled 200-plus holes to depths ranging from 100 to 1800 feet to define an ore body. The holes are being drilled on 200-foot centers. It is reported, but not confirmed, that an ore body of 50-plus million pounds has been delineated to date.

Currently, six other companies are exploring for uranium in the same general area. This group includes such companies as Phillips Petroleum, Homestake Mining, Standard Oil of California, and Utah International.

On the basis of sparse fossil evidence, the uranium ore ( $U_3O_8$ ) occurs in a carbonaceous and tuffaceous siltstone of Tertiary Miocene age.

Pending completion of air monitoring and other environmental studies, Union reportedly will seek permission later this year to commence mining operations.

#### POSSIBLE FUTURE UTILIZATION OF COLORADO PLATEAU COAL RESOURCES

A group consisting of Mono Power Co. (Southern California Edison), New Albion Resources Co. (San Diego Gas & Electric), and Resources Co. (Arizona Public Service) has financed a study by Kaiser Engineers directed toward utilization of the vast coal resources of the Kaiparowits coal field in southern Utah. The coal in this field lies unused because of problems inhibiting its development, including isolation from transportation, regulatory restrictions, and opposition to industrial enterprises of large scale. These problems caused abandonment of plans for a 3,000-Mw mine-mouth power station.

The Kaiser report presents a concept to mine the coal for the purpose of producing high-BTU pipeline-quality gas. The production of the gasification project would be 360-million cubic feet per day. This would be the equivalent of more than 20-million barrels of imported oil a year.

California, and perhaps to a lesser degree, Arizona and Nevada would benefit from this new supply of gas.

As mentioned in previous Activity Reports and in my preliminary report on the need for the State to develop a long-range energy-resource evaluation plan, the coal resources of Arizona constitute the greatest known concentration of conventional fuel-energy materials in the state. These coal resources, which occur in the Black Mesa basin, are currently being exploited at one locality by Peabody Coal Co. The electrical energy generated from the produced coal is largely for the use of California utility companies.

Environmental problems were largely responsible for abandonment of industry's plans for a mine-mouth power station to utilize Kaiparowits coal. Similar problems exist for additional development of Black Mesa

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coal. However, utilization of the concept proposed by Kaiser Engineers might be acceptable to the Navajo-Hopi Tribal Council and environmental groups.

#### ENERGY-RESOURCE EXPLORATION - FEDERAL SUPERVISION

As a result of an increase in the FY 1977-78 budget, the U.S. Geological Survey plans to implement more modern management techniques in the supervision of operations on oil and gas and active energy mineral leases on Federal and Indian lands with respect to safety of operations, environmental protection, and royalty accounting.

#### GEOHERMAL ENERGY PROJECTS

John Bannister has been advised by Dr. W. H. Dresher, Arizona Bureau of Mines, that the Bureau, acting as the State Geological Survey, is in the process of developing geothermal energy-related activities with U.S. Energy Research and Development Administration (ERDA) and the U.S. Geological Survey (USGS). The Bureau has been conducting discussions with ERDA on behalf of the State of Arizona and is now anticipating entering into an agreement with ERDA and USGS in which the Bureau will be the focal point for the State in a cooperative project defining the major areas of geothermal potential in Arizona. ERDA will provide the funds for work by Arizona geologists employed by the Bureau, our Commission, the State Land Department, and the geology departments of the three state universities. Dr. Donald E. Livingston, Department of Geosciences, University of Arizona, is coordinating the project on behalf of the Arizona Bureau of Mines.

We have been contacted by Dr. Livingston with respect to our participation in an initial study of southeastern Arizona to determine favorable areas for on-site exploration for geothermal-energy resources.

#### ENERGY POTENTIAL PROJECT - NORTHERN ARIZONA

At the November 1976 Commission meeting, mention was made of a request for funds by GS Laboratories to supplement a USGS grant for an integrated interpretation of geophysical and LANDSAT data in northern Arizona. Approval for submission of a request for a technical assistance grant was obtained at a preapplication conference with state and federal (Four Corners Regional Commission) on January 11, 1977.

A preliminary draft requesting a grant was submitted January 21.

#### GEOLOGY SECTION - GENERAL

Most of our efforts since the last Commission meeting have been directed to miscellaneous "in-basket" matters. Considerable progress was made in the preparation of a series of cross-sections of the subsurface rocks of the Mogollon Slope region.

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VISITORS

Visitors interested in oil-, gas-, and geothermal-energy resources of the State this past month were:

James K. Otton, Branch of Uranium & Thorium Resources, USGS, Denver  
C. N. Clark, Kerr-McGee Corp., Oklahoma City  
W. H. Peirce, Arizona Bureau of Mines, Tucson  
Roy P. Full, Shenon & Full, consulting geologists, Salt Lake City  
Bob Hoffmann, Santa Ana

JNC:os

*MB*  
J.N.C.

AGENCY Oil & Gas Conservation Comm.

