

OIL & GAS CONSERVATION COMMISSION
Meeting: December 16, 1977
Mr. John Bannister, Exec. Sec.



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 271-5161

A G E N D A

Meeting
December 16, 1977
1645 West Jefferson, Suite 420
Phoenix, Arizona

10:00 a.m.

Call to order

- 1✓ Approval of minutes of meeting of October 21, 1977
- 2✓ Report of Executive Secretary
- 3✓ Report of Enforcement Section
- 4✓ Report of Geology Section
- 5✓ Old Business
- 6✓ New Business 3RD FRI FEB
7. Adjourn

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

INTRODUCE SAL

OIL AND GAS CONSERVATION COMMISSION
1645 West Jefferson Street
Suite 420
Phoenix, Arizona 85007

Minutes of Meeting
October 21, 1977

Present:

Mr. Ralph W. Bilby, Chairman
Mr. Hal Butler, Vice Chairman
Dr. J. Dale Nations, Member
Mr. Robert A. Gallaher, Member

Absent:

Mr. Norman D. Levitt, Member

The regular Commission meeting of October 21, 1977 was called to order by Chairman Ralph Bilby at 10:00 a.m.

Minutes of the meeting of August 19, 1977 were approved as written.

Reports of Executive Secretary, Enforcement Section and Geology Section were accepted.

Executive Secretary advised of his trip to Anchorage, Alaska in September, 1977, to attend the Executive Committee meeting of the Interstate Oil Compact Commission. A side trip was provided to Prudhoe Bay and the Executive Secretary spoke on his impressions of that area.

Executive Secretary outlined several proposed legislative bills which involve the Oil and Gas Conservation Commission and which are being prepared for introduction at the next session of the Legislature.

After discussion, it was moved and passed that the Executive Secretary be permitted to administratively dissolve the Navajo Springs Shinarump Pool which was established by Commission Order No. 41 resulting from hearing held in Flagstaff, Arizona on July 15, 1970.

Meeting adjourned at 11:45 a.m.

Approved


Ralph W. Bilby, Chairman



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PHONE: (602) 271-5161

ACTIVITY REPORT

December 9, 1977

John Bannister
Executive Secretary

The forthcoming meeting of the Commission will be Friday, December 16, 1977 at our office at 1645 West Jefferson Street, Suite 420. The meeting will begin at 10:00 a.m. I indicated in my report to you last month that we would probably have a hearing on the request of Kerr-McGee Corporation concerning infill drilling in the Dineh-bi-Keyah field. After several telephone calls, Kerr-McGee has not filed an application for a hearing. It is my feeling that due to the rapidly approaching harsh weather in the Dineh-bi-Keyah area, Kerr-McGee has decided to postpone drilling attempts until Spring.

I am pleased to report that the Governor's budget staff has worked with us to increase our budget. This was done in realization that in the current budget upon which we are now operating some monies that should have been allowed to us were not and the budget office staff is attempting to equalize this situation. They are recommending increased expenditures, especially in our state travel. Overall, after filing a new budget request according to instructions from the Governor, the budget office is recommending an additional \$1500 for us. This will certainly be welcomed.

As authorized by you, I attended the Interstate Oil Compact Commission annual meeting held in Santa Fe, New Mexico. I am pleased to report that Dr. Dale Nations also attended, through the courtesy of the Office of Economic Planning and Development. One of the highlights of the meeting, in my opinion, was an address by Governor David Boren of Oklahoma. He addressed his remarks to President Carter's proposed energy program. Governor Boren feels that there are many shortcomings in the program, which fails to offer viable solutions to the shortage of energy, to the problems of the Nation's economy, and unemployment. His program was not negative in that he

Page 2
Executive Secretary
December 9, 1977

offered valuable alternatives to portions of the proposed program. I am attempting to secure a copy of his remarks for distribution to you. I feel that this will make most interesting and constructive reading.

As is the custom, a new Chairman of the IOCC was selected for 1978. The new Chairman is Governor Robert F. Bennett of Kansas. As Chairman of the Environmental Protection Committee of the IOCC, I am pleased to report that our program attracted one of the largest audiences of the meeting. This program concerned the effects of effluent standards proposed by the Environmental Protection Agency and the affect that such rules would have on the offshore and near offshore production of the coastal states. In addition, discussions were held concerning the effect of proposed regulations as to onshore drilling. Mr. Joseph DeVall, with the Department of Conservation of the State of Louisiana, presented the states' point of view and Mr. John Cunningham of the Effluent Guidelines Office of the EPA in Washington, spoke from the federal point of view. An interesting question and answer session followed this discussion.

The entire meeting on Wednesday was devoted to a discussion of the forthcoming rules and regulations being imposed by the EPA concerning underground injection. The IOCC has been working for approximately three years to get these rules and regulations into a state within which the oil and gas production industry can survive. It is pleasing to note that throughout this long course of discussions and many meetings involved, the EPA was most receptive to the ideas presented by the IOCC, as well as responding to criticisms from the industry, itself. There will probably be one more draft as a result of our meeting in Santa Fe and then these rules and regulations will be finalized. The recent discussion concerned itself mostly with clarification of some of the language in certain rules and regulations and in making certain that the meaning of other rules and regulations was clear and that both parties understood the wording in the same manner.

This office has been working closely with the Natural Resources Committee of the House of Representatives. We have requested that two bills be introduced concerning legislation under which this Commission operates. This piece of legislation was suggested to us by the Attorney General as a result of the fire at the Southern California gas operations near Luke Field. The Attorney General feels that the statutes under which we operate are questionable as to our authority in storage programs. After a conference, he suggested certain changes in the definition of "well" as contained in ARS 27-501.21 and amendments in ARS 27-516 requiring the Commission to adopt certain rules and regulations. The suggested amendments will be introduced at our

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Executive Secretary
December 9, 1977

meeting. In drafting the legislation concerning our authority over geothermal wells, we neglected to put in a policy section and a bill will be introduced for this purpose.

As previously advised, we have been working with the Natural Resources Committee to prepare a bill concerning recycling of used oil. This work has been completed and a suggested bill submitted to the Natural Resources Committee.

It should also be noted that, in conjunction with the three Universities, we are in the process of presenting a proposal to the Legislature for funding concerning proposed geological and geophysical studies. This will be discussed with you in more detail at the meeting.

In conjunction with a special committee established by the House of Representatives, I attended a series of meetings aimed at a proposed bill to establish an Arizona Energy Institute. The purpose of this would be to accomplish applied research as to new sources of energy and to be available to the public to answer questions concerning their problems with energy conservation.

Consequently, it seems there will be several bills involving the Oil and Gas Conservation Commission in the forthcoming session of the Legislature and I anticipate a rather busy schedule in working with it.

As I have said, in addition to the bills abovementioned, I anticipate a further attempt to establish some form of combined energy agency for this State. To date, all such suggestions have involved this Commission and I feel that any future bill will also include us. As customary, you will be kept advised and furnished copies of all bills pertaining to our area of interest.

Should you not be able to attend the December meeting, I would like to take this opportunity, on behalf of the staff as well as myself, to wish you and your family a Most Merry Christmas and Prosperous New Year.



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ACTIVITY REPORT

December 7, 1977

W. E. Allen
Enforcement Section

A further comment on proposed public land withdrawal for the purpose of establishing wilderness areas, once again comes the Sierra Club:

"An appeal filed with the U.S. Forest Service by the Sierra Club calls for the suspension of mineral leasing and operations in 11 national forests on the Overthrust Belt in Montana, Idaho, Wyoming and Utah, and it could jeopardize the industry's play in the promising 'new province' in the Rocky Mountain Region.

"The appeal, filed late last month, covered the Helena, Deerlodge, Beaverhead, Flathead, Gallatin, Lewis & Clark and Lolo National Forests in Montana; Targhee, Caribou and Bridger-Teton in Idaho and Wyoming; and Wasatch in Utah.

"The club is contending that the exploratory and development activity that is 'imminent' would destroy the wilderness characteristics of vast sections of the listed national forests and mandate their rejection by the Forest Service for wilderness consideration."

