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ENVIRONMENT ASSESSMENT STUDY PROPOSED SALE OF FEDERAL OIL AND GAS LEASES SOUTHERN CALIFORNIA OUTER CONTINENTAL SHELF

An environment assessment was prepared by Western Oil and Gas Association subsequent to the announcement by the Department of the Interior, Bureau of Land Management, of a proposed Outer Continental Shelf lease sale in Southern California waters for development of oil and gas resources. To do this job, a task force of industry professionals was assembled disciplined in all areas of oil industry operations including exploration, production, transportation, environment, economics and oil spill containment and cleanup. To supple-ment this task force, qualified and recognized consultants in several specialized fields were retained.

From the Task Force analysis, documentation and projections, three significant conclusions regarding possible petroleum development of the Southern California Outer Continental Shelf seem apparent:

1. Unless several major new sources of non-imported petroleum become soon available to the United States, critical energy shortages can cause serious deterioration of our national economy for at least the next two decades. Southern California, which relies on oil and gas for 96% of its primary energy, is particularly vulnerable.

• By 1980 a 21% national energy gap is forecast. Under present conditions, this gap can be filled only by imported oil or by drastic reduction in our national economic and industrial strength.

• But even if foreign oil is not cut off by boycott, its rising cost and our deteriorating balance of trade can make it financially impossible for the United States to import enough oil to meet our needs.

• Supplementary sources of energy - nuclear, solar, geothermal and the like – must be developed as soon as possible. But their effects as additions to our domestic energy supply remain decades away and would be further delayed, if the general economy is weakened by serious energy shortages in the meantime.

• Conservation of energy and efficient energy use are essential parts of the program. But their combined contribution will affect only a small percentage of the energy demand during the next two decades.

2. Estimated oil and gas production from beneath the Southern California Outer Continental Shelf may be the major factor in meeting local and national energy requirements.

• Projected reserves in federal waters off Southern California range from six to 19 billion barrels, with 14 billion barrels a reasonable planning projection.

• If development should begin in 1975, production levels from this source could, within a decade, eliminate Southern California's dependence upon foreign oil.

• Alaska oil will help, but petroleum shortages forecast for only the seven western states by 1980 cannot be met by oil from Alaska and California combined. Additional new petroleum reserves – plus effective energy conservation and rapid development of supplementary energy sources – will be necessary to prevent the national economy from being untenably dependent on foreign oil.

3. Oil and gas beneath the California Outer Continental Shelf can be produced without undue negative impact on either marine or onshore environment.

• Platforms, drilling vessels, pipelines and routine exploratory and pro-(continued on page 2) Progress Report

Proposed Legislation Regarding the Release of Well Data

The California Section AIPG has drafted a proposed bill providing for the release of well data. It will be introduced in the State Legislature within the next month.

Basically, the proposed legislation would change Sections 3218 and 3234 of the California Public Resources Code dealing with the filing and release of well data to:

1. make all records filed with the Division of Oil and Gas public information when filed except . . .

2. data on a well designated by the Supervisor as a "prospect well" (Sec. 3218) shall be considered confidential after filing for one year or longer if conditions beyond the control of the owner or operator prevent his use of the data;

3. make all records now on file with the Division of Oil and Gas public information after six months except wells falling under 2.

We expect to testify at committee hearings in Sacramento later on this spring and would like to represent the consensus of the oil industry and geology profession. Any financial contribution towards our expenses would be welcome.

Contributions should be sent to and copies of the proposed bill may be obtained from:

> Frederick L. Stead 1334 Lincoln Blvd., Suite 120 Santa Monica, CA 90401

Theodore Off 2365 East Main Street Ventura, CA 93003

ENVIRONMENT ASSESSMENT... (from page 1)

duction activities have very little impact on the marine environment beyond their immediate locations. The only really significant potentially negative impact would be from large accidental spills.

• Advances in safety equipment, improved drilling techniques and technology, currently stringent government regulations and a high degree of vigilance and concern make the possibility of a major oil spill from offshore operations extremely unlikely and the incidence of small spillages rare. But prudence and environmental concern demand standby capability to deal promptly and effectively with any such emergencies.

• Availability of ocean-going skimmers, containment booms and trained cleanup crews with rapid response capability greatly reduce any potential for serious environmental damage from an oil spill. The possibility that any spilled oil would reach the beach is remote.

• In the case of oil spills, damage to the marine environment should not be expected. Oil now entering the ocean off Southern California from natural seeps is 10 times as large as the small spills projected for offshore operations. The amount of oil and grease in sewage now being discharged into the sea exceeds any projected spillage by many times.

• The natural wildlife habitat in Southern California has a high priority for preservation and protection because much of it has been lost to urban development. The offshore islands support some unique biota, as well as a few rare and endangered species, that should be shielded from further environmental problems. Sensitive areas along the coast and important coves on the islands can be protected by booms until recovery of oil spills can be effected.

Every person who understands the need to achieve a viable balance between national energy requirements and environmental considerations is urged to study the matter in greater detail. Copies of the complete Task Force report are available in a number of places throughout the community. Locations may be obtained by contacting:

WESTERN OIL AND GAS ASSOCIATION National Oil Building 6th and Grand Los Angeles, Calif. 90017 (213) 624-6386



Short Course February 21-22, 1975

Title: Current Concepts of Depositional Systems with Applications for Petroleum Geology.

Speakers: William R. Dickinson, Convenor (Stanford University); Robert Garrison (University of California, Santa Cruz); James Ingle (Stanford University); Hans Nelson (U.S. Geological Survey).

Topics:

Friday, February 21:

(9:00 a.m. - 5:30 p.m.)

- 1. Fluvial Sediments of Stream Valleys, Alluvial Fans, and Pediments (Dickinson)
- 2. Strand Deposits of Beaches, Barriers, and Tidal Flats (Ingle)
- 3. Marine Shelf and Slope Deposits (Nelson)
- 4. Carbonate Shelves and Sabkhas (Garrison)
- 5. Deltaic Deposits and Cyclothems (Dickinson)
- 6. Deep Sea Turbidite Fans and Other Base of Slope Deposits (Nelson)

Saturday, February 22:

(8:00 a.m. - 4:30 p.m.)

- 1. Carbonate Reef and Bank Complexes (Garrison)
- 2. Paleoecologic Indicators and Trace Fossils (Ingle)
- 3. Hemipelagites and Other Basinal Clastics (Nelson)
- 4. Basinal Carbonates, Chalks, and Other Pelagites (Garrison)
- 5. Paleobathymetric Analyses of Sedimentary Basins (Ingle)
- Hydrocarbon Occurrences in Relation to Depositional Systems (Dickinson)

Cost: \$30.00 for members and nonmembers, \$15.00 for students. Includes a publication of lecture notes. Extra copies of this publication will be available for \$5.00 after the course. **Place:** West High School Student Center, 1200 New Stine Road, Bakersfield, California.

Registration: Registration will begin at 8:00 a.m., February 21, 1975, at the student center.

Pre-registration and additional information, contact:

R. C. Murk Gulf Oil Corporation P.O. Box 1392 Bakersfield, CA 93302

LOS ANGELES BASIN

The Los Angeles Basin Geological Society will have as its guest speaker in March, Mr. Abdulrahman al-Zamil. The title of his talk is "Oil as an Instrument of Development and Foreign Policy: An Arab View." This meeting will be at 12 noon on Monday, March 17, 1975, at the Taix Restaurant, Sunset Boulevard, Los Angeles.

New Officers

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GEOLOGIC REVIEW

Oil as Instrument of Development and Foreign Policy: "An Arab View"

Abdulrahman al-Zamil

Traditionally oil has been the source of funds needed for socioeconomic development. Producing countries, for many reasons, did not wish to jeopardize this vital source of income. But the political circumstances at long last forced the Arab producing countries to use it as an instrument of foreign policy. Oil's new role was spelled out by HM King Faysal in 1974 when he stated, "Production decisions are not at all compelled by my country's revenue needs; every added barrel of production might then be viewed as a sacrifice of my country's resources to (continued on page 5)



"Away, you scullion! you rampallion! you fustilarian' I'll tickle your catastrophe." — KING HENRY IV, PART II.

Big Happy Family. Picked up 15 new members at the last meeting when Greg Davis, Professor of Geology at USC gave us an outstanding talk on thrust faulting in the Western United States. His flawless presentation, engaging personality, and his absolutely sparkling wife made this meeting one to remember.

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Spouses' Night coming up. We are informed that our prestigeous Northern California Geological Society plans to hold a *Spouses' Night* on Wednesday, April 16th, at the Engineer's Club in San Francisco. Used to be *Wive's Night*. *Wife* is a beautiful word. But *Spouse* – UGH! Well, anyway, save the date. Cocktails at 6, dinner at 7. Best part of it is that Mary Hill, a lovely geologist with the Division of Mines and Geology will tell us about the Singing Sands of Rag-i-ruwan in Afghanistan, a noisy

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membership inquiries should be directed to: MEMBERSHIP SECRETARY, PACIFIC SECTION AAPG, P.O. BOX 17486, FOY STATION, LOS ANGELES, CALIF. 90017. sand dune that has been humming the Song of Solomon for the last thousand years. And there's more . . .

Field Trip coming up. Saturday and Sunday, May 10 and 11. A great romp and gambol over the Cretaceous outcrops renowned in book and legend along the west side of the Sacramento Valley north of the Bay. Lotta history up there, too. Overnight at Clear Lake, formed by a dam landslide, and then home through Napa's wine bright valley. En route, much sipping of the grape is promised. All aboard will arrive home with bellies full of beer, vino, and geology. By the way, Ernie Rich will be the leader of the trip. He keeps things moving.

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Counselors. We have two. **Donald L. Zieglar** was a wartime white-hat sailor who shinnied up the ratlines to Chief Exploration Geologist for S O Cal Western Operations, Inc. A prideful ascent. His B.S. came from the University of New Mexico in 1950 and his Ph.D. from Harvard in 1959. Hats off to ivy league. Jobs included USGS part time 1950 to 1953, then S.O. Cal 1953 to present. Don likes the philosophy of Robert Service:

- A little gain, a little pain, a laugh lest you may moan;
- A little blame, a little fame, a star gleam on a stone.

Ernest I. Rich, our other counselor, comes from Hobart, New York. He too attended the University of New Mexico and picked up a B.A. there. Continuing west to UCLA, he secured his M.A. Then he pushed north to Stanford, scooped up a Ph.D., snagged a job as Associate Professor of Geology, and settled down in the office of Associate Dean of the School of Earth Sciences. That's what you might call good planning. Ernie served as President of NCCS for the year 1971-1972 and is considered one of the cornerstones of our Society.

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Odds and Ends. When a man dies, he becomes a legend of sorts. Those who write his memorials extol his virtues, whether he had any or not. This often involves a type of creative writing. The writer feels holy, the survivors feel satisfied, and his friends, who have already forgotten him, don't feel anything because they are struggling with problems of food, rent, kids, transportation, sex, and constipation in about that order. • • The most happy marriage I can imagine ... would be the union of a deaf man to a blind woman. Nar Kotick –yeah! SAMUEL TAYLOR COLERIDGE



Continuing Education Course No. 19

"Petroleum Geology Lecture Series—I"

- February 20, 1975 (Thursday): "Basic Concepts of Structural Geology."
 Dr. John C. Crowel – Long Beach Elks Club No. 888, 4101 East Willow Street, Long Beach. Lecture: 3:30-5:00 p.m. and 7:00-8:30 p.m. Dinner at Elks Club (\$6.50): 5:30-6:45 p.m.
- February 27, 1975 (Thursday): "Working with Faults." Dr. John C. Crowel Long Beach Elks Club. Lecture: 3:30-5:00 p.m. and 7:00-8:30 p.m. Dinner at Elks Club (\$6.50): 5:30-6:45 p.m.
- March 6, 1975 (Thursday): "Tectonic Setting of California Oil Basins." Dr. John C. Crowel – Long Beach Petroleum Club, 3636 Linden Avenue, Long Beach. Lecture: 3:30-5:00 p.m. and 7:00-8:30 p.m. Dinner at Petroleum Club (\$5.50): 5:30-6:45 p.m.
- April 22, 1975 (Tuesday): "Sedimentary Environments and Occurrence of Oil and Gas." Hunter Yarborough – Long Beach Petroleum Club (Time and schedule to be announced).

Other lectures will be arranged if enrollment is sufficient.

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This series is presented by courtesy of the American Association of Petroleum Geologists and is from the AAPG Continuing Education Program of distinguished lecturers offered worldwide. Dr. John Crowell, Professor of Geology at U.C. Santa Barbara since 1967, received a Ph.D. in Geology from UCLA in 1947; was on UCLA geology faculty '47-'66, serving as chairman '57-'60; and is recognized authority on Southern California Tectonics. Hunter Yarborough, now Senior Geological Scientist with Exxon USA's exploration staff in Houston, has had 28 years of distinguished service with Humble and Exxon including area geologist, West Coast opera-tions '48-'52 and assistant chief geologist with Humble in Houston.

For information or late registration, call: Dick Aseltine (SPE Contin. Ed. Chmn.) 213/295-6365; Bruce Barron (Course Coordinator) 213/436-4254; Phil Patten (AAPG Contin. Ed. Chmn.) 213/380-5830.

Public Hearing—December 3, 1974 California Coastal Zone Conservation Commission ENERGY ELEMENT STATEMENT

The following statement was presented by Jack Cooper on behalf of the American Association of Petroleum Geologists, Pacific Section and the Coast Geologic Society.

SECTION 1, Finding 5, page 5 -

Need for Petroleum Will Affect Coastal Planning

You state that in the absence of a clearly defined role for California in a comprehensive national program for energy, that planning for petroleum related development can be based primarily on California needs and the needs of the other states in Defense District V.

It is our strong conviction that California adopt a national energy plan, that we need to face up to our moral obligation as a responsible member of the union. We should do everything we can to help the country overcome its energy deficiencies. It is felt that by pursuing a national commitment, we will also solve our local requirements.

SECTION V, Finding 70, page 127 -

California's Potentially Recoverable Petroleum Resources

Using your most optimistic statistics, you forecast 19.8 billion barrels recoverable oil from California onshore and 18.6 billion barrels from California offshore. These statistics include proven reserves, anticipated new reserves, and assume an improved average recovery efficiency, up 35 percent from 25 percent.

We believe your figures are reasonable for offshore, but are in error for onshore.

The following comments are offered:

1. Your statistics assume that improved recovery technology, namely tertiary recovery, will substantially improve present recovery. Tertiary recovery is still in an experimental stage of development and it is anticipated that it may take as much as five years before it is perfected. Also, we will be lucky if tertiary recovery is applicable to as much as 50 percent of California's production.

2. California's Division of Oil and Gas, in their report published in 1973, "Energy in California," figured that California has about 5.2 billion barrels of reserves proven, mostly onshore. New reserves anticipated are estimated at 30 billion barrels, with 24 billion coming from offshore and six billion from onshore.

In summary, it is believed that your statistics are in error concerning onshore, that the 19.8 billion-barrel figure is too high. We would agree with the California Division of Oil and Gas figures, using 11 billion barrels, rather than your 19.8 billion barrels.

It is of vital importance to resolve this problem because accurate forecasting of where California will obtain its petroleum supply will help determine your drilling priority.

FINDING 71, page 128 -

Location of Future Oil and Gas Production

You state that California's onshore resources are still very substantial while offshore California offers the least expensive option for rapid production of large volumes of oil. This statement implies that onshore California is the best place to supply our oil while offshore oil is mainly cheaper.

We believe that offshore is far away the best area to find new petroleum reserves, not onshore, for the following compelling reasons:

1. California onshore is an area that has been heavily explored and drilled by the oil industry since the turn of the century. The easy-to-find petroleum and many large fields have long since been located. The area has been so combed and worked over that the opportunity to find significant new petroleum reserves are deemed poor.

2. California offshore, in contrast to onshore, is a relatively unexplored and underdrilled petroleum province which offers a unique opportunity to find large volumes of new petroleum reserves. This area also offers promise of yielding large fields.