DIVISION \_\_\_\_\_

IDENTIFICATION CODE NO. \_\_\_\_\_

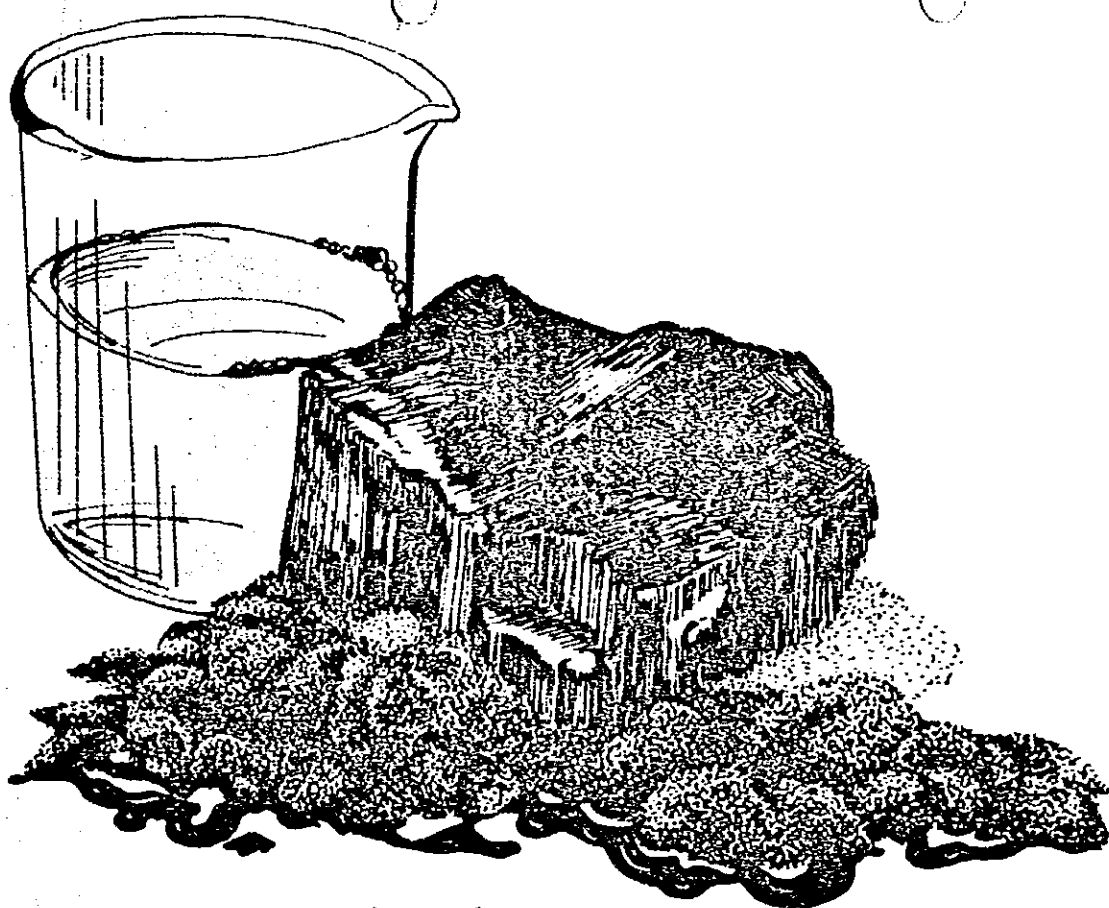
1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF Jan 1977
480 00	7111	1 Per Diem: Commission Members	1
46,925 70	7112	2 Salaries: Employees	2 6,633 44
		3	3
185 90	7151	4 Industrial Insurance	4 112 21
201 40	7152	5 Unemployment Insurance	5 115 95
1,777 04	7153	6 F.I.C.A.	6 388 08
3,284 94	7155	7 Retirement	7 464 36
458 70	7156	8 Health Insurance	8 72 60
120 00	7159	9 Personnel Comm.	9 60 00
		10	10
	7215	11 Professional Services: Engineer	11
1,301 50	7219	12 Professional Services: Other	12
		13	13
521 10	7221	14 Travel-State: Mileage	14 8 70
726 00	7222	15 Subsistence	15
	7223	16 Public Transportation	16
1,903 65	7224	17 Vehicle Expense	17
34 45	7225	18 Reg. Fees; Parking; etc.	18
		19	19
276 00	7232	20 Travel-Out of State: Subsistence	20
377 40	7233	21 Public Transportation	21
	7234	22 Airport Parking	22
25 00	7235	23 Reg. Fees; Telephone; etc.	23
		24	24
12,871 04	7251	25 Occupancy: Office Rent	25 1,608 88
	7261	26 Warehouse Rent	26
	7263	27 Maintenance & Repairs	27
203 00	7272	28 Mtn. & Repairs: Furniture & Equipment	28
1,189 08	7280	29 Office Supplies	29 320 19
	7280.1	30 Orthophoto Quads.	30
338 35	7300	31 Field Supplies: Film; Am.Strat; P.I.; etc.	31
357 70	7331	32 Printing: Reports; Large Maps; etc.	32
48 73	7332	33 Legal Advertisement	33
81 75	7333	34 Court Reporter	34
175 70	7334	35 Postage	35 175 70
1,205 65	7335	36 Telephone	36 127 41
	7337	37 Drayage; Express; etc.	37
	7339	38 Rental, Misc.	38
79 60	7360	39 Dues & Subscriptions	39 30 00
662 00	7370	40 Insurance Coverage	40
	7431	41 Capital Outlay: Office Equip.	41
	7434	42 Spec. Equip. (Geol.)	42
	7436	43 Automobile	43
		44	44
250 00	7913	45 Revolving Fund	45
		46	46
		47	47
		48	48
		49	49
		50	50
		51	51
		52	52
		53	53
		54	54
		55	55
76,055 44		TOTAL	10,120 52



# MONTHLY FINANCIAL REPORT

RECEIPTS MONTH OF	CLASSIFICATION	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
Jan 1977	1 Permits to Drill			200.00
-0-	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
-0-	TOTAL CURRENT MONTH RECEIPTS		-0-	XXXXXX
	TRANSFERS IN			
XXXXXX	BALANCES BROUGHT FORWARD		476.83	XXXXXX
-0-	TOTALS - MONTH AND YEAR TO DATE		476.83	200.00

CLAIMS PAID MONTH OF	FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
Jan 1977	1 Personal Services	75,700.00	47,405.70		28,294.30
6,633.44	2 Emp. Related Exp.	11,350.00	6,028.04		5,321.96
1,216.20	3 Other Operating Exp.	28,727.45	17,456.60	7,210.65	4,060.20
2,262.18	4 Prof. & Outside Serv.	2,725.00	1,301.50		1,423.50
-	5 Travel - State	6,000.00	3,185.20	2,000.00	814.80
8.70	6 Travel - Out of St.	2,000.00	678.40		1,321.60
-	7 Cap. Outlay - Equip.	300.00	-		300.00
	8				
	9				
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	28				
	29				
	30				
10,120.52	TOTALS	126,852.45	76,055.44	9,210.65	41,586.36



DECEMBER 1976  
O & G CONS. COMM.

## an energy policy for arizona: some current issues

Helmut J. Frank

*Dr. Frank is a professor of Economics in the College of Business and Public Administration at the University of Arizona.*

Three years after the energy "crisis" induced by the Arab oil embargo, the United States has achieved little progress toward developing an energy policy adequate to the scope of the problem facing it. Early proclamation of "Project Independence" has not been followed by implementing measures either to foster supply development or to induce conservation. Renewed shortages have been postponed only by a severe recession and three mild winters but are likely to reoccur as the economy expands. On the state level, a Citizens Energy Task Force and a Town Hall Meeting have submitted recommendations to the governor, but there is little indication that significant reforms will be acted upon soon. The following article reviews some major issues which represent obstacles to reaching a consensus on energy policy and suggests possible solutions.

### BASIC ISSUES

A major controversy in energy policy centers around the role of the free market versus that of governmental controls in determining resource allocation in the energy industries. Many economists agree with Professor Milton Friedman of the University of Chicago that a strong dosage of free market medicine is exactly what the economics doctor should order to cure present energy ills. Their argument rests on strong ground: if there is a substitute for the "invisible hand" that comes even close to doing the job of resource allocation as effectively as the free market it has not yet been discovered. More important, for consumers and suppliers to give up their decision making to a computer operated by a powerful agency would entail a significant loss of personal freedom.