The Sierra Club requested the following action be taken in its appeal:

"The Forest Service immediately requested the Bureau of Land Management to declare void and rescind all leases issued after July 1, 1972 (the date of the Conti decision in Sierra Club vs. Earl Butz, which provided that BLM prepare environmental impact statements covering developmental activity adversely affecting wilderness characteristics in roadless areas not selected

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Enforcement Section
December 7, 1977

for further study in the RARE program) in RARE II areas. This would freeze the rights and obligations of lessees until a determination is made on a wilderness designation.

"Late in 1974, American Quasar Petroleum recovered oil and gas from Nugget at the Summit County, Utah, wildcat which opened the Overthrust Belt's widely-publicized Pineview field. Pineview now has 15 producing wells, about half of which were dually completed.

"The Pineview discovery touched off the Region's most active lease play in recent years, spreading northward through eastern Idaho, western Wyoming and western Montana to the Canadian boundary...and by three other discoveries on the Overthrust in Utah, including the Hogback Ridge gas area in Rich County, and Ryckman Creek, Yellow Creek, Evanston, Whitney Canyon and Painter Reservoir in Wyoming."

It is difficult to understand what has happened to the workable and beneficial theory of multiple use for public lands.

One other comment: just where does the real interest of the various well organized and financed environmental groups belong?

I have been informed by the area manager for the Bureau of Land Management in Kingman that the BLM has accepted geothermal lease applications on 20 sections of land within Townships 14 and 15 North, Ranges 11 and 12 West, Mohave County. This is an area just south and east of Wikieup. Exploration permits covering seismic, resistivity and thermoprobe studies have been issued by BLM on these 20 sections. The name of the individual requesting the leases was not ascertained.

At the last report, Pyramid Oil Company was drilling below 3770 feet on its No. 1 Federal located in the NE/SE/4 Sec. 28, T41N, R9W, Mohave County. A few minor oil and gas shows were encountered in the upper Devonian.

Energy Reserves Group is attempting to complete its Navajo "0" No. 6 in the SW/NW/4 Sec. 25, T41N, R30E, Apache County. The Navajo "0" No. 7, NE/SW/4 Sec. 25, T41N, R30E, has been plugged and abandoned and the company is drilling the Navajo "0" No. 9 in the SW/NE/4 Sec. 26, T41N, R30E, Apache County. Surface casing was run to 525 feet and cemented with 385 sacks of cement.

The enthusiasm of Energy Reserves has cooled somewhat since completing its No. 5 well and having to plug the No. 7 hole.

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Enforcement Section
December 7, 1977

We have had no further word from Kerr-McGee on their request for a hearing to enable them to do some infill drilling in the Dineh-bi-Keyah. In all probability, they have decided to wait until spring before starting on this program. This would be a wise decision, because it can get rough at that 8500 foot plus altitude.



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ACTIVITY REPORT

December 7, 1977

J. N. Conley
Director, Geology Section

PUBLICATIONS

Sales since November 15 total \$84.50.

OIL & GAS LEASING ACTIVITY

Anchutx Corp, a Denver-based firm, has acquired oil and gas leases on approximately 4,100,000 acres of state lands. The lands leased are on a wide band extending from northwestern Mohave County southeastward to the New Mexico state line. The location of these leases suggest that the company has in mind a thrust-belt play. One of the most active drilling programs in the Rocky Mountain region is along the overthrust belt zone along the Wyoming-Idaho state line. The new oil and gas fields being discovered are prolific producers. The pay zones occur in traps created by complicated system of thrust and normal faults.

ENERGY RESOURCE & MINERAL EXPLORATION

Oil and Gas. No on-the-ground exploration reported.

Uranium. Active

Geothermal. Reported, but not confirmed, on-the-ground exploration planned in Mohave County. There continues to be interest, however, on the part of consulting geological firms. These firms are investigating the geothermal potential for undisclosed company clients.

HELIUM

Southern Union Gas Company, Dallas, Texas, has recently requested information covering the availability of published and non-published data on helium in Arizona.

GEOLOGIC MAPPING PROGRAM

In last month's activity report, Mr. Bannister mentioned plans to submit a proposal to the State Legislature during the 1978 session for funds to perform geological mapping on a wholly funded state basis and on a cooperative matching-fund basis with the United States Geological Survey. The attached memorandum discusses in some detail this project and the present status.

Activity Report
December 7, 1977
Page 2

VISITORS

Floyd C. Moulton, Consultant, Denver, Colorado
Robert Plumlee, Bomack Drilling
H. D. Hand, Geologist, Riverton, Wyoming
Loyd L. Hill, Magcobar
Del Borggard, West Central Resources, Ltd., Calgary, Canada
G. T. Longshore, St. Joe American
R. L. Jodry, Energy & Natural Resources Consultants, Inc., Dallas, Texas

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JNC
J.N.C.



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420

PHOENIX, ARIZONA 85007

PHONE: (602) 271-5161

December 7, 1977

TO: Board of Commissioners

FROM: J. N. Conley

SUBJECT: Geological and Geophysical Mapping Programs for Evaluation
of Arizona's Energy and Other Natural Resources

Primary Objectives of Programs - Priorities

1. Production of a revised, updated, and high-quality geologic map of the state at a scale of 1:250,000 (1 inch = approx. 4 miles)
2. Mapping selectively defined areas prospective for energy and other natural resources at scales of 1:24,000 (1 inch = 0.379 miles) through 1:62,500 (1 inch = approx. 1 mile)

Principal Reasons for Request of Funds

1. Critical need for revised and updated geologic maps for better definition of those areas in the state offering the best potential for undiscovered or underdeveloped natural resources
2. Positive need for detailed or semidetailed geologic maps of local areas for utilization by government and the private sector in studies relating to such matters as land use, ground-water supplies, highway and dam construction, and flood control.

General Statement

A geologic map is one that depicts the nature of the earth's surface in as much detail as the map scale allows. Only a small percentage of Arizona's 113,956 square miles has been mapped at the most desirable scales of 1:24,000, 1:48,000, and 1:62,500 (see Figures 1 and 2). Complete geologic map coverage of the state is available at scales of 1:375,000, 1:500,000, and 1:1,000,000. These small scale maps were published during the period 1957 through 1969. Besides being out of date, they lack the detail needed for intensive exploration for the state's undiscovered natural resources. Figure 3 shows those portions of Arizona that lack any published geologic maps at scales ranging from 1:24,000 through 1:125,000 (1 inch = approx. 2 miles).

The search for mineral raw materials in Arizona has been underway since pre-historic times. Exploration for and exploitation of these materials, particularly gold, silver, and copper, has been intermittently active since the early 1880's. An intense search for uranium was made from the early 1940's until 1969 and is being actively explored for currently by both industry and government. The obvious deposits of economically important natural resources in the state have been or are being currently exploited. This is particularly the case for energy resources such as oil, natural gas, coal, and uranium.

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The most systematic method for ferreting out and developing new ideas as to where to look for undiscovered natural resources stems from geologic mapping. Currently available detailed and non-detailed map coverage of Arizona is not adequate to fully evaluate existing ideas or to develop new ideas as to the best localities offering a potential for undiscovered economically important natural resources.

Surface Geologic Mapping by Federal Government

Most of the surface geologic mapping throughout the country has been done by the United States Geological Survey (USGS), Department of the Interior. Prior to 1960 the Survey considered complete coverage of the nation with detailed 1:24,000-scale to be a viable objective. Since then increased constraints on funding and staffing plus the demands of other high priority national programs has forced the Survey to recognize that complete geologic map coverage of the country at a scale of 1:24,000 or even 1:62,500 is not a practical objective at this time.

The Survey will continue to produce detailed general purpose geologic maps in areas critical to other mission programs. But for map coverage over broad regions it will place emphasis on high-quality geologic mapping at a scale of 1:250,000. Maps at this scale generally allow depiction of the major geologic features most important for mineral and energy resource evaluation and regional planning at a cost of less than one-tenth that of 1:24,000-scale mapping. Many states are actively engaged in the preparation of maps at the 1:250,000 scale either on their own or in cooperation with the USGS.