FINDING 77, page 134 –

Methods of Improving Petroleum Recovery

You state that secondary and tertiary production methods offer promise of increasing efficiency in recovering oil and gas. We concur. We would point out that the tertiary recovery technique is still in an experimental stage and probably will take up to five years to perfect. Also, we will be lucky if tertiary recovery will be effective in 50 percent of California production.

-Page 158, 24 ---

Exploration and Production Data Should Be Disclosed

You state that all exploratory and production data from surveys or drilling of wells shall be submitted within 60 days after finishing to the Division of Oil and Gas, and be made public information one year after submittal. This data is the lifeblood of petroleum exploration and is the stuff from which new ideas come and drillable prospects are born. Premature release to the public will stifle the incentive of explorationists. Who wants to labor long and hard to come up with a new idea only to see it given away before he has had time to realize the fruits of his labors? Who wants to see the tools of his trade taken from him without just compensation in either money or goods of equal value?

The wording in lines 6 through 9 of vour recommended statewide policy is not clear. The wording recommended by the South Central Commission makes it clear that the surveys mentioned are from wells drilled, and limits the data release to state and federal lands and to public agencies with a need for the data. This wording will serve the public and industry better than the original language. We recommend only that a clause be added stating that this data shall be kept confidential by the public agencies until release to the public is authorized.

A committee of the California State Division of Mines and Geology which is studying data release has conducted a statewide poll of majors and independent operators. A large majority favors some type of release of certain data after a period of two years. No interpretative data should be released, only raw data.

No data should be released if such release gives another company, person, or agency an unfair competitive advantage. For example, it would be unfair to ask an operator to make public all the data on an exploratory prospect before he has finished evaluating it. Many prospects require more than one well and take several years to evaluate. We feel that premature release of data under circumstances similar to this example would harm the operator by giving his competitors free data which they might use to lease part of the prospect.

We recommend the following:

1. Two years after a well is completed, the Induction-Electric Log or Radio-Activity Log, the well history, and well cuttings be released to the public. However, if an operator still retains the lease, and wishes to drill additional wells, but is unable to drill for reasons beyond his control, he can withhold the above data until the restrictions are removed and he has completed his drilling program.

2. Seismic maps and surveys are highly interpretative and it is strongly felt that they are proprietory company information and therefore, should not be released.

GEOLOGIC REVIEW...

(from page 2)

serve the energy needs of the oil-importing world, and thus I shall expect something in return."

Oil in its new role was used mainly as a sanction against those opposing the producing countries' national goals and aspirations and also as a means of granting preferential treatment to friendly nations. The action very clearly brought home to everyone (including those producing countries that did not take part in this action) how effective a leverage, short of force, oil can provide in obtaining national goals.

The lecture discusses the impact and implications of this action for both the producing and consuming countries: whether or not the producing countries will use oil again in the same manner; whether or not the consuming countries will be ready and able to accept it; and whether or not oil ever will be liberated from politics and play only its traditional role as the earner of funds.

U.C. SANTA CRUZ— SYMPOSIUM

An informal symposium entitled Deposition and Diagenesis of Diatomaceous Sediments will be held at the University of California, Santa Cruz on Saturday, March 8, 1975. This meeting will convene at 10:00 a.m. in Room 165 of the Applied Sciences Building, UCSC and continue, with a break for lunch, until mid-afternoon. Scheduled talks are:

Morning

- "Modern Settings for Deposition of Laminated Diatomaceous Sediments and Phosphorites." – A. Soutar, Scripps Institution of Oceanography.
- "Distribution of Neogene Diatomaceous Sediments in the Circum-Pacific Region." — J. Ingle, Stanford University.

Afternoon

- "Diagenesis of Marine Siliceous Shales in the Monterey Formation, California." - K. J. Murata, U.S. Geological Survey, Menlo Park.
 "The Chemistry of Siliceous Oozes"."
- "The Chemistry of Siliceous Oozes aond Its Effect on Diagenesis." – M. Kastner, Scripps Institution of Oceanography.

Those wishing to attend are asked to contact R. E. Garrison, Earth Sciences Board, UCSC, Santa Cruz, CA 95064, for further details.





Efforts of the Coast Geological Society to attract students to monthly meetings met with success on November 19, when 10 students attended under our new dinership program.

The society greatly appreciates contributions made by the following members for this purpose:

Ralph Cahill, Argo Petroleum Corporation

Kermit Giddens, Borst & Giddens Oilwell Logging Service

Ed Hall, Union Oil Company of California

John Curran, Consultant

B. A. Ogle, Merrill, Ogle, Babson

& Wallis, Inc., Consultants

Six dinerships have been paid in advance for the January 28 meeting thanks to the generosity of Dave Williams of Santa Barbara City College and Tom Williams of Petrolog Oilwell Logging Service.

If you are a student, or know of students who wish to attend our meetings, but cannot do so because of the cost, please tell one of the reservation girls listed above, or call Ed Hall, Coast Geological Society president, 805-525-3112.

Jack Cooper attended a public hearing on December 3, 1974, in San Francisco on the Energy Element of the California Coastal Zone Commission plan. He did a fine job with a 10minute presentation before an audience of 300-400 people. He distributed 12 copies of his statement to members of the commission.

Elmo Adams also made a statement on the exploration portion of the Energy Element in behalf of the AIPG.

I feel that the most critical item affecting our work as geologists is the proposed disclosure of exploration and production data. If this becomes law in the form recommended by the commission, it will create havoc within our industry. I am amazed that so few of us appear to be concerned at this proposed invasion of our rights, which would set a precedent for the remainder of the state. It is likely that we will have a half-baked proposal such as this one rammed down our throats unless we can quickly come up with a sensible alternative which is acceptable to both industry and government.

Please contact me, 805-525-3112, if you wish a copy of Jack's testimony, or pick one up at the meeting. EDWARD A. HALL President

Sacramento

During the last quarter of 1974 several activities are worth mentioning before moving into the new year. On Friday, September 27, the Northern California Chapter of API held its Annual Golf Tournament and Barbecue at the Yolo Flyers Club in Woodland. Although inflation had increased the costs for the event, it didn't appear to discourage the more than 100 in attendance. Following dinner, Fred Harris, Western Mud, acted as MC for the drawing of the door prizes, and again did a tremendous job. Thanks to the API officers, committee members, and service companies which made the event possible.

Tuesday, November 19, API members and guests gathered at the El Rancho Hotel–West Sacramento, for cocktails and dinner meeting. Speaker for the evening was Mr. Les Stanley, Armco Steel Co., and his topic of discussion was "The Supply Outlook for Oil Field Tubular Goods and Drill Pipe." The topic was particularly appropriate since many of the operators in the Sacramento Valley are experiencing difficulty in obtaining the steel goods necessary for operation. It appears as though this "difficulty" will continue to plague the industry for some time.

The Sacramento Petroleum Association initiated the new year on an encouraging note with Dow Chemical Company representatives speaking before the Wednesday luncheon on January 15, 1975. Mr. Emmett Hyde, Materials Flow and Purchasing Manager, and Mr. Roland Bussell, Pipeline Operations Manager, were guest speakers and updated a talk given in mid-1973 as to the present pipeline status, purchasing practices, and future outlook and development for the system. The talk was timely with the present high rate of exploratory activity in the Sacramento Valley and indicated price increase in July.

The API will hold its first dinner meeting of 1975 at the Point Restaurant in Rio Vista. Speaker for the evening will be Mr. Carl H. Savit, Senior Vice President, Technology, Western Geophysical Co.; his topic being "Bright Spot in the Energy Picture."

Friends and associates were saddened to hear of the recent death of Hector Hollis in January of this year. Hector was with Midway Fishing Tool Co. in Woodland.

TERRY PLUMB

PAGE 6



Having served as Project Manager of the Navy's exploration for oil on NPR 4 on the Arctic slope of Alaska for three years, I take issue with Frank Morgan's letter in the fall P.P.G. NEWSLETTER.

He stated that the "U.S. Government could not find commercial oil or gas," although it spent \$100 million in geology and drilling. He implied it was a complete waste of government money. The \$100 million is somewhat of an exaggeration, but the real error of his statement was that the project was a complete failure and a waste of money.

The Umiat field (13 wells) has a reserve variously estimated at 40 million to 120 million barrels of 36° gravity oil at depths of less than 1500 feet and individual well capacities of up to 500 barrels.

Two wells were drilled on the Gubik anticline proving a large reserve of gas above 3600 feet.

The Barrow gas field, though small, provides fuel for our distant warning base and for the native village of Barrow.

The Simpson field has demonstrated commercial production as depths of about 200 feet.

But the value of the project cannot be judged solely on its discoveries. It provided a large amount of basic geologic data, indicating where, and where not, to drill; and how to operate in the Arctic. And perhaps most important, its studies, carried out by an excellent staff of dedicated geologists of the USGS, supported by our project, pointed definitely to the Prudhoe Bay area as the most promising prospect for oil. (Since it was not in the Reserve we couldn't drill it.)

The broad, general, geologic knowledge gained and made available to all operators by USGS certainly gave them a running start in their operations and saved them a considerable amount of money.

It was not Navy policy to seek publicity so the results of their exploration are not generally known.

Perhaps the Colonel in charge of the infantry base at Big Delta was our best booster. His project was to study the conduct of military operations in the Arctic. He was especially interested in our transportation, communications and related subjects and had observers on some of our operations.

He characterized our project as "the most productive use of government money" he had ever seen.

Yours truly,

EUGENE L. DAVIS 12

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I have enjoyed my tenure as Chairman of the Publications Commiteee since I took office in mid-1969. Effective October 1, 1974, Carl Evans of Texaco will be replacing me.

As many of you know, the Pacific Section runs on volunteers. The Publications Committee is no different. During my tenure I have had the invaluable assistance of many. To these people I give my thanks – Doug Trax-ler, Tom Wright, Paul Siernon, Bob Hacker . . . the list goes on and on.

Whatever success the Publications Committee has had is due to those volunteers that have always been available when needed. Carl will need similar help, which I am sure will be available.

My sincere thanks to all of you,

DON HALLINGER

CHANGE OF ADDRESS

David L. Paffett, formerly Manager of Geology for General Crude Oil, is now Domestic Exploration Manager for

Ashland Exploration Co. P.O. Box 1503 Houston, Texas 77001

Horace E. Harrington has recently retired from the Superior Oil Company. His new address is:

> 1135 Dixon Drive Prescott, Arizona 86301

WANTED

Back issues of AAPG Bulletins. Many young geologists have expressed a desire to obtain more complete sets of AAPG Bulletins. Back issues may be donated to the Pacific Section AAPG editorial staff and we will find them a good home.

JOHN LIDSTROM, Editor



NEWSLETTER Pacific Section A.A.P.G. P.O. Box 17486 Foy Station Los Angeles, California 90017

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MARCH, 1975

NUMBER 3

PACIFIC SECTION AAPG-SEPM-SEG 50th ANNUAL MEETING

Wednesday, April 23-

- 3:00 p.m.–Registration, Queen Mary, Deck R
- 6:30 p.m.–Ice Breaker Get-together Cocktail Party, Queen Mary, Grand Salon

Thursday, April 24-

- 8:00 a.m.-Registration, Queen Mary, R Deck
- 9:00 a.m.–AAPG SEPM SEG Joint Technical Session. Keynote Speaker, V. E. McKelvey, USGS Director
- 9:00 a.m.-Ladies' Continental Breakfast
- 12:30 p.m.--Joint AAPG-SEPM-SEG Luncheon. Speaker, Dr. Edward Teller
- 12:30 p.m.–Ladies' Luncheon-Fashion Show
- 2:30 p.m.-AAPG-SEPM-SEG Technical Programs
- 3:30 p.m.–Ladies' optional visit to Ports of Call in San Pedro
- 7:30 p.m. SEPM Dinner Meeting, Kings Grille, Queen Mary. Speaker, Mr. Beckfold

Friday, April 25-

- 8:00 a.m.-Registration, Queen Mary, R Deck
- 9:00 a.m.-AAPG-SEPM-SEG Technical Programs
- 9:30 a.m.–Ladies' Tour of Busch Gardens, San Fernando Valley
- 12:30 p.m. Alumni Luncheons, B Deck
- 2:30 p.m.-AAPG-SEPM-SEG Technical Programs
- 5:00 p.m. AAPG Annual Business Meeting
- 6:00 p.m.-Convention No-host Cocktail Party
- 7:30 p.m.-Bon Voyage Dinner-Dance

Saturday, April 26-

6:30 a.m.–Field Trip to East Side Los Angeles Basin, Whittier Fault Trace

INDEPENDENT/MAJOR ROLES IN EXPLORATION FOR OIL AND GAS

Since 1969, the independent segment of the petroleum industry has drilled about nine out of every 10 New Field Wildcat wells in the United States. Significant exploratory successes during this same period were about two percent, or about one out of every 50 wells drilled.

Independents made 75 percent of the New Field Wildcat discoveries; however, to obtain a complete picture of exploration during this time period, the results must be measured in the light of reserve additions. Their 75 percent discovery rate of New Field Wildcats yielded slightly more than one-half of the oil and gas reserves found in the United States during the past five years. The majors with only 25 percent of all successful New Field Wildcats discovered slightly less than one-half of the oil and gas reserves. This does not include all of the large reserves found by majors at Prudhoe Bau. Most of the majors' exploration occurred in the high-cost and highrisk environments of offshore Arctic and ultra-deep inland drilling where the average discovery size has been substantially larger.

It is clear that both independents' and majors' efforts are vital in oil and gas exploration. Each segment contributes approximately equal shares of reserves discovered while exploring in somewhat different environments of risk and costs. Thus, legislative discrimination against either segment will ultimately harm the entire industry and the consumer. To begin to meet national goals of greater selfsufficiency requires maximizing oil and gas exploration and discoveries. This can best be accomplished by the petroleum industry (which is both independents and majors) as a whole, and not by individual segments.

THE PRESIDENT'S CORNER:

My term of office is about half finished, and so I think it is appropriate that I share a few thoughts and observations with all of you.

When I assumed office, I set forth certain goals that I wanted to achieve. Among these were: (1) visiting all of the Affiliated Societies; (2) Improving communications with other professional groups; (3) Increasing student participation; (4) Attempting to slow down or reverse the downward trend in membership; (5) Better coordination of Distinguished Lecturers and other visiting speakers between the various local groups, and (6) Formation of a Speakers' Bureau.

Looking back on the list, I can see that I am going to have to "move my tail for you" for the remainder of my term. I have visited the Coast Geological Society, and plan to get up to Bakersfield soon. However, work load and lack of funds will probably prevent my visiting the rest of the groups. I hope to get a chance to visit with many of the other members aboard the Queen Mary in April.

Bob Hindle (Sun Oil, Newhall), is the new membership chairman, and he has already started moving on plans to increase our membership. Remember, it is *not* necessary to be a member of the National AAPG in order to belong to the Pacific Section.

Under item (5), I did coordinate Hunter Yarboroughs' visit to the L.A. Basin and Coast groups, and assisted in the upcoming SPE-AAPG lecture series given by Dr. Crowel.

I have not formed a speakers' bureau as such, but the Pacific Section is going to make a presentation at the upcoming BLM hearing on February 6-8 in Beverly Hills. We are scheduled for Friday afternoon, and the panel will consist of John Minch, Frank Parker, John Curran, and Clarence Allen. I feel very strongly about the need for adequate input into pub-(continued on page 3)

OFFSHORE ENVIRONMENTAL WORKSHOP AT THE LONG BEACH CONVENTION

Geologists attending the Pacific Section convention at Long Beach are invited to participate in a Workshop on Coastal and Offshore Environmental Geology, organized by the AAPG's Environmental Geology Committee.

The workshop will provide presen-tations and informal dialogue be-tween representatives of government, environmental groups, industry and the geological profession. Its aim is twofold: 1) to clarify the means by which environmental qualities can be maintained while essential energy development proceeds; and 2) to assist the geological profession, acting through local geological societies, in providing government agencies and the public with much-needed guidance on geologic hazards and energy development. Agencies invited to participate include the Environmental Protection Agency, Bureau of Land Management, USGS, and California's Coast Commission, Division of Oil and Gas, State Lands Commission, Division of Mines and Geology, and Energy Resources Conservation and Development Commission.