On the other hand, economists with only a limited acquaintance with the problems of the energy industries may tend to oversimplify the issue when they imply that the removal of governmental restraints on the energy industries will solve all existing problems to the satisfaction of the American public. For better or for worse, a viable energy policy must take account not only of the economic "facts of life" but of such noneconomic

considerations as international relations and national security, domestic politics and social constraints. Perhaps, to paraphrase a French statesman of World War I memory, energy economics is too important to be left to the economists which does not mean that it can be formulated without them, let alone against their advice. The trick is how to achieve a multiple set of objectives, some of which appear quite irreconcilable at first glance.

In addition to impinging on domestic and international politics, the energy industries depart from the simple models of elementary economics texts in other respects. First, they involve predominantly the production and consumption of exhaustible natural resources—oil, gas, coal and uranium; only hydro and geothermal power among presently available sources are renewable (though others, such as solar energy, are likely to be added in the future).

Second, neither energy users nor suppliers typically can respond quickly to changes in economic signals. Because they have large investments in fixed assets—buildings, cars, appliances, etc.—consumers need time to modify or even replace their stock of energy using equipment. In addition, the search for new deposits, development of new mines, and construction of power plants and transportation facilities cause lead times on the supply side to be unusually long.

Third, quick decontrol of energy prices at the present time would carry particularly unfortunate macroeconomic consequences. The American economy is still struggling, with only partial success, to overcome the twin problems of high unemployment and excessive inflation. Removal of controls, especially on natural gas which is in short supply, would tend to aggravate the latter. This, in turn, may cause monetary authorities to adopt policies which would further stymie economic recovery.

Fourth, there is a widespread impression that decontrol would entail undesirable changes in income distribution. A majority of the public believes that the benefits of higher energy prices would accrue predominantly to powerful corporations and their rich stockholders, while the costs would be borne primarily by low and middle income consumers of "essential" oil, gas and electricity. The evidence on this issue is far from convincing, but the significant thing is that it is widely believed.

Because of the long lead times, assumptions must be made now as to conditions in the

... assumptions must be made now as to conditions in the mid-1980's and beyond ...

mid-1980's and beyond (for the remainder of the century), when policies adopted today will have their full impact. But our best crystal balls are far from clear. Major uncertainties include the size and quality of major domestic energy resources, especially oil and gas; future costs of established domestic energy sources, which have been escalating rapidly; the long-term rate of growth of the American economy, which may differ from that of the past; user responses to higher energy prices, especially in the industrial sector; the rate of technological progress, critical to the economic viability of new energy sources; the state of international relations generally and, particularly, the strength of the international oil cartel.

U.S. vulnerability to events overseas is now greater than during the Arab boycott in 1973-74. Except for the West Coast, which will benefit from completion of the Alaskan oil pipeline next year, it will continue to grow for the foreseeable future.

A degree of protection against the vagaries of world events therefore must be a key element in any national energy policy. To the usual socioeconomic requirements—reasonable efficiency, acceptable equity and balanced environmental protection—there must thus be added adequate supply assurance. All four of these elements must be given appropriate weight in a workable energy policy for the nation. The problem is to translate these broad general criteria into specific operational terms acceptable to the country.

But protection against the continuing dangers of limited supply interruptions can be had short of complete autarchy, which is neither attainable in the short run nor worth the cost, probably several hundred billions of dollars. A far less extravagant alternative consists of a combination of (a) a minimum stockpile of crude oil and petroleum products in storage, accessible to major markets. The volumes should suffice to tide the nation over a

short (say, six-months) supply interruption; (b) reserve crude oil producing capacity, which can be activated before stocks are dangerously depleted, together with the requisite transport facilities. The Naval Reserve on the North Slope of Alaska is well suited for this purpose; (c) maximum diversification of oil import sources consistent with reasonable cost, to hold down dependence on Arab oil producers. Western Hemisphere countries, Indonesia, Nigeria and potential new suppliers (e.g., the North Sea) all may have a role to play; (d) imaginative use of diplomacy and foreign economic policy designed to counterbalance the power of the oil exporting countries and to militate against use of the "oil weapon." The agreement recently concluded among the major oil importing countries to share their oil supplies during an emergency is a good example of such a policy; and (e) standby rationing machinery which could be activated quickly if needed.

Domestically, the contribution of the various energy sources to the total supply stream

... the contribution of the various energy sources to the total supply stream should rely on the price mechanism wherever feasible.

should rely on the price mechanism wherever feasible. Regulation of energy prices by government agencies on non-market criteria involves the introduction of arbitrary value judgments by the regulators; the results are generally inferior to those achieved by free market transactions or cost based regulation. For sectors where reasonably competitive conditions prevail or can be brought about (including all phases of the oil industry plus natural gas production), this means the removal of price controls currently imposed by federal agencies. In the monopolistic sectors (electricity and gas transmission and distribution) rates should reflect costs as closely as practicable--i.e., each user group should be charged the economic cost of servicing it, which varies with time of day and year, distance from sources, generating plant and fuel used, etc.

Under present circumstances, with natural gas in short supply and macroeconomic conditions militating against sudden sharp price increases, a good case can be made for a gradual phasing out, rather than a sudden removal, of existing controls. Specifically, the intent to remove oil price controls in 1979, incorporated in legislation enacted late last year, should be strictly carried out and extended to natural gas production. The crucial need is not so much the immediate restoration of free market prices as the certainty that prices will be allowed to move toward their true long-term level by a date certain. Congress must stay clear of the temptation of halting or reversing the movement of energy prices toward a free market level.

The concept that market prices should govern the contribution of energy supplies bears modification in two important respects. One stems from the adverse impact which energy production, transportation and consumption frequently have on the environment. Failure to take this impact into account would result in prices correctly reflecting costs to the private companies supplying the energy, but would ignore the damages done to society as a whole. Economists generally agree that the best way to correct for this discrepancy is to impose pollution taxes at the point of damage (strip mining, stack gas emissions, automobile exhausts, etc.). The aim is to push environmental protection to the point where the added cleanup cost just equals the value of the damage prevented.

At the same time, it is necessary to recognize the high risk, huge capital requirements

... huge capital requirements and long lead times are needed to develop supplementary and new energy sources.

and long lead times needed to develop supplementary and new energy sources. When these conditions exist, private profit making organizations frequently find involvement on a scale required for success beyond their capacity to finance. Moreover, the necessary incentive is lacking since the rewards, in the absence of exclusive patents, will have to be shared with nonparticipants who can enjoy a "free ride." The reversal of national energy policies has been quite sudden; research and development is called for in a very large number of potentially promising areas. So little is known as to which will eventually succeed

that the widest possible effort by many researchers is indicated. Having reversed its long neglect of such potential sources as solar energy, nuclear fusion, geothermal power, shale oil and synthetic gases and liquids, the danger now appears to be the opposite- that government support will grow too large too fast. Commitments may be made involving financial guarantees or price supports which cannot be justified on objective cost grounds. Great care to keep energy R&D programs within bounds and to retain sufficient flexibility to upgrade, downgrade and eliminate individual programs in light of successes and failures is essential to protect the interests of consumers and taxpayers.