Current and Planned Regional Surface Geologic Mapping by Federal Government

The USGS currently is forced to concentrate its limited resources for geologic mapping on areas critical to other mission programs. One such program in which it is involved is the high-priority National Uranium Resource Evaluation (NURE) program initiated in 1973 to provide a systematic appraisal of the conterminous United States and Alaska. The evaluation is now scheduled to be completed in 1983. The program involves national aerial radiometric and hydrogeochemical (water and stream sediment) surveys, surface and subsurface geologic investigations, and geochemistry and remote sensing studies. The program is supported by research and development in exploration technology to increase the effectiveness of both government evaluation and industry exploration. The emphasis on the surface geologic studies to be made will be on those phases pertaining to the preparation of the domestic uranium resource assessment.

The NURE resource estimates will be compiled for individual 1:250,000-scale 2° National Topographic Map Series (NTMS) quadrangles. Of the 272 priority quadrangles to be assessed by 1981, sixteen cover most of Arizona and portions of adjacent states. The USGS will provide the geologic evaluation and principal investigator for the following quadrangles wholly or partly within Arizona: Ajo, Flagstaff, Gallup, and Shiprock. Under this same program the State of Arizona will be the principal investigator for geologic evaluations of the Holbrook, Phoenix, and Tucson quadrangles (see Figure 4).

Implementation of Federal Geologic Mapping Program

The prime objective of the current federal geologic mapping program is a comprehensive assessment of the nation's uranium resources. The geological evaluation

Board of Commissioners
December 7, 1977
Page 3

of the 2° NTMS quadrangle coverage in Arizona will involve three or more principal investigators. Evaluation will be concerned primarily with a compilation of existing geologic mapping with some field checks and new mapping of areas prospective for uranium deposits. To achieve the first priority, the production of a revised, updated, and high-quality geologic map of the state, input from state agencies and academia will be necessary. Currently there is no inventory available of the various geologic maps and revisions of previous mapping performed in the state since publication in 1969 of the geologic map at a scale of 1:500,000.

Further, if some interim mapping is not done, a new state map will still show vast areas of structurally featureless Quaternary and Tertiary sedimentary rocks and large areas of older sedimentary rocks offering no clues to the possible presence of subtle surface expressions of subsurface structure favorable for the entrapment of hydrocarbons or deposits of hot plutonic rocks. The absence of outcrop does not mean a lack of surface evidence of structure. This evidence is more subtle than that of outcrop areas, but it is obtainable through improved methods of data gathering and data-use.

As most of the state's energy resources, such as oil, natural gas, coal, thermal, and uranium, occur within the earth's crust, geophysical data and extensive subsurface studies will be necessary to supplement surface geological leads to prospective areas for these resources.


Status of Planning for State Funds

The Oil and Gas Conservation Commission and the Bureau of Geology & Mineral Technology are the lead agencies proposing the compilation and acquisition of geologic and other resource information for the purpose of assessing the natural resources of the state, with initial emphasis on energy resources. A preliminary planning session was held November 25. Attendees were: Drs. Augustus Cotera, David Krinsley, and Edgar McCullough, representing respectively the Geosciences Departments of Northern Arizona University, Arizona State University, and University of Arizona; John Bannister and myself. Dr. McCullough is also Acting State Geologist. There was a consensus that this is an opportune time to submit a proposal to the next session of the State Legislature for the funding of geological and geophysical projects designed to implement and expand similar projects to be wholly funded by the Federal Government. Specific programs for the first year of a five-year program are being formulated by representatives of the three universities, the Bureau of Geology & Mineral Technology, and this Commission. Support for these programs will be solicited Friday, December 9, from the following state agencies:

Dept. of Mineral Resources - John Jett
Dept. of Transportation - Dan Scott
Arizona Resources Information Systems, Dept. of Revenue - Mike Castro
Land Dept. - Andrew Bettwy
Water Commission - Wes Steiner

The USGS is very interested in our planned projects and has requested a joint meeting to discuss them. This meeting will be held in Tucson on December 20 in the offices of the Bureau of Geology & Mineral Technology.

JNC:os


J.N.C.

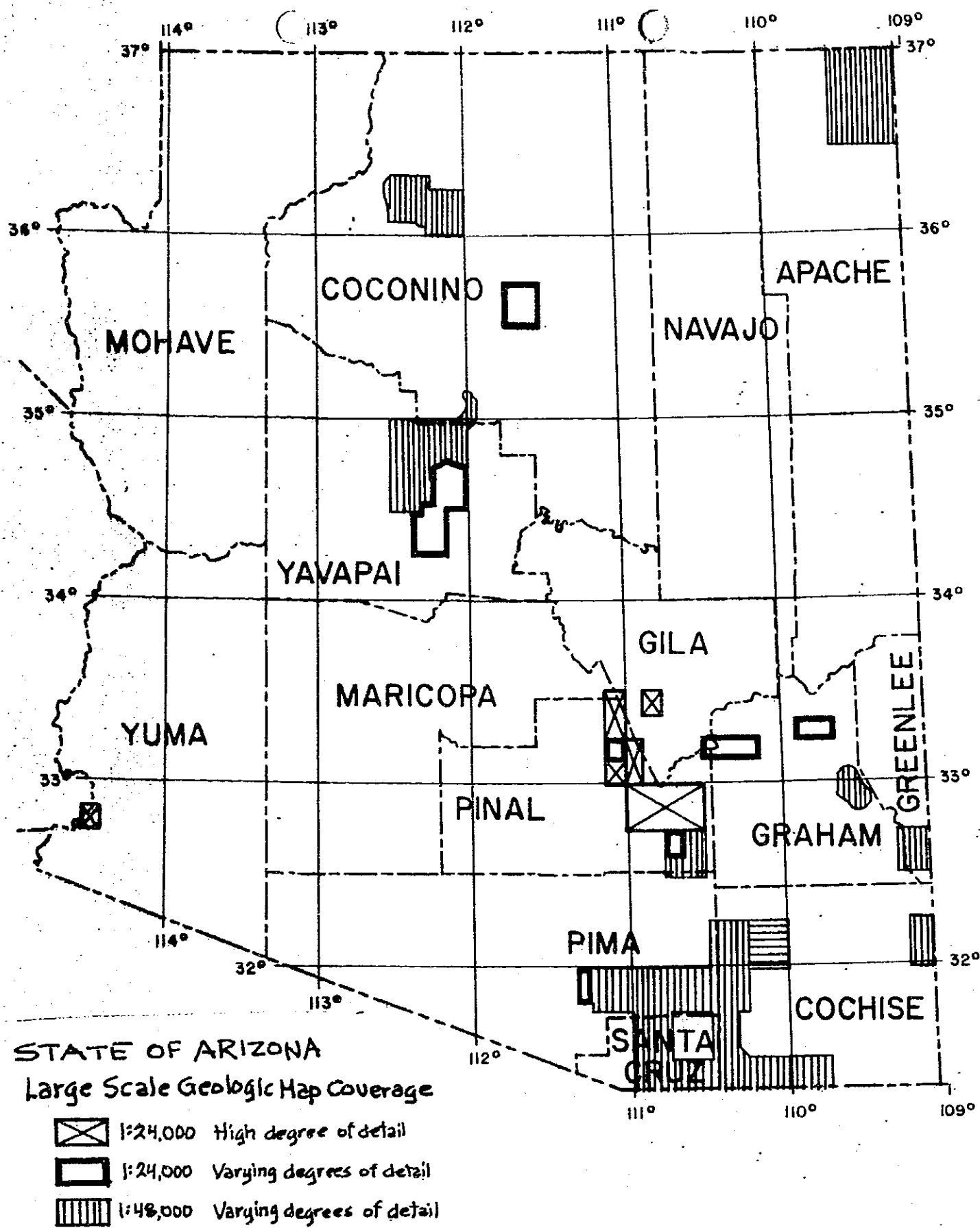


Figure 1.- Map showing status of published large-scale maps as of September 1976 at scales of 1:24,000 and 1:48,000.