The workshop will be held on the Queen Mary on the afternoon preceding the technical sessions, Wednesday, April 23rd from 1:15 to 5:00 p.m. Those interested in participating should obtain details, pre-registration, and a workshop data package from the workshop chairman: T. L. Wright, P.O. Bøx 3069, San Francisco, CA 94119, or phone (415) 894-0725.

AAPG PACIFIC SECTION EXECUTIVE COMMITTEE MEETING - JANUARY 21, 1975 Secretarial Abstract

Meeting of January 21, 1975. Section cash on hand \$21,101.65. Section budget not balanced, can achieve balance with increased membership, reduced budget, higher convention fees, etc. AAPG panel will address BLM on February 6 on OCS Federal sale merits. 1975 Convention materials are ready for mailout, but final registration costs not yet set. Check on guidebook insurance and central housing. 1976 Convention scheduled April 21-24 at Golden Gate Inn, San Francisco, to be chaired by R. C. Blaisdell. Membership directory preparation is on schedule. Executive Committee approved funding for Hunter to AAPG National. Spring Picnic needs to be chaired and programmed.

PROFITABILITY OF SELECTED MAJOR OIL COMPANY OPERATIONS

The Senate Finance Committee has released a document entitled "Profitability of Selected Major Oil Company Operations," a comprehensive compilation and analysis of the profitability of operations of 10 selected major integrated oil companies. The document is based on material submitted by these companies in response to a Committee questionnaire. À complete understanding of oil industry profits is essential in order to determine industry ability to generate the capital which will be required if the industry is to perform its role in Project Independence, and so that the Congress can make an informed judgment as to the kind of tax structure appropriate to the petroleum industry.

The 10 selected companies, which hold about 75 percent of the assets of integrated oil companies in the United States, are Exxon, Texaco, Mobil, Gulf, Standard of California, Stand-ard of Indiana, Shell, Phillips, Sun, and Standard of Ohio. The analysis being released today covers rates of return on shareholders' investment, net income, and overall effective tax rates for these companies for the years 1964-1973, and for the first time sets forth each company's profits on U.S. operations. For example, the study shows that on U.S. operations for 1973 the weighted average rate of return was 11.3% while on foreign operations it was 20.4%. This compares with the weighted return of approxmiately 12.8% realized by all U.S. manufacturing companies for 1973, based on the figures reported in the Quarterly Financial Report of the Federal Trade Commission for the fourth quarter of 1973.

This analysis confirms earlier testimony that oil company profits on U.S. operations for 1973 were less than the national average for all manufacturing companies, and that the principal source of the increase in oil company profits for 1973 was the increase in profits from foreign operations.

The analysis also indicates that in 1973 the 10 selected companies paid an effective tax rate on their U.S. operations, including Federal, State and local taxes, other than excise taxes, of 42.9%.

This analysis released today is a part of the Committee's continuing study of oil companies' profitability, beginning with Committee hearings held in January and February 1974, and which includes a compilation of data released by the Committee on February 12, 1974. These reports released on February 12, 1974 and today were derived from data submitted at the hearings and from reports issued by the Department of Com-merce, the Federal Trade Commission, the Securities and Exchange Commission, the First National City Bank of New York and from the responses of oil companies to a Committee questionnaire. The analysis released today was prepared with the assistance of the Economics Division of the Congressional Research Service, a part of the Library of Congress. This analysis, which must be up-dated to include the results of 1974 oil company operations as they become available, will be of considerable assistance to the Committee when it considers tax legislation affecting the petroleum industry.

Copies of the report are available in the Senate Finance Committee, Room 2227, Dirksen Senate Office Building. Written requests should be accompanied by a return address label.



Coast Geological Society THURSDAY* --- WEEKLY LUNCHEON --- 1975

JOHNS at the BEACH 1140 S. Seaward Ventura (643-6851)	RED ONION Ventura (648-5219)	PIZZA PALACE 2632 E. Main Ventura (648-2593)	HONG KONG INN 165 S. California St. Ventura (648-3161)
February 6	February 13	February 20	February 27
March 6	March 13	March 20	March 27
April 3	April 10	April 17	April 3
May 1	May 8	May 15	May 22

THE PRESIDENT'S CORNER ...

(from page 1)

lic hearings of this sort. The opposition is very well organized, but hopefully we can put some professional and scientific knowledge into an area that has been dominated by emotionalism and hysteria, and sadly lacking in common sense and logic. It is quite obvious that the news media has not been completely unbiased in its reporting concerning the energy problem, but I suspect that this may be partly due to lack of adequate input by our profession. For the protection of our jobs, and the good of the country, it is necessary for all of us to "tell it like it is" at every opportunity.

The plans for the Convention are proceeding smoothly, thanks to the efficient crew picked by Bruce Barron. Everyone should have received a flyer with an outline of events and a housing reservation form. I would advise all those of you planning on staying aboard the *Queen Mary* to get in your name early. There are only 300 rooms available, and it is strictly a first comefirst served basis. See all of you aboard in April!

W. J. HUNTER

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Executive Committee				
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Vice-rresulent				
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NATIONAL AAPG

With the accent on North American exploration, the American Association of Petroleum Geologists and The Society of Economic Paleontologists and Mineralogists meet in Dallas, Texas, April 7-9 to intensify the search for petroleum and alternate energy sources.

Senator James Buckley of New York will address the all-convention luncheon (Tuesday) April 8 in the midst of the societies' 34 technical and general sessions to be conducted over the three-day period in Dallas Convention Center. Over 200 technical papers will be presented.

Some 4,500 geologists and wives are expected for the combined annual meeting, 60th for the AAPG and 49th for the SEPM. Theme of the convention is "Frontiers of Exploration" and the host organizations are Dallas Geological Society and the Southwest Section of the AAPG.

Four pre-convention field trips include: 1) Delaware Basin – deepwater carbonates exposed in Sacramento and Guadalupe Mountains (2-½ days); 2) Ouachita Mountains-sedimentology and sedimentary structures (2 days); 3) North Central Texas – Late Pennsylvanian self sediments (2 days); and 4) Arbuckle Mountains-regional geology (2 days). A post-convention trip on Thursday, April 10, concerns Central Texas – Edwards (Lower Cretaceous) reef complex and associated sedimentation (1 day only).

Merrill W. Haas of Exxon Co., U.S.A., Houston is president of the American Association of Petroleum Geologists; Gerald M. Friedman of Rensselaer Polytechnic Institute, Troy, New York, heads The Society of Economic Paleontologists and Mineralogists. Robert J. Cordell, Sun Oil Co., Richardson, Tex., is general chairman of the convention.

One social highlight is an "International Wine Tasting-Gourmet Festival" at North Park Inn Convention Center, Tuesday evening (April 8) featuring a quintet of French, Italian, German, Spanish and American-inspired buffet cocktail parties, with live entertainment at each juncture.

"Special treats for the woman of today," as described in the pre-convention program, will include a barbecue feast and special entertainment at Circle T. Ranch; a tour of Fort Worth's Kimbell Art Museum and Amon Carter Museum of Western Art; and a luncheon seminar on "Indian and Spanish Heritage in the Southwest" at the Everette L. DeGolyer home in Dallas.

Convention activity hubs will include the Employment Interviews Center in Dallas Convention Center and a host of alumni functions at various Dallas hotels. Technical and educational exhibits, in the Arena of Dallas Convention Center, will be open 8:30 a.m. - 5:00 p.m. Monday and Tuesday (April 7-8) and 8:30-2:30 p.m. Wednesday (April 9).

Convention information and hotel forms are available from the American Association of Petroleum Geologists, P.O. Box 979, Tulsa, Oklahoma 74101.



The San Joaquin Geological Society conducted a very successful short course on Friday and Saturday, February 21 and 22. The title was, "Current Concepts of Depositional Systems with Applications for Petroleum Geology." The course was put together by Don Wm. Reynolds, Continuing Education Chairman, and Ron Murk, Short Course Chairman. Wm. R. Dickinson was Convenor and Lecturer with Lecturers: Robert Garrison, James Ingle and Hans Nelson. The Course was accompanied by a publication of notes covering 110 pages. Over 180 industry people, students and academicians attended.

This is the second annual short course by the SJGS. A third is planned for 1976 at about the same time. Tentative title is, "Geologic History of California and its Environs and the Relationship to Oil and Gas Exploration." Ron Murk is now looking for a convenor. The Society wishes to keep the courses going, feeling that this is one of our best ways to bring so many people together and to add our bit to the "effort."

The publications from both courses are for sale through the Pacific Section AAPG Publications Committee, at \$6.00 per copy. Because of high publication costs, this is an increase of \$1.00 over published prices.

The audio tapes of "Geologic Interpretations from Global Tectonics with Applications for California Geology and Petroleum Exploration," plus the video tapes of this year's course will soon be available on a rental basis.

DON WM. REYNOLDS

Pacific Section CANDIDATES

For President

WESLEY G. BRUER Consultant

Wesley graduated from Oregon State University in 1949 and holds a B.S. degree in geology. He is a pastpresident of the San Joaquin Geolog-ical Society, was the first vice-pres-ident of the California Section of the American Institute of Professional Geologists, and is a member of the American Institute Mining Metallurgical and Petroleum Engineers - Society of Mining Engineers, the American Association of Petroleum Geologists, the Sacramento Geological Society and the Sacramento Petro-leum Association. On December 17, 1969, Wes was appointed State Geol-ogist and Chief of the California Division of Mines and Geology. He resigned as Chief of the Division of Mines and Geology on October 30, 1973, and is currently a consulting geologist.

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For President



DONALD L. ZIEGLAR Standard Oil Co. of California

Don attended the University of New Mexico and then Harvard, receiving his Ph.D. in 1959. In 1953, he became a petroleum geologist for the California Co., and presently is Chief Exploration Geologist for Standard, In 1958 he was editor of the Billings Geological Society 9th Annual Field Conference Guidebook and since 1972 has been a member of the AAPC House of Delegates.

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For President Elect



EUGENE F. (BUD) REID Consultant

Bud attended Stanford University and received his M.S. in Geology in 1952. From 1952-56 he worked as geologist and exploitation engineer for Shell Oil Co., Ventura. From 1956-1959 Bud was Vice President and Geologist for Gene Reid Drilling, Inc., Bakersfield, California. From 1959-1971 – Occidental Petroleum Corp., Exploration Manager to Executive Vice President. Bud is a member of the AAPG and API and is currently Treasurer of the San Joaquin Geological Society. He is President, Sunburst Exploration, Inc., Bakersfield, California and Denver, Colorado.

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For President Elect



STANFORD ESCHNER Occidental Oil Co.

Stan is a UCLA grad, and worked for the Corps of Engineers and Shell Oil before joining Oxy in 1961. Currently, he is Manager of N. American Exploration and served the Pacific Section as Chairman of the Constitution and Bylaws Committee. He has also served as Field Trip Chairman of the Spring, 1969 Convention and Site Coordinator for the 1972 Annual Meeting. Stan's paper on the Sawtelle Field won "Best Paper Award" at the 1972 Annual Meeting, and was also given at last year's National Convention.

Stan is currently Secretary for the Pacific Section AAPG.

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For Vice-President

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ROBERT J. HINDLE Sun Oil Company

Bob graduated from UCLA in 1948 with a B.A. in Geology. He joined Sun Oil Company (Barnsdall) upon graduation and is currently their District Development Geologist. AAPG activity: AAPG, Active Member, National and Pacific Section; Field Trip Chairman, AAPG, Newhall area, 1965; District Representative, AAPG National, 1968-69; Co-chairman, Program Committee, Pacific Section Convention, 1969; Treasurer, Coast Geologic Society, 1971; President, Coast Geologic Society, 1972; Member of National AAPG, House of Delegates, 1973-75; Membership Chairman, Pacific Section, 1974-75.

PALEOGENE SYMPOSIUM

The Paleogene Symposium and Selected Technical Papers from the 1975 Annual Conference on Future Energy Horizons of the Pacific Coast held in Long Beach will be available at the registration desk at the Convention.

This will be your only opportunity to add this 600 page publication to your library at cost.

For Vice-President



BRUCE M. BARRON Oilwell Research

Bruce joined the industry following graduation from UCLA in 1953, and has been an active member of the AAPG since 1955. Serving on various committees for almost 20 years, he was Program Editor for the 1974 San Diego Convention and is Convention General Chairman for the upcoming Long Beach Convention.

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For Secretary



LOUIS O. HEINTZ Consultant

Louis received a B.A. in Geology from UCLA in 1945, an M.S. in Geology from USC in 1966, and an M.A. in Education Supervision from CSULA in 1969. He worked for Pacific Western Oil Co., Union Pacific Railroad Co., and St. Anthony Oil and Uranium Company before becoming managing partner for L. O. Heintz & Associates in 1956. Louis is an active member of AAPG, GSA, API and many other professional societies. He is the past president of the Los Angeles Basin Geological Society.

For Secretary

DENNIS R. ALLEN City of Long Beach

Dennis received his B.S. in Geology from Louisiana State University in 1950. He spent three and one-half years in Seismic Oil Exploration; five years as Oil and Gas Engineer, State of California, and 16 years with the city of Long Beach as Geologist, Principal Geologist and currently, Subsidence Control Engineer (includes various aspects of environmental control and pollution). He has 19 published papers on Oil Field Geology, Engineering, Subsidence, Well Logging and Environment; contributor of the Encyclopedia of Science and Technology, 1971 (Italian); contributor to Textbook (in press). Dennis has been chairman of the Legislative Committee, Pacific Section AAPG, for two and one-half years.

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For Treasurer



G. C. (BUTCH) BROWN Union Oil Company

Butch received his B.A. in Geology from USC in 1951. Upon graduation he joined Union Oil Company as a paleontologist in Orcutt, California. He is presently Regional Paleontologist at Santa Fe Springs. Butch has been active in the AAPG throughout the country. He is presently a member of the House of Delegates for National AAPG.



NO REPORT.

For Treasurer



HOWARD E. STARK Consultant

Howard reecived his B.A. in Geology from Pomona College in 1948 and his M.A. in Geology from Claremont Graduate School in 1949. He worked for Shell Oil Company, Richfield Oil Corp., Atlantic Richfield Co. and Argo Petroleum Corp. From 1974 to the present he has been a consulting geologist. Howard was Pacific Section NEWSLETTER Editor in 1962, District Representative 1965-1966, and President, Coast Geological Society, 1969-1970.



"He had drifted into the habit of winding up every meal by taking out his false teeth and hurling them at his wife." — Sir Arthur Conan Doyle in A CASE OF IDENTITY.

Hello Down There. We have been reading the geological experts and we understand that you good people in Los Angeles are on your way north via the San Andreas boulevard, moving a little closer to San Francisco every day. Well, come on up. We'll be glad to welcome our brothers from Smogville. There's lots of good clean air up here for everybody.

We are still a proud people although our Mayor Alioto tells us that about a third of the population is on welfare or social security. So when you arrive, don't expect us to throw a big feed for you with barbecued steaks and liquor. You'll be lucky to get yogurt and Calso water.

There's free parking for you just (continued on page 6)

PAGE 8

SPE REGIONAL MEETING ... (from page 7)

pursued will be both a surprise and of interest to everyone.

The traditional Dinner-Dance will be held Friday evening at the Holiday Inn. Dancing will be to the music of Irv Johnson Sextet. Other entertainment will be provided.

In making your plans for attending, don't forget your wife. She will enjoy the Welcoming Luncheon and Dinner-Dance as well as the special ladies' activities which are planned.

We strongly urge you to complete and return the pre-registration form by March 20, 1975. This will permit us to plan more effectively and be a time-saver for you upon arrival.

We are anticipating a large turnout for this meeting and are looking forward to seeing you in Ventura on April 3rd and 4th.