An argument advanced against removing price controls on energy is that it would result in huge "windfall" profits to the oil companies. This would represent an undesirable shift in income distribution away from the lower and middle income groups to the rich. The factual basis of the argument is far from clear; the upper income groups may well spend a higher proportion of their incomes on energy products than those near the lower end. But even if the facts were as claimed, the remedy is faulty. Income distribution unacceptable to the majority should be corrected by appropriate tax measures (including cash grants to the poor) rather than by interference with the price mechanism. And monopoly conditions should be handled by enforcing existing antitrust legislation rather than retaining price controls.

Our discussion thus far has dealt primarily with the supply side of the energy market. Supply, however, is by no means the only element in a balanced energy policy; economists have long held with Alfred Marshall that supply and demand are like the two blades of a pair of scissors both of which are needed to cut. In fact, because the time required to develop new energy supply sources is so long, energy demand-conservation in use- must play a leading role in any workable national energy policy.

Conservation can be achieved in various ways, all of which can contribute to the over-

#### Conservation can be achieved in various ways . . .

all goal. The oil embargo of 1973-74 served to shock the American public into the realization that it could no longer count on an assured availability of low cost energy and that supplies of energy are finite. The sharp energy price increases during the past three years have, of course, reinforced this belief. Knowledge that these increases are continuing and will accelerate, following the politically determined hiatus this year, should induce further efforts toward conservation.

Energy price increases may be augmented by three other types of measures, two of them innocuous, the other highly controversial. The first is better consumer information on such questions as efficiency of cars, household appliances, and insulation of homes and commercial buildings. Second, government can assist in the conservation effort by facilitating the financing of energy saving capital investments and by refraining from raising property values (for tax purposes) when the owner has made energy conserving improvements. The Energy Policy and Conservation Act, passed in late 1975, provides for financial and technical assistance to states which enact conservation programs that reduce energy consumption in 1980 by at least five percent below previously projected levels. Government also can enact mandatory conservation measures-setting minimum efficiency standards for cars and appliances, tightening building codes, penalizing the use of private cars, etc. At present, such a compulsory policy is limited to passenger cars whose average efficiency must be gradually increased to 27.5 miles per gallon by 1985. An extension of mandatory efficiency standards to other areas may meet with public resistance in the absence of more serious energy shortages than exist at present because such standards limit freedom of choice.

#### POLICY GUIDELINES FOR ARIZONA

A comprehensive energy policy statement for Arizona would have to be based on a detailed examination of the state's resources, applicable technologies, political considerations and institutional constraints, among others. Space limitations as well as the writer's

qualifications do not permit such a broad examination. Nor is a detailed discussion of all relevant economic factors possible. Instead, an attempt will be made to lay out some basic policy guidelines, based on sound economic criteria. Specific policy issues will be cited only by way of illustration.

Among the recommendations being advanced are a number that could have extremely serious consequences for the future well-being of the state's residents. For example, it has been suggested that Arizona enact a little "Project Independence," which would presume that autarchy for the state is necessary or desirable.

**Supply Development.** Energy resources of the state, though not insubstantial are largely underdeveloped, are not of the type on which self-sufficiency in this century could rest; oil and gas are likely to continue as the mainstays of the energy supply stream for several decades, and economic methods for coal gasification and liquefaction are still in the developmental stages. Research and development of new sources and technologies are terribly expensive, and should not be financed on the state level. If they were, it might be necessary to force suppliers and their customers to give such high cost sources priority over alternative, more economic ones. Even if this could somehow be done under the federal system, the state's residents would be penalized and its economy injured by noncompetitive energy costs.

More promising alternatives to state autarchy are numerous. Arizona should encourage

**Arizona should encourage the development of those of its resources which have a solid economic basis . . .**

the development of those of its resources which have a solid economic basis, i.e., whose costs can match that of supplies from outside. It should attempt to accelerate the development of the coal reserves on the Navajo and Hopi Reservations, on terms equitable to all parties and in line with sound conservation and environmental practices. It should be a leader in the application of solar energy to heating buildings and water and, in the future, the generation of electricity. It should insist on equal access to new energy sources being developed, especially oil and gas from the Alaskan North Slope. It should retain a role in petroleum product allocation during emergencies, without which Arizonans would run the risk of serious inequities and hardships. And it should enact and implement a well balanced program of energy conservation, for which financial support is available under new federal legislation.

**Environmental Protection.** Advocates of both extremes of possible legislative action related to the environmental impacts of the development of the state's energy resources and the siting of energy facilities have been heard in Arizona. On the one hand, some environmentalists have advocated unreasonably tight restrictions on the grounds that nearly all energy development entails undue risks and that sufficiently vigorous conservation measures can prevent any energy shortages. Extremist components of this point of view would remove all environmental constraints on energy production, transportation and use, including safeguards against nuclear accidents, because, they argue, the need for additional energy is so great that the nation (and the state) cannot afford to put obstacles in their way.

Neither of these positions appears well supported, and each carries a risk of inflicting major damage—the first to economic well-being, the second to the exceptionally attractive environment which Arizonans enjoy. Instead, the state should attempt to formulate a broadly acceptable compromise position which combines energy development and utilization with reasonable environmental protection. Strip mining without restoration efforts, unabated stack gas emissions and uncontrolled water effluents are no longer acceptable to a vast segment of the public. Neither is there evidence that a complete cessation of energy development, which would risk future economic growth, has broad support.

**Electricity Rates.** Despite recent recommendations that rates be used to control consumption, electricity rate structures should not be altered radically without an adequate economic basis. Some groups strongly advocate a reversal of existing decreasing block rates, in the interest of conservation. Some would also charge higher rates to industrial and large commercial users than to residential and small commercial customers. Their ef-

forts appear to have as their objective the accomplishment of forced changes in "lifestyles," which had better develop gradually in response to changes in real costs.

Electricity rates should be thoroughly reviewed, however, and changes made where existing practices cannot be justified by differences in costs. Costs of servicing electricity

#### Costs of servicing electricity customers vary . . .

customers vary with load factors, distribution costs, time of year (seasonal patterns) and time of day. Rates should reflect at least the first three of these adequately. The fourth is more difficult to handle partly because time of day metering is expensive, but a growing number of experiments are being conducted throughout the country to determine the best ways of approaching this question. Arizona utilities and the Arizona Corporation Commission should be urged to actively participate in this effort, if only because the high summer peaks in the state make the problem unusually severe.

**Institutions.** The Arizona Legislature should not enact a comprehensive state energy policy and establish a state energy commission with broad power to regulate all phases of energy supply and consumption. Knowledgeable persons doubt that the expertise to handle such a formidable job exists. At best, such an agency would be bound to make serious, costly mistakes for quite some time. Moreover, any improvement might not be worth the loss of private decision making discretion.