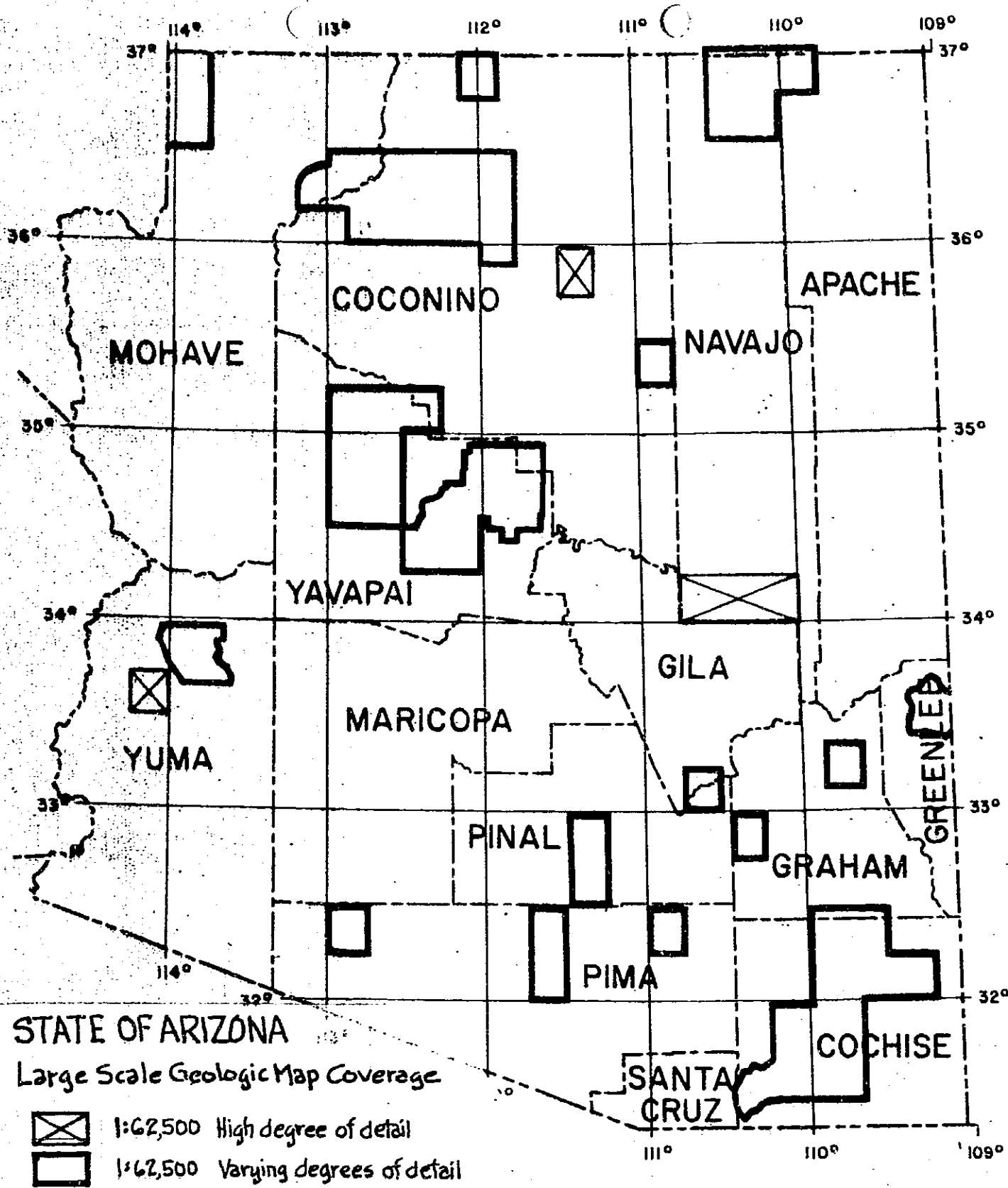


Figure 2.- Map showing status of published geologic maps as of September 1976 at scale of 1:62,500.

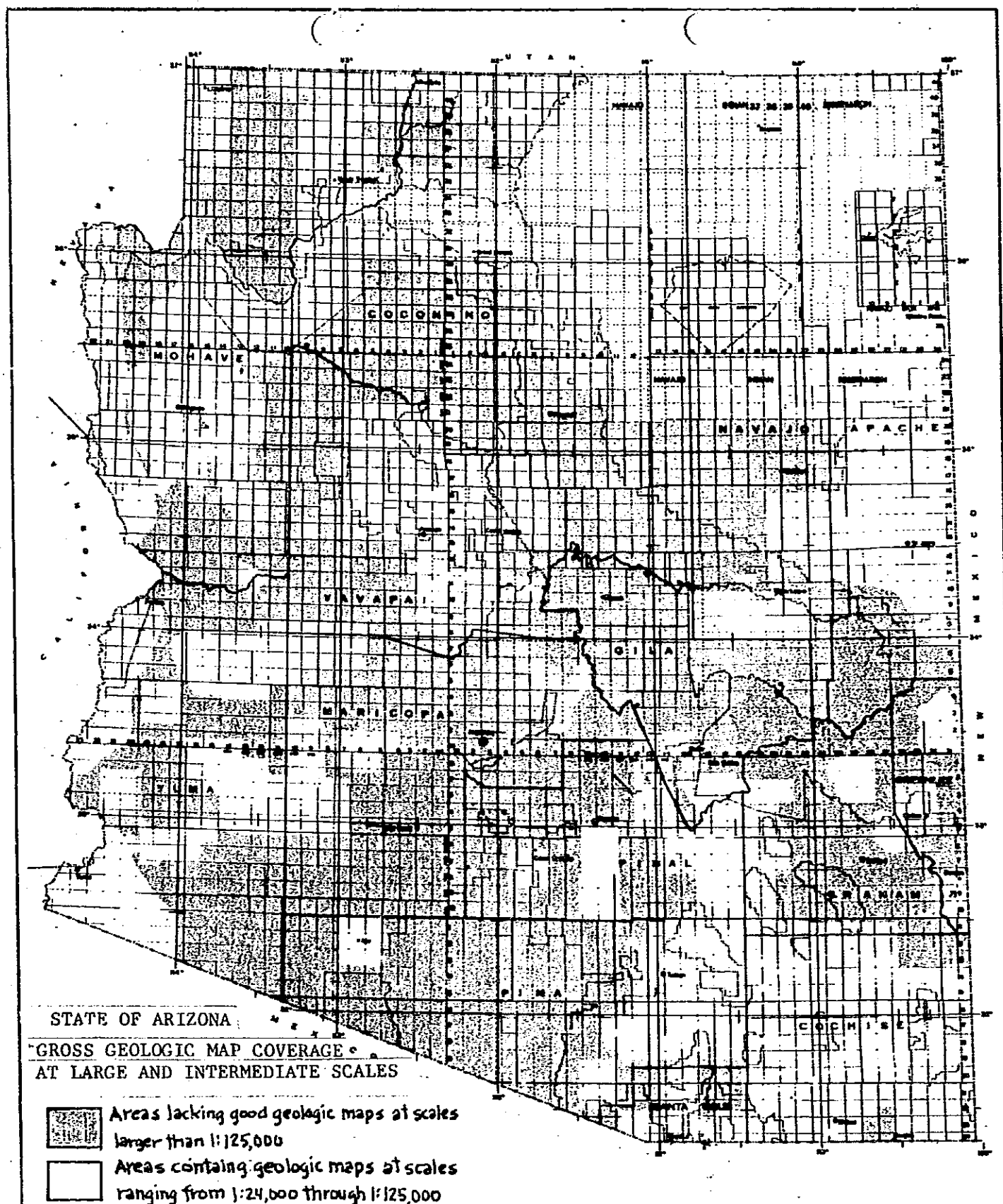


Figure 3.— Map showing areas in the state as of September 1976 lacking detailed or semi-detailed geologic map coverage at scales larger than 1:125,000. The coverage at scales ranging from 1:24,000 through 1:125,000 includes some water-supply, old photogeologic, and other kinds of maps with limited detailed geologic information.