W. J. LOVINGFOSS General Chairman



The following slate of officers has been nominated to serve for one year, beginning the 1st of July, 1975:

President Ralph Cahill Argo Petroleum

Vice President Jack Knight Norris Oil Co._____

Nominations from the floor will be accepted at the March 18, and May meetings, provided that the nominee

NEWSLETTER

Pacific Section A.A.P.G. P.O. Box 17486 Foy Station Los Angeles, California 90017 is in agreement. If you would like to volunteer to run for office, simply contact any present officer. We will vote at the May meeting, and changing of the guard will be at the June meeting. There will be no April meeting because of the AAPG Pacific Section convention on the Queen Mary in Long Beach, April 23-26, 1975.

I will need to secure a volunteer to act as general chairman for our fall barbecue. The chairman need not necessarily be chef, but we would like to know of possible chef-type volunteers at this time. Charlie Lee, our chef in the past, has left behind a four-page set of instructions, so this task should be easy. It has also been proposed by Bill Merrill that we have a spring barbecue on the beach at Santa Barbara; I'll need a chairman for that function also, if enough are interested.

In addition, I would like a volunteer for Continuing Education Chairman. If someone will step forward at the March meeting, we will attempt to organize at least a three- to sixhour course in late May or June. EDWARD A. HALL

Pacific Section Meeting

April 23-24-25, 1975

Keynote: "The World Crisis," Dr. Vincent McKelvey or Hunter Yarborough. **Theme:** "Future Energy Horizons on the Pacific Coast," Hunter Yarborough or Dr. Vincent McKelvey.

A.M.—April 24—

The Need: How our energy is used - the part played by hydrocarbons -water - food -- medicines -- electricity – heat – gasoline. Which do we want to do without? – Stanley Karp.

The Status: USGS estimates of Pacific Coast (OCS) potential reserves, the role of the USGS.

P.M.—April 24—

The Search:

- 1) Who is going to find it? Independents? - Fred Stead.
- 2) The historic role of our academic sector and the present status of Academic research.—John Crowell —Donn Gorsline.
- Company research new thinking in geology and geophysics. – John McCall, VP Chevron Research.
- 4) The role of superdeep drilling.
- 5) The role of the far offshore, Geology of the OCS. – Vedder, Taylor, Beyer, Moore.
- 6) The Santa Inez Unit Problems Geological, Political, Environmental, Economic.
- Economics the price effort discovery curve for gas and oil. – Jerry Sonosky, VP, UC Bank.

April 25—Alternates—

- 1) Secondary and Tertiary recovery. – Gardner Pittman.
- Shale Oil surface mining shaft mining – in situ production. – Jim Cloninger, Union Oil.
- 3) The fallacies of conservation. Willis Wood, S. Cal. Gas Co.
- 4) Coal. Mel Swinney, S. Cal. Edison.
- 5) Geothermal Energy. Clint Dahlstrom, VP, Chevron Resources.
- 6) Nuclear Energy. Sig Muessig, Getty.
- Exotic Sources and Summary. John E. Kilkenny, President Elect National AAPG.

THOMAS A. BALDWIN Program Chairman

PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section American Association of Petroleum Geologists

VOLUME 29

APRIL/MAY/JUNE, 1975

NUMBER 4/5/6

NATIONAL AAPG

Plans for the erection of a threequarter million AAPG Foundation facility in Tulsa were announced recently by the board of trustees of the American Association of Petroleum Geologists Foundation. The trustees of the Foundation are Dean A. McGee, Kerr-McGee Corp., Oklahoma City, W. Dow Hamm, Dallas consulting geologist and retired executive vice president of ARCO, and Morgan J. Davis, Sr., Houston consulting geol-ogist and retired chairman of the board of Humble Oil (now Exxon Co., USA).

The new building, to be known as the Lewis G. Weeks Energy Resources Center, will augment the existing facilities of the AAPG located at 15th and Boulder in Tulsa. The AAPG is the world's largest geological organization with almost 17,000 members in all 50 states and 80 foreign countries. It has been headquartered in Tulsa since its founding in 1917. The AAPG Foundation was formed to provide support for the scientific and educational activities of the Association.

The Foundation facility will be built with a gift from Dr. Lewis G. Weeks, world-renowned geologist, who is chairman of the board of Weeks Natural Resources, Ltd., and retired chief geologist of Standard Oil Co., N.J. (now Exxon). Weeks was born in Chilton, Wis-consin, in 1893 and was graduated

from the University of Wisconsin. He has been awarded honorary Doctor of Science degrees by Wisconsin and Texas Tech, and served as president of AAPG in 1959, receiving its highest honor, the Sidney Powers Me-morial Medal, in 1962.

Weeks began his geology career in copper mining in Mexico and Ari-zona immediately after graduation from the University of Wisconsin in 1917. Following service as a U.S. Navy aviation instructor during World War I and graduate work and an instructorship at Cornell University, he (continued on page 2)



UP APRIL 21-22-23, 1976

at the HOLIDAY GATEWAY INN. San Francisco. The convention theme will be: "Tomorrow's Oil from Today's Provinces." The SEPM theme will be: "The Neogene."

First call for papers. Please submit tentative titles now, and preliminary abstracts by November 15th to the following PROGRAM CHAIRMEN:

AAPG Papers-

Gordon Oakeshott 3040 Tottendell Street Oakland, CA 94611

SEPM Papers—

Keith Berry Standard Óil of Calif., WOI Box 3862 San Francisco, CA 94119 Phone (415) 894-2930

SEG Papers-Reg Neale Chevron Overseas Pet. Inc. 555 Market Street San Francisco, CA 94105 Phone (415) 894-5304

- Host: Northern California Geological Society
- General Chairman Bob Blaisdell S.O. Cal., Box 3862, SF 94119
- General Vice Chmn. John Osmond PG&E, 245 Market St., SF 94106
- Site Coordinator Dave Gerkel 810 Gonzalez Dr., SF 94132
- Ops. Coordinator Robert Carter USGS, 345 Middlefield Rd. Menlo Park, CA 94025
- Tech. Prog. Coordinator .. Rod Huppi Chevron O'seas Pet. 555 Market St., SF 94105

OTT KOTICK

THE BRANNER GEOLOGICAL CLUB

"In response to invitations circulated by Mr. Ralph Arnold and Mr. William W. S. Kew, an informal meeting of geologists was held on July 29, 1921, at the Gingham Dog and Calico Cat Restaurant. A motion was made and unanimously adopted to form the Branner Geological Club of Southern California to promote good fellowship among geologists and foster the study of geology and cooperation with kindred scientific associations in Southern California." (Original minutes.)

"Mr. Ralph Arnold was elected President and the following men were unanimously elected Honorary Members in recognition of distinguished contribution to science.

Dr. J. C. Branner–Stanford University Dr. J. P. Smith-Stanford University

Prof. J. C. Merriam–Carnegie Insti-tute, Washington, D.C.
Prof. A. C. Lawson–University of Cal-

ifornia" (Original minutes.)

After a lapse of 54 years without electing an Honorary Member, Dr. Francis P. Shepard, by unanimous vote on December 5, 1974, was in-vited to become the fifth Honorary Member.

Dr. Francis P. Shepard was born in Brookline, Massachusetts, in 1897, where early in his life he became interested in oceanography. He is married and lives in La Jolla, California. His professional career as a geologist began in 1922 at the University of Illinois after receiving his B.A. at Harvard and Ph.D. at the University of Chicago. He joined the staff at Scripps Institution of Oceanography, La Jolla, California, in 1942, where he has remained and is still doing

research as an emeritus professor. Shepard was in the U.S. Navy during World War I, and during World War II was engaged in doing research for the Navy. He was director of the American Petroleum Institute project on sediments of the north Gulf of Mexico from 1951 to 1958. He is a (continued on page 3)

NATIONAL AAPG ...

(from page 1)

switched to petroleum geology and went to London and India in 1920 for Lord Cowdray's Whitehall Petroleum Corporation.

Four years later he returned from abroad and joined the Jersey Standard organization in South America to engage in geological work in Venezuela, Bolivia, Chile, Brazil and Argentina, before becoming chief geologist of Standard Oil Company of Argentina in 1933 and, a year later, also president of Standard Oil Company of Bolivia. He transferred to New York as a senior staff and research geologist of Jersey Standard in 1938 and was appointed chief geologist in 1953.

In these posts he conducted extensive pioneer worldwide research activities in his specialized fields of sedimentary basin development, oil occurrence and world oil reserves. This experience led to his invitation to discuss world reserves before the United Nations in 1949. Among various exploration credits, Weeks recommended for exploration the Alberta Basin in Western Canada, which yielded significant discoveries and opened that region to the extensive development that followed. He retired as chief geologist in 1958.

Since then, Weeks has engaged in worldwide petroleum consulting and was primarily responsible for the Australian exploration effort which resulted in the discovery in the Bass Straits of major accumulations of oil and gas which supply 70 percent of Australia's demand, and which currently are saving that nation \$1.5 billion in foreign exchange.

More recently, in addition to following the worldwide exploration interests of his company, he responded to a request by the United Nations for an assessment of the world's subsea petroleum resources, and has been serving on a U.S. panel appointed to advise on the directions U.S. efforts should follow in implementing the newly-authorized United Nations University.

Last fall, the University of Wisconsin dedicated the Lewis G. Weeks Hall of Geological Sciences, built with funds provided by Dr. Weeks.



Elected officers for the 1975 term of the Northern California Chapter of the American Petroleum Institute and the Sacramento Petroleum Association are as follows:

API-Chairman:

J. Hubert Mee, Jr.

Standard Oil Co. of California 1st Vice Chairman:

Arsen Shahnazarian

Hunnicutt & Camp Drilling Co. 2nd Vice Chairman:

B. R. "Swiss" Holmes

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SPA-President:

Herb Wheeler Dow Chemical Co.

Dow Chemical Co

Vice President:

Huey Trumps, Schlumberger Secretary-Treasurer:

Don Pinnell, retired

Petroleum Official Defends "Big Oil" was the title of an article appearing in a Sacramento newspaper on Tuesday, January 28, 1975. The title was referring to a talk given that day by Frank N. Ikard, president of the American Petroleum Institute and a leading spokesman for the oil industry, to the Sacramento Comstock Club. Ikard's talk countered many of the widespread inaccuracies and beliefs about the oil companies in the U.S.

As stated by Ikard, "'Big Oil' is composed of 14 million shareowners and not faceless conglomerations of pipes and tanks . . . When oil companies are singled out for legislative punishment, real people get hurt—a lot of real people."

Ikard also argued against proposals for eliminating the oil depletion allowance, stating that "without the allowance, the industry – particularly the smaller independents—would have neither the incentive nor capital to explore for additional sources of domestic oil." The above statement is of particular interest for the Sacramento Valley since independents accounted for 63 percent of the 180 wells drilled during 1974.

On March 14, friends and associates of Ralph M. Barger gathered for a retirement dinner at Christie's Elbo Room in Sacramento. Ralph was to retire March 31, 1975, ending over 33 years of service with the California Division of Oil and Gas. At the time of retirement he was Deputy for District No. 6 to the State Oil & Gas Supervisor. He and his wife plan to move to Laguna Hills around the first part of June.

Huey Trumps, District Manager for Schlumberger in Sacramento, will be transferring to their Houston office— Texas Coast Division, to work in the Sales/International Drilling Dept. The transfer is effective May 15th.

The Sacramento Petroleum Association over the past two months has had a number of short, informative talks presented at the Wednesday luncheon. The variety of talks has ranged from recent vacations by members to discussion of drilling costs in the Sacramento Valley. Most recent talk given was on April 9 by Will Honeybourne, Technical Coordinator with Exploration Logging, on Computerized Logging Operations. Emphasis was placed on Exploration Loggings operation in the North Sea. TERRY PLUMB

Pacific Section

1975-1976 AAPG Pacific Section officers:

President Wesley G. Bruer President Elect, Eugene "Bud" F. Reid Vice President R. "Bob" J. Hindle Secretary Louis O. Heintz
Treasurer Howard E. Stark

The 1976 (51st Annual Meeting) Convention of the Pacific Section, AAPG, jointly with the SEG and SEPM will be held April 21 through 24, 1976, in San Francisco, California. The theme is: "Tomorrow's Oil From Today's Problems."

LABGS SHORT COURSE

The Los Angeles Basin Geological Society will present a three-day short course of special interest to petroleumindustry explorationists. The title of the course, to be held on October 8-10, 1975, is "Regional Geology of the Alaskan Offshore." Publically available geological and geophysical information will be discussed and interpreted as it relates to the structural and stratigraphic evolution of the Alaskan OCS and adjacent deep-sea floor. Offshore areas of special interest to petroleum exploration will be emphasized. Speakers:

Dr. David W. Scholl (USGS)

Dr. George Plafker (USCS)

Dr. Arthur Grantz (USGS)

For additional information please contact Peter D. Sego, Continuing Education Chairman, LABGS, c/o Texaco Inc., 3550 Wilshire Blvd., Suite 1100, Los Angeles, California 90010. Telephone: (213) 380-5830.

Levorsen Memorial Award

The A. I. Levorsen Memorial Award was established as the result of contributions from many individuals and societies who wished to contribute to a lasting memorial to Dr. A. I. Levorsen. This award is given at the section and regional meetings of The American Association of Petroleum Geologists for the best paper, with particular emphasis on creative thinking toward new ideas in exploration. The papers are judged by committees established for each meeting and are presented through the local A. I. Levorsen Award Committee.

After due deliberations by the Award Committee, Mr. David R. Butler's paper titled "Geothermal Energy on the Pacific Coast" was selected as the best paper at the Long Beach meeting eligible to receive the Levorsen Award. The Award which Mr. Butler received, for the best paper at this section meeting, not only serves as an honor to him for the creative ideas that were contributed to the profession, but also continues to perpetuate the memory of a man who contributed so much to the field of petroleum geology and one who was loved and respected by all who came in contact with him. DOUG TRAXLER

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BRANNER GEOLOGICAL CLUB... (from page 1)

fellow of the Geological Society of America, a member of the International Association of Sedimentologists (president in 1958), received the Wollaston Medal (the first American to do so since Darwin), honorary D.S.C. from Beloit College, and an award was established in his name by the Society of Economic Paleontologists and Mineralogists.

He is the author of the textbook "Submarine Geology" (three editions); "The Earth Beneath the Sea;" and in collaboration with K. O. Emery, "Submarine Topography Off the California Coast; with Robert F. Dill, "Submarine Canyons and Other Sea Valleys; and with the late Harold R. Wanless, "Our Changing Coastlines." Shepard is also a contributor to many scientific journals.

Known as the "Father of Submarine Geology," Shepard is still deeply involved in active research, especially the study of submarine canyon currents, which, in recent years, has taken him to both coasts of the United States, the Congo, Mexico, and Hawaii.

During the years, 342 distinguished geologists have addressed the Branner Geological Club of Southern California, and it is difficult to pick out the most outstanding. Speakers have included:

> Dr. H. W. Fairbanks Mr. K. C. Heald Dr. George D. Louderback Dr. Baily Willis Dr. J. J. Galloway Prof. William Morris Davis Prof. C. F. Tolman Dr. John C. Merriam Dr. W. G. Woolnough Dr. C. A. Matley Dr. Ernst Cloos Dr. T. Wayland Vaughn Dr. Alexander N. Winchell Dr. Francis P. Shepard Dr. Beno Gutenberg Dr. Ian Campbell Dr. Walter H. Bucher Dr. Roger Revelle Dr. K. Ö. Emerv Dr. Robert S. Dietz Dr. Chester R. Longwell Prof. James Gilluly Dr. Thomas Clements Dr. U. S. Grant, IV Dr. Donald B. McIntyre Dr. John S. Shelton Dr. Robert Sharp Dr. H. W. Menard Dr. Eugene Shoemaker Dr. Cordell Durrell Dr. Charles Helsley Dr. W. W. Rubey Prof. J. Hoover Mackin Mr. Joe Jensen

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President, Branner Club

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CHANGE OF ADDRESS

W. J. "Bill" Edmund resigned from Seaboard Oil & Gas Co. as Vice President of Exploration on March 15, 1975. Mr. Edmund, who is licensed in California as a Petroleum Engineer and Geologist with over 30 years of experience in the oil and gas industry, will open his Petroleum Consulting office at 13956 Magnolia Boulevard, Sherman Oaks, California 91423, (213) 789-5629.