Instead, the state needs to establish a comprehensive energy data base of its resources, supply patterns, transportation and conversion facilities, and end-uses. Steps should be taken to develop further expertise in state agencies and universities in a broad range of energy questions and research directed at better energy decision making should be encouraged. The staff and financial resources of the Arizona Corporation Commission must be strengthened. Finally, various interest groups and the public should be given a voice in energy decisions at early stages of the decision process, but only after they have been given adequate information such as supporting justification for new energy facilities. It is, after all, consumers who will have to bear the cost of these.

The debate on energy policy in Arizona is only now beginning. Conclusions reached and policies enacted will affect the well-being of every resident, the quality of his environment, the evolution of his lifestyle and the rate and pattern of the state's economic growth for years to come. These critical decisions must not be made in a state of semi-ignorance or in the heat of emotions generated by emergencies or narrow partisan issues. Decision makers and the public must have adequate information and knowledge of the repercussions of alternative policies to insure a sound course is followed.



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106

PHOENIX, ARIZONA 85020

PHONE: (602) 271-5161

January 7, 1977

The regular Commission meeting scheduled for January 14, 1977 has been cancelled by Chairman Ralph Bilby.

You will be advised the date of the next meeting.

*John Bannister*

John Bannister  
Executive Secretary





OFFICE OF

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STATE OF ARIZONA

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**ACTIVITY REPORT**

January 5, 1977

John Bannister  
Executive Secretary

Please be reminded that at the last meeting of the Commission it was decided that future Commission meetings would be on the second Friday of the month, consequently the next meeting will be on January 14, 1977 at 10:00 a.m. at the Commission offices. We have been advised that Dr. Ballard cannot be present, so please advise at your earliest convenience should you not be able to attend, inasmuch as Commissioner Hafford has indicated that he, too, will not attend.

We have been in the holiday period following the November meeting and consequently things have been unusually quiet.

Pursuant to instructions, we are enclosing for your consideration and discussions reports which eventually will end up in our long-range plans, pending your approval. We have not attempted at this time to put this information into a "plan" form, but feel that following this next meeting, with your guidance, this can then be accomplished.

As you undoubtedly have noticed, the Bureau of Land Management is holding regional hearings concerning the SOHIO-El Paso proposal to bring Alaskan crude into the Texas area through certain gas lines owned by El Paso Natural Gas Company. These lines, of course, cross the southern part of Arizona. SOHIO has indicated that, should these plans be approved, it will supply crude oil for refining operations in Arizona, should a refinery be built. On January 4th, at the BLM hearing here in Phoenix, Governor Castro indicated his endorsement of the project, as did Corporation Commissioner Ernest Garfield. This Commission has indicated its support of this project, too.

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Today, this office has received several calls concerning construction of a refinery somewhere in the Phoenix area. Some of those calling have indicated their interest in this project as much as a year to a year and a half ago. It is not known how serious any of these proposals are and I am not aware of any refinery proposal that has reached any other than a talking stage.



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**ACTIVITY REPORT**

January 5, 1977

W. E. Allen  
Enforcement Section

The Bureau of Land Management had a public hearing on a Draft Environmental Impact Statement for the proposed crude oil transportation system between Long Beach, California and Midland, Texas in Phoenix on January 4, 1977. I attended this hearing as a representative of the Commission.

The system proposed by Sohio Transportation Company, a subsidiary of Standard Oil of Ohio, would utilize mainly surplus gas line capacity presently owned by El Paso Pipe Line for the transportation of Alaskan crude.

Governor Raul Castro; Ernest Garfield, Chairman of the Arizona Corporation Commission; and Orme Lewis, Jr., a local attorney specializing in conservation matters, made statements supporting the proposed pipeline.

Various environmental groups, of course, opposed the pipeline vehemently. Actually, there was not a great deal of interest displayed at this hearing and it was poorly attended.

Just this morning, I had a telephone conversation with the manager of Plateau, Inc. He tells me that if the Sohio project is approved they plan to build a refinery in Arizona. Plateau, Inc. presently operate several refineries in the Rocky Mountain Region. They are also fairly large transporters of crude oil and crude oil products.

Energy Reserves Group have set 5-1/2" casing on their Navajo "O" No. 4 located in the SW/SW $\frac{1}{4}$  Sec. 23, T41N, R30E.

California Liquid Gas Corporation are drilling their third storage well west of Glendale. They were below 1400 feet at the last report.



OFFICE OF

## Oil and Gas Conservation Commission

STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106

PHOENIX, ARIZONA 85020

PHONE: (602) 271-5161

### ACTIVITY REPORT

January 4, 1977

J. N. Conley  
Director, Geology Section

#### PUBLICATIONS

Sales for the past month amounted to \$181.50. Purchasers were:

G. L. Jarnon, Sierra Vista  
Jerry Chambers, Denver  
Jas. O. Breene, Jr., Denver  
P. J. Farrelly Oil Properties, Denver  
The BO-FEN Corp., Casper  
Kennecot Expl. Inc. Library, Salt Lake City  
Hamilton Bros. Oil Co., Denver  
Placid Oil Co., Dallas  
Paul S. Pustmueller, Denver  
Wm. N. Nickey, Jr., Springfield, Ill.  
Kansas & Nebraska Gas Co., Lakewood, CO

Don E. Lawson, Casper  
Webb Resources, Denver  
Superior Oil Co., Midland  
Geo-Management, Inc., Albuquerque  
Kewanee Oil Co., Tulsa  
Amerada Hess Corp., Tulsa  
Robt. Lavington, Denver  
R. Scott Craig, Denver  
Mountain Fuel Supply Co., Salt Lake City  
Impel Corp., Denver

#### ENERGY EXPLORATION BY INDUSTRY

No geophysical exploration for petroleum or geothermal resources reported.

#### LEASING - PETROLEUM

J. Donald Miller, Oklahoma City, Oklahoma, is acquiring oil and gas leases in the vicinity of Bowie, Cochise County. To date he has reportedly leased approximately 32,500 acres. Most of the leased lands are in T 12 and 13 S, R 28-29-30 E.

#### GEOLOGICAL INVESTIGATIONS - NORTHERN ARIZONA UNIVERSITY

Two Master's Theses pertaining to subsurface studies of Paleozoic rocks in northeastern Arizona will be available in the near future.

#### GEOLOGY SECTION

To comply with the request of Dr. Geoffrey E. H. Ballard, made at the November Commission meeting, two reports pertaining to energy investigations in Arizona were prepared: 1) A preliminary compilation and discussion of petroleum, geothermal, uranium, and coal energy-resource investigations needed for the planning of a long-range evaluation program in the State of Arizona, and 2) State supported energy-related studies.