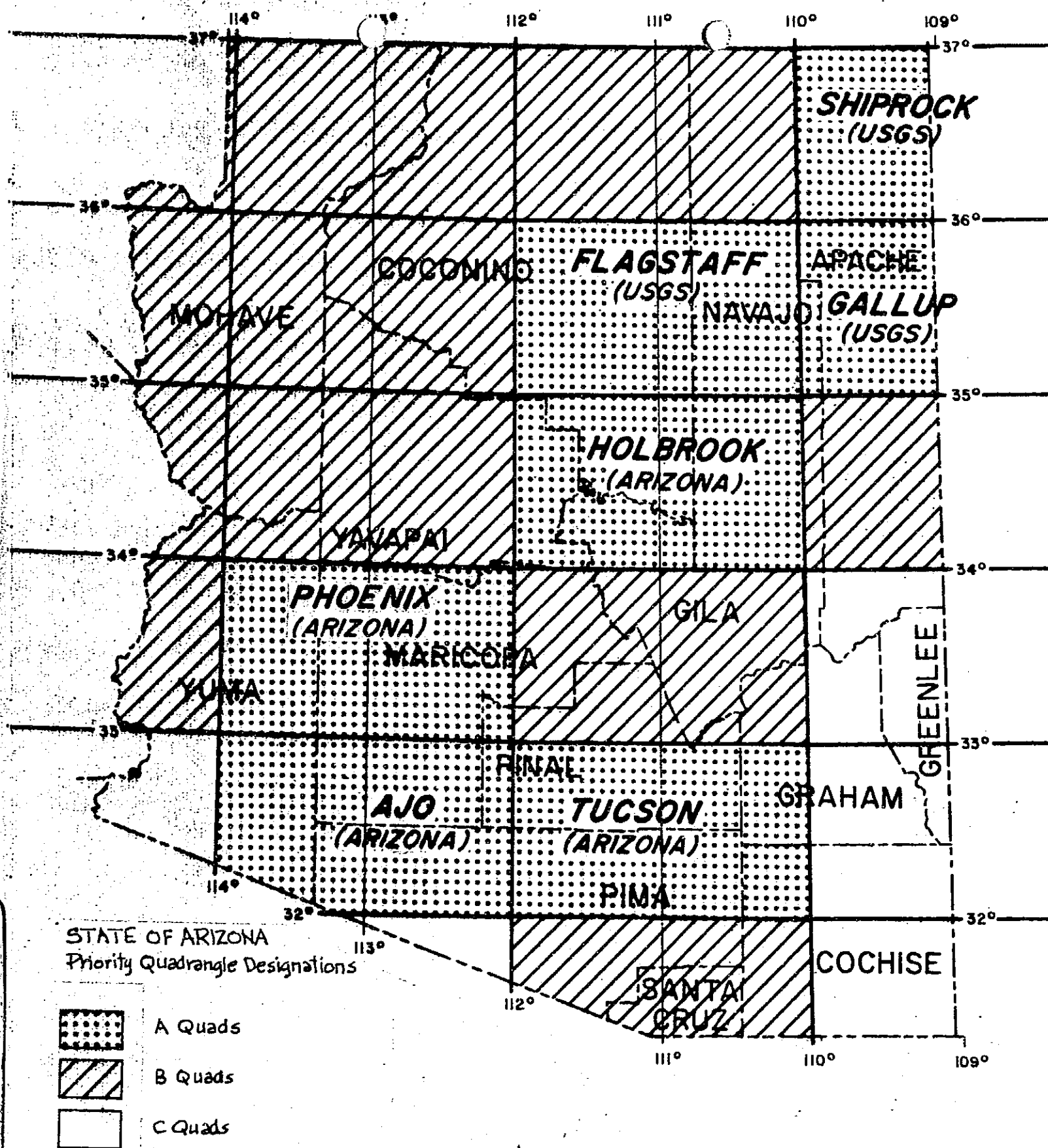


Figure 4.- Priority quadrangle designations for NURE. The state of Arizona will participate in the geologic evaluation of the Ajo, Holbrook, Phoenix, and Tucson quadrangles under the NURE program.

AGENCY Oil & Gas Conservation Commission

DIVISION _____

IDENTIFICATION () DE NO. _____

1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF Nov. 1977
360.00	71140	1 Per Diem: Commission Members	1
36,641.68	71150	2 Salaries: Staff	2 8,140.00
244.66	71510	3 Workmens Comp.	3
219.96	71520	4 Unemployment Insurance	4 55.68
1,450.76	71530	5 F.I.C.A.	5 48.84
2,564.92	71542	6 Retirement	6 169.94
927.25	71550	7 Health Insurance	7 569.80
60.00	71570	8 Personnel Comm. Pro Rata Charges	8 229.50
562.27	72169	9 Professional Services: Cartog Symbols	9 562.27
812.50	72199	10 Professional Services: Cartographer	10 216.50
278.10	72511	11 Travel-State: Mileage - Private Vehicles	11 34.80
1,728.15	72512	12 Mileage - State Vehicles	12 955.05
671.44	72520	13 Subsistence	13 213.94
56.00	72531	14 Air Fare	14
53.10	72541	15 Registration Fees	15 48.60
4.00	72543	16 Parking	16 4.00
382.35	72560	17 Travel-Out of State: Subsistence	17
659.64	72571	18 Air Fare	18
53.25	72574	19 Taxis	19
25.00	72581	20 Registration Fees	20
90	72589	21 Other-Telephone, etc.	21
	72711	22 Occupancy: Office Rent	22
	72713	23 Warehouse Rent	23
25.13	72821	24 Mtn. & Repairs: Furniture	24 25.13
	72823	25 Adders & Calculators	25
168.00	72826	26 Copy Machine, Other	26
	72827	27 Mimeo, Reader-Printer, etc.	27
	73111	28 Office Supplies: Printed Stationery & Envelopes	28
	73113	29 Carbon & Ribbons	29
67.32	73117	30 Reproduction Supplies	30
623.16	73119	31 Misc.	31 105.98
	73259	32 Field Supplies: Logs, etc.	32
	73514	33 Printing - Large Maps, etc.	33
53.91	73524	34 Legal Advertising	34
	73531	35 Subscriptions: Newspaper	35
29.80	73533	36 Technical Journals	36
155.00	73541	37 Postage Stamps	37
91.17	73551	38 Telephone Service: Central System	38
322.20	73552	39 Equipment Rental	39
79.17	73553	40 Long Distance	40
129.46	73554	41 ATS Service Charge	41
1,569.50	73720	42 Organization Dues	42 69.50
98.80	73730	43 Technical or Reference Books	43 31.20
600.00	73741	44 Insurance	44
250.00	79220	45 Revolving Fund	45
502.26	74312	46 Capital Outlay: Map Cabinet	46
287.96	74313	47 Light Table	47
		48	48
204.00	71552	49 D&L Ins	49 72.00
50	72549	50 Travel-State: Misc.	50 50
43.00	72824	51 Mtn. & Repairs: Typewriter	51
115.39	73519	52 Printing, Misc.	52
51.42	73119.1	53 Fed. Grant - Printing Maps	53 51.42
		54	54
		55	55
53,223.74		TOTAL	11,604.65

OFFICE

(DO NOT WRITE BELOW THIS LINE)

FIELD

MONTHLY FINANCIAL REPORT

RECEIPTS MONTH OF	CLASSIFICATION	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
Nov 1977				175 00
75 00	1 Permits to Drill			
	2			
	3			
	4			
	5			
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	8			
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75 00	TOTAL CURRENT MONTH RECEIPTS		75 00	XXXXXX
XXXXXX	TRANSFERS IN		3,801 83	XXXXXX
XXXXXX	BALANCES BROUGHT FORWARD		3,876 83	175 00
75 00	TOTALS - MONTH AND YEAR TO DATE			

CLAIMS PAID MONTH OF	EXPENDITURES FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
Nov 1977					
8,140 00	1 Personal Services	54,250 00	37,001 68		17,248 32
1,145 76	2 Emp. Related Exp.	9,350 00	5,672 05		3,677 95
778 77	3 Professional Services	2,350 00	1,374 77	473 50	501 73
1,256 89	4 Travel - State	3,450 00	2,791 29	420 36	238 45
-	5 Travel - Out of State	2,000 00	1,123 14	352 00	524 86
-	6 Other Operating Exp.	10,048 56	4,470 59	458 14	5,119 83
283 23	7 Capital Outlay-Equipment	800 00	790 22		9 78
	8				
	9				
	10				
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11,604 65	TOTALS	82,248 56	53,223 74	1,703 90	27,320 92



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 271-5161

ACTIVITY REPORT

November 14, 1977

John Bannister
Executive Secretary

It appears that there will be a hearing scheduled for our December meeting which will be held at 10:00 a.m. in the hearing room adjoining our office. The hearing will concern a request from Kerr-McGee Corporation to do some infill drilling in the Dineh-bi-Keyah field. The purpose of this drilling is to reduce spacing for future wells in order to assure the greatest recovery of oil by determining the full drainage pattern of the field. A representative of Kerr-McGee phoned me on November 10th and advised that an application for this hearing, together with an application for a proposed well location, would be forthcoming. Of course, you will be advised in time to make your plans.