¥ %



Ralph E. Brodek, Exploration Consultant with Tenneco Oil Company in Bakersfield, has elected to take early retirement for personal reasons. A graduate of USC in 1936, Ralph has spent almost 39 years in various phases of the oil business, from computer on a geophysical crew to the many valuable functions served in his most recent position. He was Exploration Manager for the Kern County Land Company when Tenneco purchased KCL in 1967, and has spent 24 years with KCL and Tenneco. Before that, he worked for Western Gulf for 14 years. The most recent of Ralph's many oil-industry roles was Exploration Committee Chairman of the Western Oil & Gas Association from 1973 to 1975.

Tenneco won't be losing Ralph's unique talents entirely because he has agreed to be available for consultation from his new home in Laguna Hills. All his co-workers and his many other friends wish Ralph and Janet a long, happy life in Southern California. JACK BAKER

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Society of Economic Paleontologists & Mineralogists—Pacific Section Society of Exploration Geophysicists—Pacific Section

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MP	23—Paleogene Symposium of Pacific Coast (AAPG-SEG-SEPM) 1975\$15.00

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NEW PUBLICATIONS ...

(from page 7)

2. 1975 Directory of members of the Pacific Sections of the AAPG, SEG, and SEPM. Price \$2.50.

3. Tour of the Oil Fields of the Whittier Fault Zone, L.A. Basin, California. AAPG, 1975, 76 pp. Field trip guidebook and selected technical papers on the Montebello, Whittier, Sansinena, Brea, Yorba Linda and Mahala Fields. Price \$3.00.

Book Review

Jenkins, Olaf P., EARLY DAYS MEMOIRS. Ballena Press (P.O. Box 711, Ramona, California 92065) 1975.

This is a wonderful account of life at Stanford, as seen through the eves of a child whose father was a professor there, one of David Starr Jordan's "Old Guard"; the accounting of the trip to Mt. Whitney as told by a 15-year-old boy; as a "laborer" working for the USGS under Anderson and Park in the California Central Coast Range; as a student at Stanford when he participated in a geologic expedition to the northeast coast of Brazil under Dr. John C. Branner; as a budding geologist preparing the geologic map of Tennessee; as a teacher at the State College of Washington; and as an oil geologist for three years in the Dutch East Indies. All these experiences were prior to the author's becoming a member of the California Division of Mines and Geology.

It is a delightful book for anyone, but especially interesting to all geologists.

LUCY BIRDSALL

NEWSLETTER

Pacific Section A.A.P.G. P.O. Box 17486 Foy Station Los Angeles, California 90017

Book Review

Probably the most comprehensive history of the oil industry of the world ever compiled has just been published by the American Association of Petroleum Geologists.

A thousand fascinating tales of explorers, wildcatters, promoters, discoveries, failures, and the formation of major oil companies are recounted within the 1,600 pages of "Trek of the Oil Finders: A History of Exploration for Petroleum."

Author is Edgar W. Owen of San Antonio, Texas, a veteran of both World Wars, former president of AAPG and winner of its Sidney Powers Medal, and more recently lecturer at the University of Texas. The book was commissioned by AAPG to commemorate its 50th anniversary in 1966. It has been 10 years in compilation.

Many books have been written about the history of oil discovery and development in various parts of the world, about the growth of individual oil companies, and about the development of new techniques, but this book brings it all together.

Owen traces the industry from the time crude oil was a natural curiosity used as axle grease and medicine to the present international need for the essential ingredient to power and supply an industrialized society. He also traces growth from individual wildcatters through multinational integrated companies to the current trend toward nationalized operations.

The book is a history of petroleum geology, but it is much more than that.

It goes into the history of oil and gas drilling and producing methods, the ups and downs of the economics of the industry over the years, the alternating periods of worldwide scarcity and worldwide oversupply. Much of the story is based on first-hand experiences of the author and others, who through diaries, letters, and reminiscences provided personal accounts of activities around the world.

The style reads more like a novel than a textbook, and the layman will have little difficulty with the technical terms. There are 24 chapters and each chapter is divided into short sections with subheads, making it easy for the reader to find his way around. Each chapter is followed by an extensive bibliography, and there are subject, geographical, and proper name indices, making the book an invaluable reference work.

Classic stories of the oil patch such as the discoveries of Spindletop and East Texas fields are retold in concise but adequate detail, and so are similar narratives of operations in Russia, Indonesia, the Middle East, Mexico, South America, and everywhere else oil has been sought around the globe.

"Trek of the Oil Finders" will find a place in the library of every oilman, whether geologist or not, and also in the reference files of historians, geographers, and students of foreign relations.

The book can be obtained from the American Association of Petroleum Geologists, P.O. Box 979, Tulsa, OK 74101, at \$38 per copy. HENRY D. RALPH



PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section American Association of Petroleum Geologists

VOLUME 29

JULY/AUGUST/SEPTEMBER, 1975

NUMBER 7/8/9

S. 740, The National Energy Mobilization Act of 1975

Portions of a statement by JOHN A. HILL Deputy Administrator Federal Energy Administration BEFORE THE

Senate Committee on Interim and Insular Affairs

JULY 21, 1975

The overriding theme of the proposed bill seems to be that the present private and Government efforts are not satisfactory for managing and promoting this country's resource development and that a Government sponsored "mobilization" effort is needed to ensure that certain energy objectives are accomplished.

The implication that the private sector may not be responding to the necessary task of energy resource development — is ill-founded. We believe that given a stable National energy policy with clearly defined economic motivation, the private sector will meet the challenge for developing our domestic energy resources.

The willingness and ability of private enterprise to respond to our energy challenge, given a favorable economic climate, is evident from its activities over the past few years. In the years 1971 through 1973, approximately 1,100 to 1,200 oil and gas drilling rigs were utilized in this country on the average, and 26,000 to 27,000 wells were drilled per year. In 1974, due primarily to the increased price for new crude oil, the working rig count reached 1,664 and over 32,-000 wells were drilled. All available rigs were put to use, and producers of tubular goods and other oil field equipment were strained to keep up with demand. Oil field equipment and facility manufacturers increased production to full capacity and instituted programs to increase manufacturing capacity during this period. In short, about all that could be done was done. This is, of course, the type of response we are looking for from the (continued on page 4)



On June 27, 1975 the 2nd Annual API Softball Tournament and Barbecue was held at Elk Grove Park and was again a tremendous success. Approximately 70 members were present for the event, highlighted by the afternoon softball tournament which saw the Rio Vista-Woodland "Dusters" defeat the Sacramento "Gasers," evening the series at one game each. Following the tournament there was a steak barbecue and ample supply of refreshments. The success of this year's event was again the result of a number of individuals; special thanks to Pat Robinson, Sarge T. Reynolds, and Oilwell Materials.

Dow Chemical's Western Division Plant at Pittsburg, California, was the destination of Sacramento Petroleum Association members on Tuesday, August 19. Buses picked up members in Sacramento and proceeded to Rio Vista, where a brief "refreshment" stop was made, before continuing to Antioch. The Dow representatives met the group in Antioch and hosted the SPA to a sumptuous lunch and more refreshments, before continuing to the Dow Chemical facility and a tour of the plant.

"The Pittsburg Plant occupies a 400-acre site at the junction of the Sacramento and San Joaquin Rivers, about 45 miles east of San Francisco. It is the largest chemical production complex in the Western United States. The largest volume products are chlorine and caustic soda, solvents, latexes, mining chemicals, and preservatives for paints. The power plant is unique in that it utilizes adapted jet aircraft engines to generate continuous electric power, with waste heat being used to produce steam.

Supporting the manufacturing operations at Pittsburg are on-site research personnel to explore new production techniques and develop new (continued on page 2)

PACIFIC SECTION AAPG-SEPM-SEG

Annual Meeting April 21-22-23, 1976 at the Holiday Gateway Inn San Francisco

The convention theme will be: "Tomorrow's Oil from Today's Provinces." The SEPM theme will be "The Neogene."

Call for Papers. Please submit title and resumé by October 15th for selection November 1st to the following program chairmen:

AAPG Papers—

Gordon Oakeshott 3040 Tottendell Street Oakland, CA 94611

SEPM Papers—

Keith Berry Standard Oil of Calif., WOI Box 3862 San Francisco, CA 94119 Phone (415) 894-2930

SEG Papers—

Reg Neale Chevron Overseas Pet. Inc. 555 Market Street San Francisco, CA 94105 Phone (415) 894-5304

- Host: Northern California Geological Society
- General Chairman Bob Blaisdell S.O. Cal., Box 3862, SF 94119
- General Vice Chmn. John Osmond PG&E, 245 Market St., SF 94106
- Site Coordinator Dave Gerkel 810 Gonzalez Dr., SF 94132
- Ops. Coordinator Robert Carter USCS, 345 Middlefield Rd. Menlo Park, CA 94025
- Tech. Prog. Coordinator .. Rod Huppi Chevron O'seas Pet. 555 Market St., SF 94105

SACRAMENTO ...

(from page 1)

processes. Such efforts in the past resulted in the first commercial process for chlorination of methane to produce chlorinated solvents. Also based at Pittsburg are divisional and regional administrative groups, including engineering, purchasing, distribution and traffic, industrial relations, public relations, and technical service."

Thanks to the Dow Chemical representatives: Fred Harris, Tour Chairman; and Don Pinnell, SPA Secretary-Treasurer, for the success of the tour.

Tentative date for the API Golf Tournament and Barbecue has been set for Friday, October 3, at the Yolo Flyers Club in Woodland. Details for this year's event will appear in Munger's about two weeks prior to the tournament.

TERRY PLUMB



As my term of office has come to a close, I want to thank all of you for your hard work, encouragement, and dedication during this past year. Any organization is only as good as the people who do the work, and all of you have done an outstanding job.

I realize that I was unable to accomplish all of the things that I set out to do, but I imagine that is true of most everyone who has held the office. However, with your help, we managed to avert severe financial problems – at least for a while – and I believe that the Pacific Section will soon be back on a sound footing. The 1975 Convention was an outstanding success, not only technically, but also financially, and Bruce Barron is due an extra special "thank you" for a job well done.

It has been a pleasure working with all of you. I hope we can all get together next year in San Francisco – I owe all of you a drink. Again, best of luck to all of you.

BILL HUNTER

NATIONAL AAPG

The slate of candidates for AAPG office for the 1976-77 year has been approved by the Executive Committee and released by President John Kilkenny. The Association's election will be held in the spring of 1976, and the candidates elected to office will begin to serve on July 1 of 1976.

For President-Elect:

Frank W. Harrison, Jr., Independent, Lafayette, Louisiana

Edd R. Turner, Getty Oil, Houston, Texas

For Vice-President:

Ralph L. Miller, USGS, Washington, D.C.

Gordon H. Wood, Jr., USGS, Washington, D.C.

For Treasurer:

George S. Galbraith, Independent, Abilene, Texas

Theodore Off, Ojai Oil, Ventura, California



The following are the newly elected President Ralph P. Cahill, Argo Pet. Corp. 940 E. Santa Clara Street Ventura, CA 93001 (805) 648-2514 Vice-President Jack Knight, Norris Oil Co. P.O. Box A-1 Ventura, CA 93003 (805) 648-5193 Secretary Tom Hopps, Argo Pet. Corp. 940 E. Santa Clara Street Ventura, CA 93001 (805) 648-2514 Treasurer Glen Gregory, C.W.O.D. 5555 W. Pacific Coast Highway Ventura, CA 93001 (805) 643-5481

AAPG Delegate—7-1-74 to 6-30-76 William R. Merrill P.O. Box 5412 Santa Barbara, CA 93108 (805) 969-5005

Alternate

C. Kimball Ham P.O. Box 5412 Santa Barbara, CA 93108 (805) 969-5005

AAPG Delegate 7-1-75 to 6-30-78 Russell R. Simonson 1605 Glorietta Avenue Glendale, CA 91206 (213) 243-3093

Alternate Robert J. Hindle 23928 Lyons Avenue Newhall, CA 91321 (805) 259-2440



Above is a photo of Martin Van Couvering, the founder of AIPG, taken on the June 6, 1975 AAPG Pacific Coast Section field trip. He is in his 80's and walked one-quarter mile downhill and one-quarter mile back up on a steep oil field road on a hot day to view the exposure of the Oakridge fault. The view is looking east at the plane which strikes N75°W and dips 82° NNE. Vertical displacement is around four miles. Sespe sandstone is on the south, Miocene Monterey shale on the north.

The field trip was a success with around 71 in attendance. It was made possible through courtesy of Union Oil Company of California and Newhall Land and Farming Company. I was the leader, Vern Rutherford was my assistant, and Chuck Barker handled the refreshments and furnished a truck to provide appropriate beverages during the trip.

Bob Yeats of Ohio University commented on the Santa Susana fault. He and his students have recently been studying it in detail in connection with an earthquake study funded by the National Science Foundation and several of the major oil companies.

Two condors were sighted by Jimmy Anderson of Pauley Petroleum. Neither bird appeared to be concerned by the near presence of 71 geologists or the proximity to several oil fields. After a tour of Torrey Canyon, Oakridge, South Tapo, and Tapo Ridge oil fields, the group arrived at the Britt Park picnic ground in plenty of time to enjoy the festivities and a fine barbecue provided by K. B. Hall and his able crew.

Copies of the field trip guide book are available from Carl Evans, Pacific Section Publications Chairman, Texaco, Inc., 3350 Wilshire Boulevard, Los Angeles, CA 90010. ED HALL

NEW GEOLOGIC MAP OF UNITED STATES PUBLISHED

Publication of a new geologic map of the United States (exclusive of Alaska and Hawaii) was announced recently by the U.S. Geological Survey, Department of the Interior.

The wall-sized (48x110-inch) multicolored map includes a legend that shows more than 150 readily identifiable geologic units. Published at a scale of 1:2,500,000 (1 inch equals about 40 miles), the map is an entirely new compilation, and supersedes a previous may published in 1932.

The map, "Geologic Map of the United States, 1974," is available for purchase at \$5.00 per copy from the following U.S. Geological Šurvey Distribution Branches: 1200 South Eads St. ,Arlington, Va. 22202; and Federal Center, Building 41, Denver, Colo. 80255. (Prepayment is required, and remittances should be sent by check or money order payable to the U.S. Geological Survey). Copies may also be purchased over the counter from the following USGS Public Inquiries Offices: 7638 Federal Building, 300 N. Los Angeles St., Los Angeles, Calif.; 504 Custom House, 555 Battery St., San Francisco, Calif.; 1012 Fed-eral Building, 1691 Stout St., Denver, Colo.; 8102 Federal Building, 125 South State St., Salt Lake City, Utah; 1C45, 1100 Commerce St., Dallas, Tex.; 678 U.S. Court House, West 920 Riverside Ave., Spokane, Wash.; 108 Skyline Building, 508 Second Ave., Anchorage, Alaska; 1028 GSA Building, 19th and F Streets, N.W., Wash-ington, D.C.; and 1C402 National Center, Reston, Va.

The companion report, "Explanatory Text to Accompany the Geologic Map of the United States," is published as USGS Professional Paper 901, and may be purchased over the counter for \$1.25 per copy at USGS Public Inquiries Offices listed above, and through the mail from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, to whom remittances should be sent by check or money order.

New San Nicolas Island Guidebook

Copies of Eocene Sedimentation and Paleocurrents San Nicolas Island, California are for sale for \$3.00 by the Pacific Section AAPG. These are the guidebooks for the canceled GSA Cordilleran Section Field Trip of March 1975. Order from Carl Evans, Texaco Inc., 3350 Wilshire Boulevard, Los Angeles, CA 90010.

Call for Papers, AAPG-SEPM, New

Orleans – Papers are being solicited for the Annual Meeting to be held in New Orleans, May 24-26, 1976. The broadly construed theme of "Timing" will include, among other subjects, timing of tectonic movements, timing of deposition and diagenesis of sediments, timing of transgressions and regressions, timing of origin and migration of hydrocarbons, and timing of geophysical, leasing, and drilling projects. Papers of broad, general interest on other subjects will also be accepted.