Activity Report  
January 4, 1977  
Page 2

Considerable progress was achieved this past month in determining subsurface mappable units in the Permian and Pennsylvanian rocks of the Mogollon slope region in east-central Arizona.

JNC:os

  
J.N.C.

# MONTHLY FINANCIAL REPORT

1 RECEIPTS MONTH OF Dec. 1976	2 CLASSIFICATION	3 RECEIPTS	4 APPROPRIATED RECEIPTS	5 UNAPPROPRIATED RECEIPTS	6 TOTAL ALL RECEIPTS YEAR TO DATE
- 0 -	1 Permits to Drill				200 00
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
- 0 -	TOTAL CURRENT MONTH RECEIPTS			- 0 -	XXXXXX
	TRANSFERS IN				
XXXXXX	BALANCES BROUGHT FORWARD			200 00	XXXXXX
- 0 -	TOTALS - MONTH AND YEAR TO DATE			200 00	200 00

6 CLAIMS PAID MONTH OF Dec. 1976	7 EXPENDITURES FUND TITLES	8 TOTAL AMOUNT AVAILABLE YEAR TO DATE	9 CLAIMS PAID YEAR TO DATE	10 OUTSTANDING ENCUMBRANCES	11 UNENCUMBERED BALANCE
6,633 44	1 Personal Services	47,800 00	40,772 26		7,027 74
313 82	2 Emp. Related Exp.	7,200 00	4,498 02		2,701 98
2,427 60	3 Other Operating Exp.	25,912 70	15,194 42	8,469 92	2,248 36
-	4 Prof. & Outside Serv.	1,850 00	1,301 50	334 00	214 50
971 55	5 Travel - State	4,000 00	3,176 50	300 30	523 20
431 58	6 Travel - Out of St.	2,000 00	678 40		1,321 60
-	7 Cap. Outlay - Equip.	300 00	-		300 00
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	28				
	29				
	30				
10,777 91	TOTALS	89,062 70	65,621 10	9,104 22	14,337 38

AGENCY Oil & Gas Conservation Comm.

DIVISION \_\_\_\_\_

IDENTIFICATION CODE NO. \_\_\_\_\_

1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF DEC 19 76
480 00	7111	1 Per Diem: Commission Members	1
40,292 26	7112	2 Salaries: Employees	2 6,633 44
		3	3
70 69	7151	4 Industrial Insurance	4
85 51	7152	5 Unemployment Insurance	5
1,342 42	7153	6 F.I.C.A.	6 46 54
2,588 40	7155	7 Retirement	7 232 18
351 60	7156	8 Health Insurance	8 35 10
60 00	7159	9 Personnel Comm.	9
		10	10
	7215	11 Professional Services: Engineer	11
1,301 50	7219	12 Professional Services: Other	12
		13	13
512 40	7221	14 Travel-State: Mileage	14 23 70
726 00	7222	15 Subsistence	15
	7223	16 Public Transportation	16
1,903 65	7224	17 Vehicle Expense	17 947 85
34 45	7225	18 Reg. Fees; Parking; etc.	18
		19	19
276 00	7232	20 Travel-Out of State: Subsistence	20 196 00
377 40	7233	21 Public Transportation	21 210 50
	7234	22 Airport Parking	22
25 00	7235	23 Reg. Fees; Telephone; etc.	23 25 00
		24	24
11,262 16	7251	25 Occupancy: Office Rent	25 1,608 88
	7261	26 Warehouse Rent	26
	7263	27 Maintenance & Repairs	27
203 00	7272	28 Mtn. & Repairs: Furniture & Equipment	28 80 00
868 89	7280	29 Office Supplies	29 103 99
	7280.1	30 Orthophoto Quads.	30
338 35	7300	31 Field Supplies: Film; Am.Strat; P.I.; etc.	31
351 70	7331	32 Printing: Reports; Large Maps; etc.	32 351 70
48 73	7332	33 Legal Advertisement	33
81 75	7333	34 Court Reporter	34 44 25
	7334	35 Postage	35
1,078 24	7335	36 Telephone	36 238 78
	7337	37 Drayage; Express; etc.	37
	7339	38 Rental, Misc.	38
49 60	7360	39 Dues & Subscriptions	39
662 00	7370	40 Insurance Coverage	40
	7431	41 Capital Outlay: Office Equip.	41
	7434	42 Spec. Equip. (Geol.)	42
	7436	43 Automobile	43
		44	44
250 00	7913	45 Revolving Fund	45
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		53	53
		54	54
		55	55
65,621 10		TOTAL	10,777 91



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106

PHOENIX, ARIZONA 85020

PHONE: (602) 271-5161

December 10, 1976

Memo: Commissioners  
From: John Bannister

Bill Allen and I attended the State and Federal Geothermal Regulations Interface Workshop in Pacific Grove, California in November. As you will recall, it was due to this meeting that the meeting of this Commission was advanced. Our expenses were covered by a grant to the workshop from ERDA.

We were immediately assigned to various working committees to consider and make recommendations concerning specific problems facing geothermal exploration - specifically, problems arising from regulations, etc. I was assigned to the workshop considering problems involved in permitting geothermal wells.

Inasmuch as California is at this time the lead state in producing geothermal energy and enjoys the highest output of electricity generated by geothermal resources in the World, the majority of the comments concerned California and its problems. As an example, if there were no problems involved at all, you would have to go through at least eight different state and local government agencies in California to be cleared for drilling. Should problems arise, this list could eventually encompass up to 82 different agencies.

Much of California's problem is the result of over-organization - refusal of city, county and state agencies to cooperate with other agencies or to consider reduction of their authorities. The majority of the states reported that their permitting procedure is much more simple, and certainly less time consuming, than that of California.

The one theme running throughout all of these meetings, as well as the meetings of the other workshops, was the monetary cost and the loss of time engendered by the environmental impact statement procedure. Many suggestions were made to speed up



Memo: Commissioners  
December 10, 1976  
Page 2

this process, such as having a meeting of all agencies that would be involved in issuing a permit, prior to application for said permit, and have a meeting of the minds on what problems could arise so that an operator could have some of these problems solved prior to submitting his application.

It was also suggested that one impact statement, by one agency, be accepted by all agencies involved, cutting out much duplication.

The problems presented at each of the various workshops, as well as suggested solutions, will be combined into one report and, when published, we will of course have a copy.

As reported earlier, a meeting was held in the Townehouse in Phoenix on November 21 through 23 concerning the potential geothermal resources within the State of Arizona. This meeting was rather well attended and, following on the heels of the ERDA meeting above reported, gave us a real insight into some of the problems faced by Arizona. Our biggest problem, of course, is the unavailability of geothermal leases on both state and federally controlled lands. This, essentially, puts 87%+ of our state unavailable for geothermal exploration at this time.