Following the hearing, which I do not anticipate will be a lengthy one, we will hold the regular Commission meeting. At that time, the reduced budget, as proposed by Governor Bolin, can be discussed. As I previously advised, following Governor Bolin's guidelines I submitted a corrected budget request, a copy of which was furnished to you. I indicated in my letter of transmittal that I felt the budget as originally submitted by us should be sought. However, in discussions, this date, with several Commissioners, it seems to be your desire to follow the Governor's recommendations. Of course this will be adhered to.

The reduced budget involves items other than personal services and employee related expenditures, since these are figures controlled by the Personnel Division. It should be noted that if the Legislature grants cost of living raises to state employees, the amount of money represented by the increase will be automatically added to our budget by the Legislature.

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Executive Secretary
November 14, 1977

The Federal Energy Regulatory Commission (this is the old Federal Power Commission now under the new Federal Energy Office) recently approved the proposed El Paso-Sohio pipeline to bring Alaskan oil to the West Coast and transport it over the existing capacity in the El Paso gas pipeline to the Midland, Texas area. The proposal still must pass the various state regulatory bodies in California, Arizona, New Mexico and Texas. It is my feeling that the only problems will rise in the State of California, where unusually strict environmental matters will be a possible hindrance.

Energy Reserves Group is developing an area in the extreme northeast corner of Arizona and has indicated a very optimistic outlook for a potential new oil field. They have indicated that they plan to drill at least 14 wells in this project. Bill Allen will discuss this at length in his report.

Indications are of increasing general interest in the oil and gas potential of Arizona.

In cooperation with the University of Arizona, the United States Geological Survey and other concerned state agencies, we are in the planning process of preparing a proposal to submit to the Legislature for funding during its 1978 session. This proposal will cover some geological mapping to be financed by the United States Geological Survey and the State of Arizona, through Legislative action. The purpose is to ultimately secure a geological map of the state on a scale of 1/250,000. This is the scale most generally preferred by working geologists. If this program is carried out, this will accomplish a much more detailed geological mapping of the state than has ever before been available and will be a most valuable working tool to geologists in all phases of natural resources, exploration and development. Likewise, it will enable various disciplines to identify much more accurately specific areas of interest and to concentrate their efforts. Hopefully, this can be tied in to a program of geophysical work to be done either by the University of Arizona or private sectors in specific areas of interest.

It is anticipated that the total program will cover a period of approximately five years. During each of the years in question, valuable work would be released for use by state agencies and it is planned that work in the more potential areas of the state and areas in which greater interest is being shown will be scheduled for the initial phase. You will be kept advised as to the progress of this proposal.



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ACTIVITY REPORT

November 14, 1977

W. E. Allen
Director
Enforcement Section

The amount of public lands being withdrawn from the multiple use category was mentioned in the previous activity report. This subject was also discussed at the last Commission meeting. Attached to this report is an editorial from a recent issue of the Oil and Gas Journal which points out the seriousness and, I might add, the folly of these large land withdrawals.

Arizona State University, Department of Geology, expects to drill a 5000 foot geothermal test in the Castle Hot Springs area within two years. The funding for this test will come from the Department of Energy. It is my understanding that funding is already available for A.S.U. to drill a number of heat flow holes. The University isn't expecting steam or fluids hot enough for the generation of electricity. The hot water from this test is to be used for space heating and cooling. Members of the geological staff have contacted this office several times regarding drilling procedures and cost. My estimate of the cost to drill this 5000 foot test is \$150 per foot or a total cost of \$750,000. This is the same estimate the University has received from private industry sources.

Our recent meeting with industry members to discuss proposed legislation regarding the recycling and reuse of used oil was well attended and created quite a bit of interest and controversy - most of it unfavorable. We have made some changes in this suggested bill and will have another meeting on the 22nd of this month.

The Frances Whitmore State No. 1 test located in the SW/SW/4

Page 2
Director, Enforcement Section
November 14, 1977

Sec. 6, T7S, R25E, Graham County, has been plugged at 1024 feet. No shows were encountered.

Pyramid Oil Company has plugged its Federal No. 2 test located in the NE/NE/4 Sec. 18, T40N, R9W, Mohave County. This test reached a total depth of 4500 feet. Some dead oil and a very small amount of gas were encountered in the 2500 to 3000 foot range. Pyramid is presently drilling its Federal No. 1 located in the NE/SE/4 Sec. 28, T41N, R9W, Mohave County. This test is approximately 4 miles north and east of the No. 2 well.

Energy Reserves Group are testing their Navajo "0" No. 5 situated in the NE/NE/4 Sec. 26, T41N, R30E, Apache County. Casing has been set on their Navajo "0" No. 6 in the SW/NW/4 Sec. 25, T41N, R30E. The Navajo "0" No. 7 has had surface casing set. This well is located in the NE/SW/4 Sec. 25, T41N, R30E and a permit has been issued to drill Navajo "0" No. 8 in the NE/NW/4 Sec. 25, T41N, R30E. Energy Reserves people tell me that they are very enthusiastic about this. They have 14 locations staked and are running out of room to drill. There are 3 potential producing zones in these wells - the Lower Ismay, Desert Creek and Barker Creek. All zones are within the Pennsylvanian Hermosa group.

Kerr-McGee Corporation are making noises like they might do some infill drilling in the Dineh-bi-Keyah field. Should they do this, it will require a hearing. That field has a 160 acre spacing rule, so an infill well would be an unorthodox location. I would expect Kerr-McGee to request an 80 acre spacing for the field.

Government locking up vast oil, gas reserves

FEDERAL lands containing some of the best undrilled oil and gas prospects in the U.S. are being locked up by Congress and the administration at an alarming rate.

The danger would be hard to exaggerate.

In the Lower 48, the U.S. Forest Service wants to double to 30 million acres the federal lands set aside for wilderness areas. This is in addition to the scores of millions of acres already reserved for national parks, national forests, and the like.

Most of the added land withdrawals would have to come from the Rocky Mountain area—one of the few in the U.S. where deep untested prospects abound. The hot Overthrust Belt area is one example.

IN ANOTHER great exploration theater, the frontier areas of the Outer Continental Shelf, Interior Sec. Cecil Andrus has further postponed lease sales in many prospective areas and removed from the sale list altogether some of the most attractive provinces.

And then there is onshore Alaska where potential is vast and many prospective basins are either undrilled or sparsely drilled. Great stretches of promising oil-hunting grounds there have been locked up for many years in various land preserves. Now this off-limits acreage is about to swell with the permanent addition of a fourth of all land in Alaska—maybe more.

In settling Alaskan native claims in 1971, Congress also tentatively selected and set aside 83 million acres (of the state's total 372 million) for national parks, forests, wildlife refuges, and scenic river systems. Exploration was barred throughout this vast expanse.

Now Congress is about to make the land reservation permanent. Morris Udall (D-Ariz.), chairman of the House interior committee, would reserve that 83 million acres and add another 60 million.

Andrus recommends a 92-million-acre set-aside.