Titles should be submitted by August 1, 1975, to AAPG Program Chairman, William W. Tyrrell, Jr., Amoco Production Company, Box 50879, New Orleans, LA 70150; or to SEPM Program Chairman, Edward B. Picou, Jr., Shell Oil Company, Box 60124, New Orleans, LA 70160. Abstracts must be submitted by November 1.

Speakers will have a choice of presenting their papers in a regular session or in the new poster session. For the latter, illustrations suitable for hanging on a wall will be required, rather than slides. Each author will be expected to be in attendance at his exhibit for a one and one-half hour period for informal discussion of his material.

AAPG Research Committee's "Oil and Gas Field Data Bank and Map Project of the United States and Canada" - The data on oil and gas fields of the United States and Canada, being prepared by many AAPG volunteer workers, is being combined with the USGS data bank file at the University of Oklahoma, Office of Research Administration, 1808 Newton Drive, Norman, Oklahoma 73069. In addition to information like that in the International Oil Scouts Association's yearbooks, the file contains geologic data such as reservoir, lithology, porosity type, type of trap, geologic basin and oldest formation penetrated in the field. Although the file is only about 75 percent complete, the committee feels that the membership should be apprised of the project's status and availability of the data from the University of Oklahoma. The incompleteness of the file at this time must be stressed. Data continues to be received and by the year's end, the membership will be furnished more specific information concerning the content, completeness, usability and cost of recovering the data from the data bank.

1975 ANNUAL FALL SEPM FIELD TRIP

The Annual Fall SEPM Field Trip this year will focus on the eastern portion of the Santa Maria Basin. Rocks ranging in age from Jura-Cretaceous (Franciscan Formation) to Pliocene (Sisquoc Formation) will be viewed. The excursion is scheduled for Friday and Saturday, October 3-4. Friday evening a BBO will be held at Union Oil Company of California's facilities at Orcutt. Loell Redwine, the featured lecturer, will review the strata to be viewed in the field the following day. The trip itself offers an excellent opportunity to study stratigraphy as well as to collect both mega- and microfossils. Transportation will be by private car and anyone who owns a carryall is urged to bring it along!

Assembly point is the Vandenberg Inn parking lot located at Stowell and Broadway, Santa Maria, California 93454. Time of assembly is 8:00 a.m. sharp, October 4. Both lodging and camping facilities are available in the Santa Maria area for those who plan to attend the Friday evening festivities. Lunch and libations will be provided on the trip for those who are interested.

Deadline for mail pre-registration is September 26; for phone reservation is October 2. For further information or telephone reservations contact:

Jim Gibson, Texaco Incorporated

380-5830 7:30 a.m.-4:00 p.m. (office)

693-6415 after 5:30 p.m. (home)

Fares:

BBQ (Friday evening)	\$5.50
Lunch (Saturday)	\$2.00
Guidebook	\$3.00

Directions to BBQ at Orcutt:

Take Hwy 101 to Clark Road –

Orcutt off ramp.

Exit at Clark Road – Orcutt ramp.

Head west on Clark Road to Bradley Canyon Road.

Head south (left turn) on Bradley Canyon Rd. to Rice Ranch Rd.

Turn right onto Rice Ranch Road. Proceed west on Rice Ranch Road to

the Union Oil lease road (marked by large iron gate).

Travel up the hill on the main road. Turn left at STOP sign at top of hill.

Drive through the office facilities to school house where BBQ will be held.



PAGE 4

MOBILIZATION ACT... (from page 1) private sector.

The situation in 1975 is not so encouraging as that in 1974. There have been over 1,600 rigs operating in the country for most of this year, but some rigs have been idled in recent months. The problem is twofold. It is due, in part, to the loss of the oil depletion allowance which effectively has reduced cash flow causing some companies to reduce planned expenditures for drilling operations.

The decrease in drilling activity is also due to the very unstable situation caused by the lack of a National energy policy and the widely divergent attitudes toward the industry expressed by Government officials. On one hand, the private sector is encouraged that new crude oil will be allowed to seek free market value; but further down Pennsylvania Avenue there is talk of a price rollback. Secondly, it is common knowledge in the industry that a profits tax is being considered, a plowback provision may or may not be included. Finally, in the midst of much talk about the need for additional investment in exploration, the depletion allowance is reduced and in some instances removed. The continued uncertainty, coupled with the fear of potential measures that could adversely affect profit, makes it very difficult and very risky for the private sector to plan investment. Many prudent investors have decided on a "wait and see" policy until some form of Government policy emerges.

Given a stable National energy policy, the private sector can be expected to respond as it did during 1973 and 1974; maximum utilization of drilling equipment will result and the manufacture of additional equipment will be encouraged. A Government-sponsored "mobilization" effort should then be unnecessary.

Our second very basic objection to the proposed National Energy Mobilization Act is that it would create yet another Federal Government entity, namely, a "National Energy Mobilization Board," to manage and monitor energy development in the country. The bill authorizes and directs the Board to initiate Government participation in oil and gas exploration and overall energy development. The Board is also directed to submit several comprehensive reports, some on a frequent and continuing basis.

The creation of a board to monitor and manage energy affairs represents a further fragmentation of energy policy and authority in the Federal Government. A principal purpose of the Federal Energy Administration Act of 1974 was to concentrate energy responsibility in the Federal Government into one agency. The addition of a new Government agency with energy-related functions at this point can only frustrate this effort.

Having highlighted our fundamental objections to the subject bill, I will now discuss briefly some of its more specific provisions.

Reporting Requirements

In Section 201 of the bill, the Board is directed to establish targets to increase energy self-sufficiency, monitor and assess energy development, and submit various reports. FEA has performed and is continuing to accomplish most of the requirements set forth in this section. Project Independence Blueprint was a major part of this effort.

The FEA and several other agencies collect and report, at the present time, a massive amount of information pertaining to energy development and production. Attached as Appendix I is a list of 58 reports formally issued by FEA thru January of this year. A revised list indicating all of the FEA publications is due to be released this week. We will forward a copy of that list to you when it becomes available. Many of these reports are continuing or periodic reports that are issued on a monthly or quarterly basis. This past month the FEA forwarded to the Congress two major reports, namely the "Initial Report on Oil and Gas Resources, Reserves, and Productive Capacities;" and our first "Annual Report 1974-75" submitted in compliance with Section 15(c) of the Federal Energy Administration Act of 1974.

In summary, we are anxious to work with the Congress in identifying additional data acquisition and reporting which would be constructive. But, simply stated, we see no reason to attempt to duplicate existing efforts and accomplishments.

Government Enterprise

Another major thrust of the proposed bill is an attempt to solve our energy problems by injecting the Government into energy development and production. There may be some application for Government involvement in nonconventional sources of energy, but for development of the traditional sources of energy (oil, coal, and gas) we think it would be a tragedy to encourage Government intervention.

The advisability of Government involvement has been widely debated and is indeed controversial. We have studied at great length the relative merits of increased Government involvement in the oil business. The most effective way of evaluating the performance potential of a Government-operated oil company, in a quantitative fashion, is to compare the historical performance of foreign Government-owned oil companies with that of private oil companies.

To make a meaningful comparison between Government-owned oil companies and private companies, it is necessary to establish the following bases:

1. Time Period — Use a period of average performance extending over at least three years (1971-72-73) to minimize any unusual situations.

2. Scope of Activity – Compare only those companies which are engaged in the same phases of the industry including exploration, production, refining, transportation and marketing.

3. *Experience* – Compare only those companies which have been in business over a period of several years.

Most of the Government companies involved in the comparison are in direct competition with the private companies and are selling at the same prices in a common market. There are one or two exceptions, such as Mexico's Pemex which operates as a monopoly.

A table displaying key performance factors for several private and Government companies is located in Appendix II. An analysis, which is summarized below, reveals the difference between six private international companies and six Government oil companies.

F	Stockholders		
	Sales	equity	
Private Companies	8.4	12.3	
Government Companies	3.1	3.5	
Two other indicate		oh raflaat	

Two other indicators which reflect efficiency in financial areas are as follows: M\$ per employee as

	Yearly Sales	Total Assets
Private Companies	135	168
Government Companie	s 43	73

In terms of operational efficiency, comparisons can be drawn in the producing and refining phases of operation: Bbls per day per employee

	Production	Refining	
Private Companies	44.2	36.4	
Government Companies	6.6	14.1	
		• •	

These comparisons indicate that in every foreign country where a Government oil company has been created and where sufficient data is available, *without exception* the performance of these entities has been markedly inferior to that of competing private companies. That such operations are grossly inefficient is evident in the number of employees per barrel of throughput and the return realized on investment. In some instances, without Government subsidies and/or greatly reduced tax rates, the Government-owned companies would have to

11TH ANNUAL MEETING, CALIFORNIA SECTION AIPG THEME: "ECONOMICS AND POLITICS OF ENERGY AND THE ENVIRONMENT" Royal Palms Motor Hotel, 200 Union Avenue, Bakersfield, California

Saturday, October 4, 1975

PROGRAM

Those planning to attend are urged to pre-register. It is vital for all geologists to be aware of the political and economic factors bearing on their profession. The speakers are all knowledgeable experts in their fields and will provide Cal-Section members and others attending a factual insight into the problems and solutions necessary to maintaining a healthy economy and profession. Additionally, a review of the past year and future plans will be presented by Cal-Section officers. REMEMBER, the vitality of AIPG depends upon the interest and attendance of its members. PLAN TO ATTEND AND LET YOUR VOICE BE HEARD!

of its members. FLA	IN TO ATTEND AND LET TOOR VOICE BE HEARD.
9:00 AM - 10:00 AM	Registration. Informal Coffee Hour.
	President's Address - Report on AIPG Affairs
10:20 AM - 10:30 AM	
	Business Meeting: Treasurer's Report; Committee Reports; Motions and Discussions.
12:15 PM - 1:15 PM	Lunch. Introduction of new officers and Board.
Guest Speakers	
1:45 PM - 2:15 PM	"Energy-Minerals Development: The Pros Versus the Cons or 'Let's Get Them Before They Get Us!'"
2:15 PM - 2:45 PM	Douglas H. Hamilton, Partner, Earth Sciences Associates, Palo Alto. "The Consulting Engineering GeologistThe Man in the Middle".
2:45 PM - 3:15 PM	Raymond L. Blum, Senior Engineering Geologist, Pacific Gas & Electric . Co., San Francisco.
2.15 DV 2.20 DV	"Future Power Needs versus Present Problems (Let There Be Light!)".
3:15 PM - 3:30 PM	Dr. C. M. Swinney, Manager, Energy Resources, Southern California
3:30 PM - 4:00 PM	Edison Co., Los Angeles.
	"The Economics of Coal". Francis J. Barker, Vice President, Natural Gas and Gas Liquids, Union
4:00 PM - 4:30 PM	Oil Company of California, Los Angeles.
	"The Energy Crisis From the Producer's Point of View".
	The Energy Crisis from the froducer's form of view.
Evening Program	
6:00 PM	No Host Cocktail Hour.
7:00 PM	Dinner
	Dinner Dinner Speaker: William M. (Bill) Thomas, Assemblyman, 33rd District,
8:00 PM	California Legislature.
	"Energy and Environment - Let Your Voice Be Heard".
	Energy and Environment - Let four voice be heard .
Disso datash and w	eturn to John C. Sullivan, 520 Kentucky Street, Room I, Bakersfield, CA-93305.
	, CALIFORNIA SECTION, A.I.P.G., ROYAL PALMS MOTOR HOTEL, BAKERSFIELD, CALIF.
TITH ANNOAL MEETING	Saturday, October 4, 1975
N	Wife's Name (if attending)
Name:	
Company Affiliation	:
	\$7.00 (includes cost of Proceedings to be mailed after meeting).
Indicate Number <u>Wil</u>	
	sh, motel accommodations, Friday Night Saturday Night
Single Doubl	e Twin (Price of Luncheon & Dinner includes Tax & Tips)
You are urged to pre-	e-register by returning this form with your check for registration and for
the meals you plan	
later than Septembe	

<u>A N N O U N C E M E N T</u>

We would like to have you join us at a luncheon on October 3, 1975. C. John Miller, aggressive, articulate, and factual President of the Independent Petroleum Association of America, will be the honored guest speaker at a luncheon sponsored by Town Hall and supported by the Independent Petroleum Associations. It will be held at noon on October 3, 1975, in the International Room of the Beverly Hilton Hotel, 9876 Wilshire Blvd., Beverly Hills (adequate parking is available).

John Miller will present the up-to-the-moment situation in Washington, D.C. The title of his talk will be "America's Energy Future: Shock or Security".

Since his talk will be consumer oriented many oil and gas Independents are planning to take tables and to bring editors of their local newspapers, their attorneys, accountants, friends, and families to this luncheon. This is a great opportunity to inform the non-oil producing consumer of what is happening to the energy situation in America.

Send your check for your reservation to the Chairman of the luncheon committee, S. C. Cappel, Vice President Atlantic Oil Company, 523 West 6th Street, Room 1116, Los Angeles, California 90014. (Telephone number: 213-624-8741).

First come, first serve. Get your checks in early. Under Town Hall rules we must have our tickets in advance of the luncheon.

Please detach and mail with your check payable to: "John Miller Luncheon"

NAME:	
FIRM:	
TITLE:	· · · · · · · · · · · · · · · · · · ·
ADDRESS:	
NO. OF TICKETS @ \$11.00:	
NO OF TABLES @ \$110.00 (each table seats	10):

close down operation due to lack of cash flow.

It was our intention to compare several national oil companies with several private companies, but all that is apparent is a contrast, and a pathetic one at that.

Our primary concern here is that all available equipment and facilities will be utilized by the private sector if this country adopts a comprehensive energy policy which will create an economic atmosphere conducive to energy development. Government involvement in energy development and production will not supplement the private sector, it would instead replace a part of the private sector. If the Government operation were less efficient than the private sector as indicated above for other national companies, then Government involvement would actually impede energy development.

Government Sponsored Exploration

Sec. 204 of the proposed bill mandates that a resource assessment program be conducted which, among other things, shall "provide the public with information respecting the probable size of the public resources, the cost of developing specific resources for commercial use, and the value of such resources." This Section would have the Federal Government explore Federal lands before they are leased by the Department of the Interior.

This requirement is apparently based upon two presumptions: that it would enable the Government to obtain a higher value for leased lands, and that it would provide the Government with information so that the Government could expedite the necessary energy development effort.

In regard to the first assumption, the Department of the interior has performed several analyses addressing the subject of increasing revenues from Federal lands. They are presently conducting a cost analysis on lands already leased to determine if exploration, prior to leasing, would have been more advisable. We have also been informed that some private independent firms are conducting similar analyses. We will review these studies, as well as our own analyses, and make our recommendation to the Energy Resources Council. If exploratory drilling prior to leasing is found to be advisable it can be accomplished utilizing present legislative provisions.

With respect to the second concern, we have deep reservations about the Government being able to increase energy development for the reasons noted above in the discussion on Government enterprise.

Exploring for oil is a complex and

risky business and any endeavor the Government may contemplate in this area must be carefully analyzed. As you gentlemen know, to explore a structure you do not merely drill one hole and determine whether there is oil present or not.

A group of associated producing reservoirs known as a field may be located in a particular geologic structure. However, a large percentage of the total structure is usually void of any significant quantity of oil. As noted in the examples below, many wells may have to be drilled on any given structure before oil is finally discovered... if ever.

It is an often demonstrated fact of life in the oil business that the biggest, most technically sophisticated, most successful major oil companies drill many dry holes. The Bay Marchand field in the Gulf of Mexico, the largest field found in the Gulf to date, was found after 12 dry holes were drilled in succession. The prolific Williston Basin in the Northern U.S. was the site of more than 200 dry holes before the Beaver Lodge find was made.

The Destin Anticline off the Florida Coast was the largest untested structure in or near the lower 48 States. In July 1974 when the first hole was spudded, and since then, that hole and seven others have been completed as dry holes. The private sector has invested over \$900 million in the exploration activities on the Destin Anticline to date.