Senator James Mack presented a talk to this group. He looked at geothermal from the standpoint of the state legislature and his talk was most interesting. I was able to have a discussion with Senator Mack following his talk. He feels the legislature is looking for some way to give incentives, particularly tax incentives, for developing geothermal interest within the state, and I apprised him of our bad leasing problems.

As instructed by the Commission, the staff is making initial efforts concerning preparation of plans for Commission activities, forecasting same for as much as five years in advance. Mr. Allen is researching state agencies wherein there might be conflicts of jurisdiction or duties with those of this Commission. Mr. Conley is preparing for your consideration various short-term and long-term geological prospects of the Commission, and I am preparing a sort of history and activity guideline. Due to the involved nature of this project, it is anticipated that only a rough draft will be presented to the Commission by the staff in January.

Dr. Dale Nations and I attended the IOCC meeting in San Antonio earlier this week. This meeting was extremely well attended for a December meeting. As usual, many excellent papers were given and one had to make a difficult choice between the activities. I am pleased to say that the program of the Environmental

Memo: Commissioners  
December 10, 1976  
Page 3

Protection Committee, of which I am Chairman, was most successful, and I was pleased to receive such comments that we continually have highlight programs. At the meeting we considered the effectiveness of the environmental impact statements being called for now by federal and, in many cases, state governments. Dr. John Craig of El Paso Natural Gas Company spoke to the group concerning his company's preparation of recent and extremely large impact statements, i.e., those covering the company's requests for (1) bringing Alaskan gas down to the oil corridor from Prudhoe Bay, then by ship into the California area, to be put into Texas pipe lines and moved eastward and (2) the impact statement prepared by El Paso Natural Gas in conjunction with Sohio on the project to bring Sohio surplus Alaskan oils into the California area and then eastward through Arizona and New Mexico to the Midland-Odessa area.

Mr. Max Eliason, Vice President of Skyline Oil Company of Salt Lake City spoke on the problems that he, as a small independent, has incurred with impact statements on individual well locations or leases.

Lillian K. Stone from the Department of Interior spoke of federal problems involved in impact statements. She advised that the federal government's concern with environmental protection is a real and lasting one and that whether the states and industry like it or not, it is a fact of life with which we all must live. She suggested that prior to submitting any applications involving federal impact statements a thorough inventory be made on agencies that must be contended with and that a conference be held with each agency to be involved and as many problems worked out beforehand as possible.

Both El Paso Natural Gas and Skyline indicated that they feel that unnecessary cost is incurred and certainly unnecessary time is lost in the environmental process and they made some suggestions as to how these problems can be overcome. A question and answer session followed the presentation by the speakers.

Pursuant to the instructions from the Commissioners, future meetings of the Commission will be held on the second Friday of alternate months rather than the third Friday, consequently the next regular meeting will be on January 14, 1977, at this office.



OFFICE OF

**Oil and Gas Conservation Commission**

STATE OF ARIZONA

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**ACTIVITY REPORT**

December 8, 1976

W. E. Allen  
Enforcement Section

According to recent reports, our neighbor to the northwest, Nevada, has a new oil discovery. This discovery, by Northwest Exploration, is located in what is known as Railroad Valley and is some 51 miles northwest of Ely, Nevada. The well reportedly pumped 417 barrels of 22° gravity of oil with 1.8% BS&W. Maybe Arizona's time for a new discovery will come along in the not too distant future.

As you know, John and I attended a state-federal geothermal workshop in Pacific Grove, California from November 17 through November 19th. This workshop was attended by representatives of state and county regulatory agencies from California, Washington, Oregon, Utah, Idaho and Arizona - federal representatives from all over and several people from industry.

This was a very interesting meeting, with everyone getting the opportunity to air their views. Duplication of efforts and conflicting interests were, of course, the main topics of discussion - state agencies blaming the federal agencies and the federals blaming both state and county bodies - the industry representatives putting some of the blame on most all regulatory agencies, but being especially critical of the federals.

The maze of regulations in force in most states and some of the counties gave John and me many chances to plug the ease of operations in Arizona if the operations are conducted on private lands. State lands would cause no great problem if the Land Department would ever open their trust lands to leasing.

The better part of the past two weeks have been spent in preparing production charts and researching the Arizona Revised Statutes and the BLM and USGS rules and regulations in an effort

Page 2  
Enforcement Section  
December 8, 1976

to determine any conflicts, duplication of efforts, or obstacles between the operations of this Commission and other state and federal agencies.

Energy Reserves Group haven't spudded their well permitted for SW/SE $\frac{1}{4}$  Sec. 23, T41N, R30E, Apache County. This is the location that caused the recent hearing. The company is having to wait on an available rig.

California Liquid Gas Corporation is also awaiting the availability of a rig to drill their third storage well west of Glendale.



OFFICE OF

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December 8, 1976

ACTIVITY REPORT

J. N. Conley  
Director, Geology Section

**PUBLICATIONS**

Sales      October 4 - December 6, inclusive      \$142.75

**Purchasers:**

Oil Development Co. of Texas  
Petroleum Refining Group  
Minerals Exploration Co.  
Poteet International Corp.  
Anaconda Uranium  
St. Joe American Corporation  
Kennecott Exploration, Inc.  
Merchants Petr.  
Exploration Assoc.  
H. R. Thomas  
Mobil Research & Development  
Fred Eiseman  
Suntech, Inc.  
Hansen & Dunn  
EG&G  
Capital Ventures  
T. H. Connelly

Amarillo, Texas  
Washington, D.C.  
Casper, Wyoming  
Farmington, N.M.  
Salt Lake City, Utah  
Tucson, Arizona  
Salt Lake City, Utah  
Denver, Colorado  
Tulsa, Oklahoma  
Yuma, Arizona  
Dallas, Texas  
Scottsdale, Arizona  
Richardson, Texas  
Salt Lake City, Utah  
Idaho Falls, Idaho  
Denver, Colorado  
Denver, Colorado

**NEW PUBLICATIONS.** Received from printer late November

Structure Map, Eastern Mogollon Slope Region, Arizona  
by J. N. Conley and J. R. Scurlock. Geologic Map G-6,  
folded blue-line print and companion well-data tabula-  
tion, \$6.00.

This new open-file map covers most of the Mogollon slope  
region in east-central Arizona, which embraces the area

Activity Report  
December 8, 1976  
Page 2

between Flagstaff on the west and the New Mexico-Arizona state line on the east between the southern part of the Navajo Indian Reservation on the north and the Mogollon Rim on the south. The mapped area embraces the Permian Supai evaporite basin.

The map base shows all wells drilled for oil, natural gas, helium, structural and stratigraphic information, and most of the water wells penetrating the contoured datum.

The structure contour datum is the top of the Permian Coconino Sandstone, or the top of the undifferentiated Coconino-Glorieta and Coconino-DeChelly Sandstones in the easternmost portion of the mapped area. Contour interval 100 feet, map scale 1:250,000 (approximately 4 inches to 1 mile).