The damage already is done in locking up at least 83 million acres more somewhere in Alaska unless the 1971 law is amended.

And it should be. If it is not, the acreage selections should be revised very carefully to avoid permanently sealing off some of America's most promising oil and gas prospects.

EXPERTS on Alaska geology say at least 4-5 million acres of highly prospective areas were put off limits in Congress's tentative 1971 land withdrawal—plus a lot more with lesser potential. Udall's would-be reservations probably would double that amount. On top of that, passage of the Udall proposal would so surround other promising regions that there would be no way to move new supplies to market. You can't lay a pipeline across a wildlife refuge.

Andrus's recommendation would eliminate some of these bottlenecks but would still shut off exploration in some high-potential areas.

There are plenty of examples in past federal actions of the danger of hasty, ill-advised land reservations—actions which have hurt the country and still hurt it today.

Perhaps the prime example is in the existing Arctic National Wildlife Refuge bordering the Beaufort Sea and Canada's Yukon Territory. Locked up there is the Marsh Creek anticline, a mammoth structure at least as large as that which yielded Prudhoe Bay to the west. The state of Alaska estimated in 1972 that it could contain 20 billion bbl of oil and 11 trillion cu ft of gas. That's oil and gas which could—but won't—rescue the U.S. from its imports quicksand.

Now the Government may be putting still more billions of barrels and trillions of cubic feet in limbo.

And for what? Because of the false notion that the only way to preserve a beautiful ecosystem is to ban drilling forever.

Oil and gas exploration and development do not have to destroy wilderness. It has been proved time and again they can be compatible. The historic multiple-use policy for federal lands has served the country well. For the good of the U.S. and all its citizens, it must not be junked.



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ACTIVITY REPORT

November 15, 1977

J. N. Conley
Director, Geology Section

PUBLICATIONS

Sales since October 11, 1977, total \$70.00.

OIL & GAS LEASING ACTIVITY

None reported. However, Brooks Exploration Co., a Denver based oil company, sent a landman to Phoenix this past month to check state and federal oil and gas lease records in the Pedregosa basin of southeast Arizona. On a stopover in Denver en route to Sioux Falls, South Dakota, I spent several hours with the top officials of this firm. Although they consider the basin to be in a frontier area for oil and gas, they may decide to acquire some blocks of leases for future geophysical exploration to find one or more potential drillable prospects.

This firm currently has a lease position in the Strip Country portion of Mohave County.

ENERGY RESOURCE & MINERAL EXPLORATION

Oil & Gas. No on-the-ground exploration reported.

Uranium. Continues to be active.

Geothermal. ERDA/DOE Project. As reported previously, we are participating in this evaluation of the state geothermal potential project being conducted by the Bureau of Geology & Mineral Technology. The project is funded by the Energy Resources and Development Administration and the Department of Energy. Our new geologist, Salvatore Giardina, is our "principal investigator" for our contribution to the project. He is currently processing the data previously assembled from an extensive search of published and non-published literature. To date he has calculated thermal gradients for more than 905 wells in the Basin and Range province. He is also evaluating the resultant data as developed to partially delineate areas exhibiting anomalously high gradients.

Castle Hot Springs. The federal government, through ERDA and DOE, are funding a geothermal project at Castle Hot Springs in southern Yavapai County. The objective will be to develop a hot water geothermal system capable of space heating and cooling. The initial phase of the project will involve the drilling and coring of 20 holes to depths of 500 feet to determine the heat flow of the area.

Activity Report
November 15, 1977
Page 2

If the heat flow values and other critical requirements are satisfactory, a production hole will be drilled for further testing.

The lands involved are owned by Arizona State University. The project will be performed by ASU faculty personnel and Richard Hahman's staff, Bureau of Geology & Mineral Technology.

Verde Valley Project. A proposal has been submitted to the federal government for a reconnaissance investigation of the geothermal potential of waters in the Verde Valley, Yavapai County. The objectives are to determine the extent of known warm waters and, by indirect geochemical methods, attempt to determine what the temperatures are at depth. If there does exist the potential for production of geothermal water, plans will be developed for a detailed study of the area.

Potential Severe Constraint on Utilization of Low-Temperature Geothermal Technology. Studies presently underway in Arizona and New Mexico, according to the Los Alamos Scientific Laboratory (LASL) in Los Alamos, New Mexico, will reveal the presence of several low-temperature geothermal anomalies within usable distances of potential community users. However, under present governmental rules and regulations, such anomalies involving state and federal lands could be declared KGRA's and thereby incorporated into governmental permit and leasing systems. Most communities in Arizona and New Mexico do not have the financial resources necessary for competitive state and/or federal lease bidding.

LASL has proposed to the Division of Geothermal Energy, Department of Energy, that this problem be investigated and that recommendations be offered to help mitigate the problem.

PECORA III SYMPOSIUM

This symposium, held in Sioux Falls, South Dakota, October 30-November 2, dealt with the application of satellite data to petroleum and mineral exploration. It was sponsored by the American Association of Petroleum Geologists in cooperation with the U.S. Geological Survey and the National Aeronautics and Space Administration.

Of particular interest to this Commission was a paper pertaining to northeastern Arizona:

Abstract of Paper:

Integration of LANDSAT and Geophysical Data in Northeastern Arizona

S. I. GUTMAN and G. A. HECKMANN, Santa Fe Engineering Services Co., Orange, Calif.

A study was undertaken on behalf of the U.S. Geological Survey to examine ways in which LANDSAT data integrate with selected geophysical methods. This paper summarizes the results obtained for northeastern Arizona.

LANDSAT imagery with partial snow cover and a low sun angle was acquired to enhance structural features. A structural interpretation was performed on 1:500,000 scale false-color composites.

Residual magnetic intensity data derived from Sauk and Sumner's aeromagnetic survey of Arizona were continued to a common flight line elevation and contoured on a map. This map, along with other published data, was used to define the configuration of the magnetic basement and to identify any significant tectonic trends that might exist.

Bouguer gravity anomaly data, derived from several sources, were used to create the residual Bouguer anomaly map of northeastern Arizona for interpretation.

The results of these semiautonomous operations were then integrated to achieve, as closely as possible, an internally consistent final interpretation.

This interpretation has been analyzed in the light of the regional geophysics, geology, and the work of others, and its implications have been examined, particularly with respect to the oil and gas potential of northeastern Arizona.

Activity Report
November 15, 1977
Page 3

The authors utilized extensively publications of this Commission in preparing their paper. We also furnished unpublished information available in our files. In a personal communication, one of the authors stated that they have defined or semi-defined numerous localities in the study area that, in their opinion, warrant additional geophysical and geological investigation for oil and gas accumulations.

JNC:os


J.N.C.