In 1974, there was a total of 6,710 wildcat wells drilled. There were 5,725 dry holes, 532 that became gas producers, and 453 that yielded oil. These figures indicate that about one out of seven new field exploratory wells is commercially successful. However, only about one in 40 exploratory wells actually results in the discovery of a significant field.

It is barely conceivable that a "friendly" Congress could tolerate a Federal Corporation drilling a string of seven successive dry holes, much less than 200.

Conclusion

I think our position should be clear at this point. It is our firm conviction that energy resource development can best be accomplished by the private sector. The Government's role should be supportive of private industry by providing an economic climate conducive to investment in energy development. We appreciate that the mobilization program outlined in the proposed bill is intended to "supplement and be an addition to the activities of the private sector." Simply stated, we feel that the proposed legislation not only fails to supplement energy development efforts of the private sector; but that it would, in fact, hinder that development. The bill would essentially "reinvent the wheel" and then place it in mud so that it is difficult to maneuver.

What is needed, in our opinion, is a stable comprehensive National energy policy. The President has proposed such a program and we endorse it. After a comprehensive energy policy has been implemented, the FEA will closely monitor energy development and recommend more assertive Government action where needed. This would appear to us to be the most logical and effective way to promote and manage our domestic energy development.

AAPG Sectional Meetings

October 1-3, 1975

Mid-Continent Wichita, Kansas October 5-8, 1975

Eastern East Lansing, Michigan October 22-24, 1975

Gulf Coast Jackson, Mississippi February 29-March 2, 1976

Southwest Wichita Falls, Texas April 21-24, 1976

Pacific San Francisco, California

<u> </u>			
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Material for publication and requests for pre- vious copies should be addressed to JOHN W. LIDSTROM, TEXACO INC., 3550 WIL- SHIRE BLVD., L.A., CALIF. 90010.			
Material received by the 10th of each month will be included in the following issue.			
CHANGE OF ADDRESS, subscription, and membership inquiries should be directed to: MEMBERSHIP SECRETARY, PACIFIC SECTION AAPG, P.O. BOX 17486, FOY STATION, LOS ANGELES, CALIF. 90017.			



June 31, 1975. The bells tolled, the cock crowed, and the tired old officers of NCGS (fiscal, that is) rammed on their hats and picked up their briefcases. In pure, unselfish glee, they handed the keys to the new crew whose eager eyes and wagging tails portend bright new things for the coming year.

David Pfeiffer of Standard Oil is the new President, having served as President-elect last year. New President-elect is Verne Stephens of USGS. Verne was treasurer in 1974.

Dick Stewart of Calif. Div. Mines and Geology is the new VEEP. He arranges the programs.

New Secretary is Mort Polugar of Chevron Overseas Pet. Mort chaired the membership committee last year and brought in over 40 new souls to our growing society.

More good news. Our new Treasurer is Pierina Nicholson of the Oakland Museum. She brings a flowered brightness to the stark male desert.

Two new Counselors are John C. Maher, USGS, and Kenneth Wilson, a consultant. Ken was NCGS President in 1963.

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Thumbing Through History. In 1948 gold dust in San Francisco was fixed at \$16 per oz. For bar drinks, the dust was measured by a pinch from the miner's pouch, and bartenders with broad thumbs were in great demand. From this source comes the old saw: "How much can you raise in a pinch?" Some bartenders licked their thumbs, dropped the pinch of dust into the till, and what stuck to their thumb went into their vest pocket. Yes, we know. But that's the way we heard it.

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We're Coming, Mother Lode. Our society has changed its constitution to conform to specific language required by the IRS and Post Office for nonprofit recognition. Then we will be able to mail our announcements for 1.8¢ per mailing instead of 10¢. Think what that will save a lean purse with 250 members at present and 300-plus by next July.

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Read on for Belly Laugh. We are writing a history of sorts about NCGS since it was birthed in a barroom back in 1944. For a long time Monday noon-luncheon meetings were held in San Francisco on a drop-in basis and Herb Higgins gives us the high-down on a low spot in the annals.

'The all-time low in NCGS history took place when I was President in 1968," Herb reminisced on our last 1968," Herb reminisced on our last field trip. "There were about 100 members in the Society and usually about 20 of them showed up for Monday lunch at the Montgomery house. On one particular Monday, only two of us showed up - Gladys Louke and I. I don't remember why Gladys came but I guess I was there because I was President.'

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This is not the end . . . but it is, perhaps, the end of the beginning. -WINSTON CHURCHILL

OTTMAR F. KOTICK, Scribe

LABGS SHORT COURSE

The Los Angeles Basin Geological Society will present a three day short course. The title of the course, to be held on October 8-10, 1975, is "Regional Geology of the Alaskan Offshore." The sessions will be held from 8:00 to 11:00 a.m. at the Union Oil Company Auditorium, 461 Boylston Street, Los Angeles.

Publically available geological and geophysical information will be discussed as it relates to the structural and stratigraphic evolution of the Alaskan O.C.S. and adjacent deep sea floor. The presentations will follow a flexible format. Following the talks, opportunity will be provided for in-formal question and answer periods. Speakers:

David W. Scholl (USGS) George Plafker (ÙSGS) Arthur Grantz (USGS)

Cost:

\$15.00 if registered before September 15, 1975; \$20.00 thereafter.

Validated parking will be available. Send checks, payable to LABGS, to Peter D. Sego, Continuing Education Chairman, c/o Texaco Incorporated, 3550 Wilshire Boulevard, Suite 1100, Los Angeles, California 90010. Telephone: (213) 380-5830.

Vorthwest

NO REPORT.



Book Review

Engineering Aspects of THE LIMA, PERU EARTHQUAKE of October 3, 1974 by The EERI Reconnaissance Team: Donald Moran, Team Leader; Greer Ferver. James Stratta, Charles Thiel, Jr., Julio Valera, Loring Wyllie, Ir., and Contributing Authors: Bruce Bolt and Charles Knudson. Published by the Earthquake Engineering Research Institute, 424 40th Street, Oakland, CA 94609. Price \$8.00 EERI Members, \$10 non-members (Add \$1.00 for mailing to addresses outside the United States). Paperback, 8¹/₂" x 11", 85 pages, 106 photographs and figures. Order from the Institute at the above address.

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At about 9:21 a.m., Thursday, October 3, 1974, a strong earthquake caused a total of 70 deaths in Lima, Peru and in several small villages to the south. The Geophysical Institute of Peru reports property damages of 200 million dollars.

This report summarizes the gathered data, observations, and conclusions of the EERI Reconnaissance Team. The conclusions are limited to engineering aspects since these reflect the expertise of the members of the Reconnaissance Team. Some of the data and conclusions presented must be considered preliminary since research is currently being conducted by the USGS, the Geophysical Institute of Peru, and others. A special paper on magnitude by Professor Bruce A. Bolt is included as Appendix A. This paper was presented at the EERI annual meeting on February 8, 1975 and contains material relevant to the May 31, 1970 and October 3, 1974 Peruvian earthquakes.

The objectives of this report are to present and discuss the lessons learned from this earthquake in order to mitigate the effects of future shocks. This report would be of interest to architects; building officials; geologists; civil, structural and soils engineers; seismologists and others interested in earthquake engineering.

CHANGE OF ADDRESS

Ed Gribi is back in the Salinas Valley consulting. He can be reached at the following address and phone number:

Edward A. Gribi, Jr.

Box 984 King City, CA 93930 (408) 385-6164, 385-5428

K. W. "Bill" Roth has joined Pauley Petroleum Inc. of Los Angeles as Manager of Exploration based in Santa Barbara. He was formerly employed with Brascon Resources Limited in Calgary.

AAPG PACIFIC SECTION EXECUTIVE COMMITTEE MEETING JULY 11, 1975

Pacific Section Annual Business Meeting – The Pacific Section Annual Business Meeting convened at 4:18 p.m., Friday, April 25th in the Grand Salon Room on the Oueen Mary during the 1975 Convention. Bob Hindle, former Membership Chairman and present Vice President, acted as Secretary pro-tem. Bill Hunter gave the Treasurer's Report and congratulated General Chairman Bruce Barron on a fine effort. Bill added that the 1975 Convention was well attended, including some 800 paid registrants. The \$3,300 cost for the new directory and energy papers was shared by the SEPM and SEG. The symposium volume expense was shared by the SEPM. 300 sets of the papers at \$13.00 per set were sold at the Convention. The post-Convention price is \$15.00. The selection of the recipient for the A. I. Leversen Award is under consideration. The minutes of the previous Executive Board Meeting were not discussed and approved at the Business Meeting.

Pacific Section AAPG-SPE Joint Continuing Education Program – Bill Hunter reported that the joint Pacific Section AAPG-SPE Continuing Education Program was an educational and financial success. The program was the outcome of a "last-minute" decision between Bill and the SPE. The Pacific Section's mailing expense was \$84.40. Some \$815.00 will accrue to the Pacific Section's General Fund. The financial details have not been finalized with the SPE.

Distinguished Lecture Series – Bill Hunter stressed the need for a Distinguished Lecture Committee which could participate in the selection of lecturers for the affiliated societies and schedule lectureers' intineraries, possibly reducing the total lecture expense.

Continuing Education Committee – The Pacific Section does not have a Continuing Education Committee. Bill Hunter is a member of the National Continuing Education Committee and would assist with the Pacific Section Committee if such a committee is considered. President Bruer felt that such a committee should be formed.

Public Information Committee – Bill Hunter suggested that a Public Information Committee be selected whose members could attend the public hearings and other relevant meetings on controversial oil and gas topics. President Bruer suggested a possible revision in the Constitution to

include a Public Information Committee and stated that the efforts of individual members and societies be coordinated through the Pacific Section because of state-wide significance.

1975 Spring Picnic – Scott Knight, Past Treasurer, reported that \$594.21 was netted on the Spring Picnic. This figure could be reduced by "no show" refunds which will be made upon request only.

Financial Report – Scott Knight announced that the 1974 AAPG-SEPM-SEG Pacific Section Convention Committee was advanced \$2,000 by AAPG. Loss of the Guidebooks at S.D. Convention, which represented \$1,642.88, was absorbed by the AAPC. SEPM and SEG owe some money to AAPG for 1975 publishing. Scott in favor of "beefing-up" low-member (low treasury) societies without 'slaughtering" Pacific Section. 1975-1976 dues should augment the Pacific Section account. The split between groups for the convention monetary advance should be determined prior to convention. The sum of \$1,000.00 should be allocated in advance by both the SEPM and SEG as well as by the AAPG. Fund A should be replenished back to a pre-determined level. Bud Reid made a motion, which was carried, that Fund B (last resort) should be a fixed term account which would yield the maximum rate of interest.

Dave Pfeiffer, President, Northern California Geological Society, suggested that the societies participate in more fund-raising activities. President Bruer thought that the convention duties should be delegated among the affiliated societies with the local society handling the entertainment. The societies would participate in some portion of the convention profit (and also the loss?). President Bruer instructed the Finance Committee composed of Chairman Don Hallinger, Past Treasurer Scott Knight and Treasurer Howard Stark to determine the feasibility of society participation in the Conventions with a share in profits (or losses), to investigate some method of deferring half the society cost for Distinguished Lecturers, possibly by reducing the rebate from \$2.00 to \$1.00/member with a \$100.00 minimum and compensated for by raising the dues and/or the registration fees, and to study and report on a proposed projected budget for a 1975-1976 fiscal year (calendar year budget now). Scott Knight will study and make recommendations for structuring AAPG finances. S. Knight reported a treasury balance of \$7,-794.67.

Membership Committee Chairman – Bob Hindle, Vice President, will continue as Membership Committee Chairman. President Bruer will ask for a short summary of Membership Committee activity at the next Executive Board Meeting.

Planning and Organization Committee – Doug Traxler and Bill Hunter will determine a format for a Continuing Education Committee and a Public Information Committee, possibly combining the two committees.

Directory Committee - Mike Mayuga was formerly the chairman. Bill Hunter, Ad Hoc Chairman, with Carl Evans and Bob Evans as committee members. The directory would be updated annually. All dues payors are in the directory. Pacific Section members are not necessarily members of the National but National members must be Pacific Section members. President Bruer instructed that directory be revised and issued annually, raising dues to cover cost of printing directory. Only 113 directories were sold at the convention. A proposal was made to send out directories to the societies to spur additional sales.

Historian of Records – A motion was carried appointing Frank Parker as Historian of Records for AAPG Pacific Section.

Publications Committee – Carl Evans, Chairman. \$12,000.00 committed to reprinting Kleinpell's "Miocene Stratigraphy." To date \$5,363.40 has been spent. 25% of expense to be refunded by SEPM (from sale?). The publication will be sent to the National in September or October of this year. A motion was carried that Carl Evans in cooperation with Don Hallinger make a report of the accounting and investigate the terms and conditions of the agreement, with all documenation, of the Kleinpell publication as soon as possible. Funds for the publication are to be withheld pending the outcome of the investigation.

Southern California Borderlands Publication – Dave Howell, Geologist, USGS, proposed that a compilation of papers be made to update the Southern California borderland information, with the USGS assuming the role of editor and publisher using their guidelines. A field trip to Santa Cruz Island is planned in the near future by Howell for oil company, university, USGS and other interested personnel. All papers for the volume must be in by January 1, 1976 with May 1, 1976 as the target date for the (continued on page 8)

PAGE 8

AAPG PACIFIC SECTION (from page 7)

final copy. Possibly the volume would be ready for sale at the 1976 San Francisco Convention. The oil companies, universities and the USGS were suggested as prospective contributors to defray the publishing cost. Bud Reid volunteered to act as Chairman of AAPG Pacific Section Committee to solicit contributions from the oil companies.

Legislative Committee – Legislative Representative Dennis Allen suggested that the 1975-1976 representative be selected from the Sacramento area. President Bruer will consider an "on the scene" rep. Dennis Allen will remain on the Legislative Committee. He requested that the attached legislative memorandum be read at all society and other meetings and stressed the seriousness of S.B. 316 which sets the MER by the DOG. He further requested that all members write their assemblymen and senators asking for relief from this bill.

Fall Field Trip – There have been no fall field trips. It was proposed to delete this committee from the Constitution.

Spring Picnic – Bill Hunter stated that the Pacific Section Spring Picnic, including the field trip and golf tournament, is held in Southern California and is attended predominantly by Southern California geologists. Suggestions were made that the picnic either be put on by the local societies or be allowed to continue as a function of the Pacific Section. Is the picnic a proper function of the Pacific Section when it affects only one or two societies?

NEWSLETTER Pacific Section A.A.P.G. P.O. Box 17486 Foy Station Los Angeles, California 90017 1976 San Francisco Pacific Section Convention – Dave Pfeiffer reported for Robert Blaisdell, General Chairman, that good progress is being made at this stage in the time-table for the 1976 convention. Committee chairmen have been selected. Program advertising, exhibit and technical paper solicitation have been started. Thus far, three program ads, three exhibits and four papers have been solicited.

1977 Bakersfield Pacific Section Convention – Need General Chairman. Location reserved for convention in May 1977.

1978 Pacific Section Convention – Date and location for 1978 convention will be considered by next spring.

Certificates – An attempt is being made to locate certificates which will be awarded to outgoing officers.

Respectfully submitted, LOUIS O. HEINTZ, Secretary AAPG Pacific Section



RECOMMENDED READING STATE OF WASHINGTON, DE-PARTMENT OF NATURAL RE-SOURES, DIVISION OF GEOLOGY AND EARTH RESOURCES (Olympia, Wash. 98504)

Bulletin 68: Geology of the Methow Valley, Okanogan County, Wash., by Julian D. Baksdale. 17 figs. 72 pp. 1 plate\$2.00

> RICHARD L. HESTER 1911 MONTECITO DR.