Index of Maps Selected for Energy-Resource Investigations in the State of Arizona by J. N. Conley, J. R. Scurlock and O. A. Stacey. Special Publication SP-3, 27 pages including 6 index maps and 3 index map plates, \$3.50.

This new publication was prepared to fulfill a need for a single and up-to-date index of published geologic, gravity, aeromagnetic, structure, measured Paleozoic stratigraphic sections, and oil and gas development maps commonly used by geologists. The oil and gas development maps show also wells drilled for helium, potash, stratigraphic/structural information, and selected geologically significant wells drilled for water. The maps indexed graphically are keyed to tables of bibliographic references.

Announcements of the availability of these new publications have been sent to several trade journals. The December 2, 1976 edition of Petroleum Information, Inc. had the announcement.

#### ENERGY EXPLORATION BY INDUSTRY

No reports of geophysical exploration for petroleum or geothermal resources have been received.

Based on phone and mail requests, and those by visitors, there is a continuing interest in the geothermal energy-productive prospects in the state.

Activity Report  
December 8, 1976  
Page 3

Southern Union Supply Company, Dallas, Texas, apparently has some interest in the oil and gas potential of the Sedona area. This company, for one of its subsidiaries, Gas Company of New Mexico, borrowed eight sets of well samples for a lithologic examination by the Permian Basin Sample Laboratory in Midland, Texas.

Although under no obligation to do so, Southern Union has furnished us copies of the sample descriptions and strip logs, with the stipulation that the information not be released for publication until January, 1978.

#### GEOLOGICAL INVESTIGATIONS BY ACADEMIA GRADUATE STUDENTS

Arizona State University, M.S. degrees. Four theses are nearing completion stage. Two of them pertain to the Mississippian rocks of the Pedregosa basin in southeastern Arizona; diagnostic history and reconstruction of the depositional environments. The other two are studies of the depositional environments of the Devonian Martin and the Permian-Pennsylvanian Formations.

University of Arizona, M.S. and Ph.D. degrees. Several theses and dissertations are in progress pertaining to Paleozoic rocks and southern Arizona tectonics.

Northern Arizona University, M.S. degrees. Several theses pertaining to Devonian and Permian rocks in Colorado Plateau province.

#### VISITORS

Richard L. Jodry, Suntech, Inc., Richardson, Texas. Jodry is in the Research Division of Suntech, a subsidiary of Sun Company. He has been actively engaged recently in a preliminary analysis of the geothermal electrical energy production potential of Arizona.

Edward G. Schempf and K. A. Robertson, Exploration Associates, Consulting Geologists and Geophysicists/Petroleum and Mineral Industries. These gentlemen are investigating the geothermal electrical energy production potential of Arizona and New Mexico.

Two Arizona State University graduate students interested in obtaining information pertaining to boreholes penetrating Permian Supai and Devonian Martin rocks.

*MB*

AGENCY Oil & Gas Conservation Comm.

DIVISION \_\_\_\_\_

IDENTIFICATION CODE NO. \_\_\_\_\_

1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF Nov 1976
480 00	7111	1 Per Diem: Commission Members	1 240 00
33,658 82	7112	2 Salaries: Employees	2 6,633 44
		3	3
70 69	7151	4 Industrial Insurance	4
85 57	7152	5 Unemployment Insurance	5
1,295 88	7153	6 F.I.C.A.	6 93 08
2,356 22	7155	7 Retirement	7 464 36
315 90	7156	8 Health Insurance	8 70 20
60 00	7159	9 Personnel Comm.	9
		10	10
	7215	11 Professional Services: Engineer	11
1,301 50	7219	12 Professional Services: Other	12 440 00
		13	13
488 70	7221	14 Travel-State: Mileage	14 189 60
726 00	7222	15 Subsistence	15 273 00
	7223	16 Public Transportation	16
955 80	7224	17 Vehicle Expense	17
34 45	7225	18 Reg. Fees; Parking; etc.	18 32 50
		19	19
80 00	7232	20 Travel-Out of State: Subsistence	20
166 90	7233	21 Public Transportation	21
	7234	22 Airport Parking	22
	7235	23 Reg. Fees; Telephone; etc.	23
		24	24
9,653 28	7251	25 Occupancy: Office Rent	25 1,608 88
	7261	26 Warehouse Rent	26
	7263	27 Maintenance & Repairs	27
123 00	7272	28 Mtn. & Repairs: Furniture & Equipment	28
764 90	7280	29 Office Supplies	29 355 66
	7280.1	30 Orthophoto Quads.	30
338 35	7300	31 Field Supplies: Film; Am.Strat; P.I.; etc.	31 315 27
	7331	32 Printing: Reports; Large Maps; etc.	32
48 73	7332	33 Legal Advertisement	33
37 50	7333	34 Court Reporter	34
	7334	35 Postage	35
839 46	7335	36 Telephone	36 137 05
	7337	37 Drayage; Express; etc.	37
	7339	38 Rental, Misc.	38
49 60	7360	39 Dues & Subscriptions	39
		40	40
	7431	41 Capital Outlay: Office Equip.	41
	7434	42 Spec. Equip. (Geol.)	42
	7436	43 Automobile	43
		44	44
250 00	7913	45 Revolving Fund	45
		46	46
		47	47
662 00	7370	48 Insurance Coverage	48
		49	49
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		51	51
		52	52
		53	53
		54	54
		55	55
54,843 19		TOTAL	10,853 04



# MONTHLY FINANCIAL REPORT

1 RECEIPTS MONTH OF Nov 1976	2	3 RECEIPTS	4	5
	CLASSIFICATION	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
50 00	1 Permits to Drill			200 00
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
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	17			
50 00	TOTAL CURRENT MONTH RECEIPTS		50 00	XXXXXX
	TRANSFERS IN			
XXXXXX	BALANCES BROUGHT FORWARD		436 83	XXXXXX
50 00	TOTALS - MONTH AND YEAR TO DATE		476 83	200 00

6	7	8	9	10	11
CLAIMS PAID MONTH OF Nov 1976	EXPENDITURES FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
6,873 44	1 Personal Services	47,800 00	34,138 82		13,661 18
627 64	2 Emp. Related Exp.	7,200 00	4,184 20		3,015 80
2,416 86	3 Other Operating Exp.	25,702 45	12,766 82	10,581 63	2,351 00
440 00	4 Prof. & Outside Serv	1,850 00	1,301 50	334 60	214 50
495 10	5 Travel - State	4,000 00	2,204 95	1,424 00	371 05
-	6 Travel - Out of St.	2,000 00	246 90	-	1,753 10
-	7 Cap. Outlay - Equip.	300 00	-	-	300 00
	8				
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10,853 04	TOTALS	88,852 45	54,843 19	12,339 63	21,669 63