AGENCY Oil & Gas Conservation Commission

DIVISION _____

IDENTIFICATION DE NO. _____

1	2	3	4
CLAIMS PAID YEAR TO DATE	OBJECT CODE NO.	DISTRIBUTION OF EXPENDITURES CLASSIFICATION	CLAIMS PAID MONTH OF Oct 19 77
360 00	71140	1 Per Diem: Commission Members	1 210 00
28,501 68	71150	2 Salaries: Staff	2 7,540 88
188 98	71510	3 Workmens Comp.	3 57 48
171 12	71520	4 Unemployment Insurance	4 45 26
1,280 82	71530	5 F.I.C.A.	5 159 12
1,995 12	71542	6 Retirement	6 527 86
698 25	71550	7 Health Insurance	7 199 50
60 00	71570	8 Personnel Comm. Pro Rata Charges	8
	72167	9 Professional Services: Engineer	9
596 20	72199	10 Professional Services: Cartographer	10 277 50
243 30	72511	11 Travel-State: Mileage - Private Vehicles	11 130 80
773 10	72512	12 Mileage - State Vehicles	12 773 10
457 50	72520	13 Subsistence	13 220 00
56 00	72531	14 Air Fare	14
4 50	72541	15 Registration Fees	15 4 50
	72543	16 Parking	16
382 35	72560	17 Travel-Out of State: Subsistence	17
659 64	72571	18 Air Fare	18
55 25	72574	19 Taxis	19
25 00	72581	20 Registration Fees	20
90	72589	21 Other-Telephone, etc.	21
	72711	22 Occupancy: Office Rent	22
	72713	23 Warehouse Rent	23
	72821	24 Mtn. & Repairs: Furniture	24
	72823	25 Adders & Calculators	25
168 00	72826	26 Copy Machine, Other	26
	72827	27 Mimeo, Reader-Printer, etc.	27
	73111	28 Office Supplies: Printed Stationery & Envelopes	28
	73113	29 Carbon & Ribbons	29
67 32	73117	30 Reproduction Supplies	30 67 32
516 18	73119	31 Misc.	31 83 00
	73259	32 Field Supplies: Logs, etc.	32
	73514	33 Printing - Large Maps, etc.	33
53 91	73524	34 Legal Advertising	34
29 00	73531	35 Subscriptions: Newspaper	35
	73533	36 Technical Journals	36
155 00	73541	37 Postage Stamps	37
91 17	73551	38 Telephone Service: Central System	38 23 39
322 20	73552	39 Equipment Rental	39 80 53
79 17	73553	40 Long Distance	40 8 96
129 46	73554	41 ATS Service Charge	41 28 96
1,500 00	73720	42 Organization Dues	42
67 60	73730	43 Technical or Reference Books	43 67 60
600 00	73741	44 Insurance	44
250 00	79220	45 Revolving Fund	45
502 26	74312	46 Capital Outlay: Map Cabinet	46 51 81
287 96	74313	47 " " Light Table	47
		48	48
132 00	71552	49 Insurance - D&L	49 72 00
43 00	72824	50 Maintenance - Typewriters	50
115 35	73519	51 Printing - Misc.	51
		52	52
		53	53
		54	54
		55	55
41,619 09		TOTAL	10,623 59

OFFICE

(DO NOT WRITE BELOW THIS LINE)

FIELD

MONTHLY FINANCIAL REPORT

1	2	3	4	5
RECEIPTS MONTH OF Oct 1977	RECEIPTS CLASSIFICATION	APPROPRIATED RECEIPTS	UNAPPROPRIATED RECEIPTS	TOTAL ALL RECEIPTS YEAR TO DATE
50 00	1 Permits to Drill		50 00	
	2			
	3			
	4			
	5			
	6			
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	8			
	9			
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	11			
	12			
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	15			
	16			
	17			
50 00	TOTAL CURRENT MONTH RECEIPTS		50 00	XXXXXX
	TRANSFERS IN			
XXXXXX	BALANCES BROUGHT FORWARD		3,751 83	XXXXXX
50 00	TOTALS - MONTH AND YEAR TO DATE		3,801 83	100 00

6	7	8	9	10	11
CLAIMS PAID MONTH OF Oct 1977	EXPENDITURES FUND TITLES	TOTAL AMOUNT AVAILABLE YEAR TO DATE	CLAIMS PAID YEAR TO DATE	OUTSTANDING ENCUMBRANCES	UNENCUMBERED BALANCE
7,750 88	1 Personal Services	54,250 00	28,861 68	-	25,388 32
1,055 22	2 Emp. Related Exp.	9,350 00	4,526 29	-	4,823 71
277 50	3 Professional Services	1,850 00	596 00	1,000 00	254 00
1,128 40	4 Travel - State	3,450 00	1,534 40	1,722 10	193 50
	5 Travel - Out of State	2,000 00	1,123 14		876 86
359 78	6 Other Operating Exp.	9,404 06	4,187 36	483 97	4,732 73
	7 Capital Outlay-Equipment	800 00	790 22		9 78
	8				
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	30				
10,623 59	TOTALS	81,104 06	41,619 09	3,206 07	36,278 90

PHOENIX GAZETTE
17-24-77 P.1

Oil Firm Leases 4.11 Million Acres

By JOHN KOLBE
Gazette Political Reporter

A little-known Denver company has acquired leases to explore for oil and natural gas on 4.11 million acres of Arizona state land.

Andrew Bettwy, commissioner of the Land Department which issued the leases, said the acquisition marks by far the biggest oil and gas leasing in state history. It is about four times the average total acquired by all lessees in each of the last six years.

The Anschutz Corp. of Denver paid \$1,082,564 for the privilege.

According to department officials, the

land involved in the 2,135 separate applications filed by the firm is in 11 of Arizona's 14 counties. Only Apache, Navajo and Coconino counties are not included.

The leases are for five years, but the company must renew them each year by paying the fees to keep them in force.

CURRENTLY, THE only producing oil wells in Arizona are in the Denni-bi-Keyah field on the Navajo Reservation near the Four Corners. It is now producing about 450,000 barrels annually.

Since oil production began in Arizona in 1958, the state has produced only 16.4

million barrels, less than one day's consumption for the United States.

Kenneth Leis, assistant secretary of the Denver firm, who filed the applications with Bettwy's office last week, declined to reveal why the company is interested in a state with such a dismal production record.

"We're in a position where we just don't want to say too much," he said, but he noted there have been "a lot of changes in technology in the last five or ten years."

Asked whether the leases may later be

Turn to ● LEASES, Page A-16

(Concluded from Page A-1)

sold or assigned to a large oil corporation, Leis replied:

"WE'RE NOT fronting for anybody, if that's what you mean." He said he knew of no partners in the venture, but added a caveat: "Of course, when you get into an exploratory program, you never know what kind of help you might need down the line."

Historically, Bettwy said most major company explorations are done with leases initially acquired under another name.

The last major oil venture on state land, 1.25 million acres in southwestern and central Arizona, was undertaken in 1971 by Exxon Corp. But the leases were originally acquired in 1970 by an E. R. Richardson of Albuquerque.

Bettwy said he had no inkling of the reason behind the firm's interest in Arizona. "There will always be some legitimate filings by people who will never give up thinking there's oil in Arizona," he said.

NOTING THAT California, Utah and New Mexico are all major oil states, he said it "seems irrational to think we don't have some here." He said the widely scattered nature of the Anschutz leases "doesn't suggest that anybody's got anything real hot in mind," but that it is a speculative wildcatting operation.

According to John Bannister, executive director of the Oil and Gas Conservation Commission, the only significant exploration now underway in Arizona is being done by Pyramid Oil Co. west of Colorado City near the Utah border.

A second oil field on the Navajo Reser-

vation is now being developed east of Red Mesa, a few miles north of the existing field, by Energy Reserves Group of Wichita, he added.

"ARIZONA HAS some very promising oil country," said Bannister. "The problem is it's very deep and very expensive to drill." With extensive government controls on oil prices, he said, Arizona is "still very much a wildcatting state."

Ironically, Bettwy's departmental windfall from the record lease application might have been quadrupled if he had been more persuasive with legislators earlier this year.

He pushed for a hike in the annual per-acre lease fees from 25 cents to \$1, to match the fees charged on federal lands. But the amendment containing the increase failed on the House floor on a voice vote on March 31. Bettwy said lawmakers argued the higher price might discourage oil exploration at a time when domestic oil is at a premium.

HAD THE AMENDMENT passed and Anschutz sought the same acreage, it would have generated \$4,116,759 in lease fees, plus the \$53,375 the company paid in filing costs.

The leasing fee has gone unchanged since 1951, Bettwy noted.

"The feds are getting a buck for their land," Bettwy said, "and most of it is right next door to ours."

Last year, a total of 860,423 acres were under lease for oil and gas exploration, up 31,000 over the previous year. Fiscal 1971-72, when Exxon was active, was the only time the total ever topped 2 million acres.

Although Leis declined to reveal much about the company, documents on file with the Land Department describe Anschutz as a privately-owned corporation engaged in the "exploitation and conduct of natural resources and energy-related activities," with operating revenues during the last year of about \$280 million.

A CANADIAN subsidiary has 6 million acres under lease, and international explorations involve 20 million acres in countries on four continents. The company document says Anschutz is one of the principal contract drillers in the western U.S., drilling about 125 new wells annually.

It also has coal and uranium properties.

Philip F. Anschutz, president and sole owner of the firm, declined to be interviewed.