> GLENDALE, CA 91208

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FIELD NOTES (ARIZONA BU-REAU OF MINES), vol. 5, no. 1, March 1975

- Pima County moves on geologic hazards, by H. Kesley Peirce and John S. Vuich.
- THE ORE BIN, vol. 37, no. 2, February 1975
- Geology of Hug Point State Park, northern Oregon Coast, by Alan R. Niem.
- THE ORE BIN, vol. 37, no. 3, March 1975
- Mount St. Helens Volcano: Recent and future behavior, by Dwight R. Crandell, Donal R. Mullineaux and Meyer Rubin.
- THE ORE BIN, vol. 37, no. 4, April 1975
- Landforms along the coast of Curry County, Oregon, by Ernest H. Lund. THE ORE BIN, vol. 37, no. 5, May 1975
- Recent shoreline changes of the Alsea Sandspit, Lincoln County, Oregon, by James E. Stembridge, Jr.
- U.S. GEOLOGICAL SURVEY
- Professional Paper 437-G: Land subsidence due to ground-water withdrawal in the Los Banos-Kettleman City area, California, Part 3: Interrelations of water-level change, change in aquifer-system thickness and subsidence, by W. B. Bull, and J. F. Poland \$1,90

LUCY E BIEDSALL

We by it close "culture"



PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section American Association of Petroleum Geologists

November 19, 1975

VOLUME 29

OCTOBER/NOVEMBER/DECEMBER, 1975

NUMBER 10/11/12

OIL DEPLETION ALLOWANCE

On May 22, 1975, a petition was sent from the Los Angeles Basin Geological Society to Washington, D.C., in an attempt to express concern over the removal of the oil and gas depletion allowance. Following are two replies to this petition:

Dear Petitioners:

August 25, 1975

Thank you for your communication expressing your position on the oil depletion allowance.

The President and the Federal Energy Administration have supported the continuation of the oil depletion allowance, which exempted the first 22 percent of the gross income of the oil industry from Federal taxation, as an incentive to increased domestic petroleum exploration and production. We believed that the elimination of the allowance would be counterproductive to our goal of reducing our dependence on foreign sources of oil.

However, the Congress has now enacted legislation that includes a provision eliminating the depletion allowance for the major producers. The allowance will phase out gradually over several years for moderate producers, but will be retained for the small producer with the percentage being reduced to 15 percent by 1984. Since this measure was included in an omnibus tax relief bill that was considered vital economic legislation, the President has reluctantly signed it into law.

The Federal Energy Administration is now studying the impact that this measure will have on the petroleum industry, and has under consideration a number of policy options that could offset its most serious negative consequences. We remain committed to the maintenance of a healthy oil industry, and we encourage the expansion of domestic production of energy supplies.

We appreciate your interest in this matter.

DAVID A. MACKIN Director of Public Inquiries Office of Communications and Public Affairs Dear Friends,

Thank you for your message regarding the percentage oil depletion allowance for the petroleum industry.

As our world oil and gas supplies have grown scarce, their prices have skyrocketed. Since October of 1973, world crude oil prices have increased from less than \$2.50 a barrel to around \$12 a barrel. Even the U.S. government controlled price of \$5.25 a barrel for "old" crude oil — or that which is being produced at fairly constant rates from existing domestic oil fields —is double the average market price of just two years ago.

I believe that these tremendous price increases provide adequate incentive for most oil producers to find and produce new supplies of crude oil, and given this price incentive, it was imperative to reform some of the tax benefit provisions which had been designed to encourage adequate crude oil production during periods of much lower market prices. To fail to make such reform would have unjustifiably enriched the major oil companies at the expense of the American consumer. Thus Congress, in enacting the Tax Reduction Act of 1975, rewrote some of the special tax provisions covering the oil industry.

I played a very active role in formulating this legislation which, among other things, eliminates the depletion allowance for major oil companies. I strongly supported this measure because I believe the allowance has outlived its purpose as a tax incentive. In addition, the bill retains a permanent allowance for independent producers which will phase down from a 22% allowance on the first 2,000 barrels of oil produced per day in 1975 to a 15% allowance on the first 1,000 barrels of oil produced per day in 1984. Further,



the bill ends a glaring inequity by limiting tax credits on overseas investments by U.S. oil companies. At a time when we are seeking to become energy self-sufficient, it makes no sense to use our tax system to encourage foreign oil production. If we allow tax incentives to the oil industry, their purpose should be to promote greater domestic production.

Toward this end, I worked very hard to preserve a percentage depletion allowance for independent pro-ducers. The 10,000 independent producers currently operating in the United States drilled more than 85% of all the exploratory wells in this country last year. But these independents have a tough time competing with the giant, multi-national oil corporations. To stay in the high-risk business of oil exploration, a company has to have access to large quantities of investment capital. By preserving the depletion allowance for independents, we are making a portion of this investment capital available to them. This competitive edge should, in turn, help to stimulate domestic competition within the industry - competition that has been declining for a long time.

Overall, I believe that Congress has been successful in striking a fair balance: to tax oil corporations equitably -yet asure that their operations remain profitable, competitive, and enterprising. In any case, I will be carefully monitoring the impact of this new law and you can be certain that I will support corrective action should any new problems arise.

I very much appreciate you taking the time to share your interest in this matter with me.

Sincerely,

ALAN CRANSTON

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WELL RELEASE

On October 1st, Governor Brown signed SB 345 authored by State Senator John Nejedly and co-authored by Assemblyman Ken MacDonald. With various time limits and safeguards, this bill makes public most of the well data and production reports filed with the Division of Oil and Gas. The effective date of release of this data is July 1, 1976. Operators desiring a period of confidentiality for any well past this date must make a written request to the DOG.

Although the final compromise includes some confusing wording which may be modified by the legislature next year, I believe the basic provisions are as follows:

1. Data on *all* wells is to be submitted to the DOG within 60 days after a well is completed, suspended or abandoned. (Section's 3218 and 3738 were repealed. These allowed six months to one year for "prospect wells.")

2. Records of any well will be kept confidential "until two years from the date of completion of drilling for onshore wells and five years from the date the well is capable of production for offshore wells" on the written request of the operator.

3. "Upon receipt by the supervisor of a written request documenting extenuating circumstances pertaining to a particular well, the supervisor may extend for (up to two years) the period of limited access to prospect well records and offshore well records -unless a longer period of time is approved by the director (of the Department of Conservation) after a public hearing.

Prospect wells were defined as "any well drilled to extend a field or explore a new, potentially productive reservoir."

4. Offshore wells also become public information when the lease expires.

5. Geothermal wells are treated about the same as offshore wells except the five years starts from the date of commercial production.

6. Excluded from release are "experimental logs, tests, or interpretive data not generally available to all operators, as defined by the supervisor by regulation."

TED OFF Cal Section AIPG Legislative Chairman



✓ The Northern California Chapter of the American Petroleum Institute and Sacramento Petroleum Association during the past several months have had a variety of informative meetings and discussions for its members. This, in conjunction with a fairly active drilling pace in the Sacramento Valley, should carry us into the new year with a feeling of enthusiasm and anticipation.

✓ During the month of August, H. W. Bertholf was appointed by Governor Brown as the new State Oil and Gas Supervisor. Serving as his chief deputy will be M. G. Mefferd. Their appointments were effective August 15, and in making the announcement, Lew Moran, acting director of the Department of Conservation, stated that both Bertholf and Mefferd "bring to their new assignments a wealth of experience and a broad knowledge of California's total energy needs."

Mr. Bertholf had been a staff assistant with the Board of Equalization prior to his appointment as State Oil and Gas Supervisor. His experience has included positions with a number of oil and gas companies, served as an oil and gas engineer with the division for seven years, and was formerly executive secretary of the Governor's Energy Planning Council.

Mr. Mefferd has been with the oil and gas division for over 15 years, and had served as fuel allocation for the State during 1973-1974.

✓ The Northern California of API held its annual Golf Tournament and Barbecue on Friday, October 3, at the Yolo Fliers' Club in Woodland. The golf course was not as crowded as in previous years, but the "cocktail hour" and dinner were well attended to make this year's event another tremendous success. Appreciation to all those on the various committees and the companies and individuals whose donation of time and prizes made the event possible.

✓ A wide variety of talks have been presented over the past several months before members of the Sacramento Petroleum Association at the weekly luncheon meeting. The members have had the opportunity to listen to a number of informative and lucid presentations, varying from a documentary type film presented by Dick Zimmerman, Terra-Log, on a field mapping parties experiences in the Middle East during the early '60s; to an outing in the High Sierra, presented by Fred Harris, Western Mud. Someone, unfortunately, had to show home movies of this year's API Softball Tournament on June 27.

Most recent talks were those by Roland Bain, Tri-Valley Oil & Gas, November 5, on the marketing and pricing of natural gas in the Sacramento Valley, and Harold Bertholf, State Oil and Gas Supervisor, November 19, presenting a general discussion of the division's current policies and future outlook and goals.

An upcoming talk in December or January will be a slide presentation and discussion on P.G. & E.'s blowout and fire which occurred at the McDonald Island Gas Field between May 17 to June 4, 1974.

Mr. Henry F. Lippitt, II, Executive Secretary of the California Gas Producers' Association, headquartered in Los Angeles, was the distinguished speaker before members of the Northern California Chapter of the API on Tuesday, November 18. The talk was given at Posey's Cottage in Sacramento with approximately 50 members and guests in attendance for cocktails, dinner and presentation. Mr. Lippitt's presentation on California's current and future energy demands, with concentration on the natural gas industry, centered on three discussion areas, that of volumetric considerations, pricing, and legislative implications.

California's outlook for available natural gas supplies for use in homes, farms, industry and business, is seen as "gloomy" according to Lippitt. Mr. Lippitt criticized a number of state officials and agencies for the "energy shortage mess presently existing in the state." Such agencies as the Public Utilities Commission, State Lands Commission, Air Resources Board, and the Oil and Gas Supervisor were criticized as having done "little or nothing to assist in alleviating the forthcoming natural gas shortage, or to reduce the state's dependence upon foreign oil imports."

In closing, Mr. Lippitt contended that what was needed to avert the state's energy crisis is "new leadership to provide the incentive and encouragement to increase the supply of energy, especially oil and gas, to fuel the state's economy. A 'new look' is required on all official fronts so that the state's economy could once again move ahead — instead of becoming mired in the present bureaucratic 'mess'."

✓ The Sacramento members wish all a warm Thanksgiving and Merry Christmas.

TERRY PLUMB



In the issue of the PPG for July/ August/September, a statement is made about me on Page 2, that I should like to correct. I suggest this sort of thing:

CORRECTION

In the issue of July/August/September, 1975, appears a picture of me, taken by my good friend, Ed Hall, along with some comments by him. Although I knew he was taking a picture of me, it never occurred to me that it would appear in print. I have no objection; in fact, I am flattered. I know Ed's remarks came from a kind heart and a mistaken impression, so it embarrasses me to correct even a detail of his remarks.

For reasons not clear to me, I hear, from time to time, that I was the founder of AIPG, which is not the case. While I was its first president, I was only one member of a group that was responsible for founding the Institute. It was distinctly a group effort. I shall refrain from mentioning names for fear of seeming to favor one over another. It is easy enough to learn who the founders were by enquiring of Executive Director Arthur Brunton. He was present throughout the critical period.

Probably the mistaken impression about me arose from the fact that I was more visible than the others because of the extensive traveling I did for AIPG during the two years of my presidency. I just happened to be the most available.

With best wishes for PPG and AIPG.

MARTIN VAN COUVERING

The California State Board of Registration for Geologists and Geophysicists will mail the 1976-78 license renewal applications about May 15, 1976. If your mailing address has changed since the last renewal date in July 1974, please submit an address change to the board office at 1020 N Street, Room 419, Sacramento, California 95814. Failure to update an address could result in a notice not being delivered. Renewal of the geologist or geophysicist license is the responsibility of the licensee and not the board. Notices are sent as a reminder and are not required by law.

JOHN E. WOLFE

Because of conflicting professional society meeting dates, we are changing the date of the 1977 Convention of the AAPG Pacific Section to April 20, 21 and 22, 1977 (it was previously to have been held May 4, 5 and 6). Please post these new dates on your schedule.

Yours truly,

STANFORD ESCHNER Pacific Section-1977 Convention Chairman

EXPLORATION GEOLOGY FOR GEOPHYSICISTS

A Short Course Conducted by

Department of Geology University of Houston Houston, Texas 77004

Our fourth annual short course on "Exploration Geology for Geophysicists," sponsored by the University of Houston Geology Foundation, will be held in Houston, Texas from January 5 through 16, 1976. Due to the excellent response to last year's offering, we have arranged this year to conduct two simultaneous sessions at the Sheraton Inn Hotel in northwest Houston.

The course is designed primarily to fulfill the needs of geophysicists whose professional training was not geological, but it is also appropriate as a refresher course for those trained as geologists but who have subsequently concentrated on geophysical methods of exploration. Its purpose is to help geophysicists develop a deeper understanding of the nature of geologists' work, as well as its usefulness and limitations, and to enable them to communicate more effectively with geologists. Emphasis will be placed on those aspects of geology that significantly affect the occurrence of oil and gas and the means by which geological data are used to explore for these resources. At least one session will be devoted to petroleum economics.

The lecturers for the course are recognized experts in their areas of specialization, and most have had extensive experience in the petroleum industry. They have been selected not only for their technical expertise, but also for their demonstrated effectiveness as lecturers and teachers.

Course brochures, application forms, and additional information may be obtained by contacting:

> Dr. Carl E. Norman Department of Geology University of Houston Houston, Texas 77004 Telephone: (713) 749-3870



The select group of new officers of the San Joaquin Geological Society for 1975-1976 are:

President

S. E. Karp, Bakersfield College Vice President

Gardner Pittman, Getty

Secretary

H. Ralph Pegors, Welex

Treasurer

Henry Walrond, Independent

Membership Chairman Carrol Blythe, Strata Log

Continuing Education Ronald Murk, Gulf

Public Information Gordon Bell, Gulf

Newsletter Correspondent Jeff Smith, Union

Representative to Pacific Section Edward Coughlin, Occidental

On the local scene, the fourth 1975 Bakersfield College Geologic Seminar features David Butler, Chevron, with the "hot" title "Exploring for Geother-mal Energy; A Solution for Pacific Energy Problems?", December 15, 7:30 p.m. in Room 2, Math Science Building, Bakersfield College.

On December 9, the SJGS will hold its Annual Ladies' Night champagne fling featuring Dr. Duane Blume of Cal State Bakersfield who will talk about the 1971 International Himalayan Expedition.

Future plans include a February 1977 Short Course convened by Tor Nilsen, USGS, and tentatively titled Tertiary Tectonic and Depositional History of California and its Relationship to Petroleum Exploration." Also, Stan Eschner, Occidental, is the General Chairman for the Bakersfield Pacific Section AAPG Convention in May, 1977. And finally, John Sullivan, DOG, our newly elected VP was recently transferred to the gas country in Woodland (we will miss you,. John). Gardner Pittman, Getty, has ably assumed John's place on Ed Karp's support team.

JEFF SMITH





SHORT, SHORT STORY, A rock is a rock but a life is a heartthrob.

Toward the end of the day the mixed group on the geology field trip stood at the edge of the sheer cliff overlooking the rocky Northern California seacoast. Great waves curved in to break in white splendor against the black, rugged rock masses below. High overhead, a curious audience of fleecy clouds adjusted white robes and paused to listen.

"Now these rocks you see behind you," droned the instructor in the background, "are deeply decayed granites and granodiorites. Weathering is caused by chemical and physical action...

"Look!" cried a girl. "Sealions!" "Where?"

"There! See them – four of them. Right down there."

"... of water and air penetrating the fractures in the..." The instructor looked up at the broad expanse of rear views lined up along the railing.

"Now this rock here," he continued, "ahhh. .

"Isn't that a boat on the horizon?"

"Yeah. A sail boat. Oh look. There's another.'

"Ahhh...we'd better get going," said the instructor.

The bus bumped along the narrow return road. "On your right," the in-structor said into the mike, "in the field just beyond those cows, you can see huge boulders geologists call tectonic knockers..."

A woman screamed. "Look! Look! That cow! She's having a baby!'

"Where? Where?" Heads craned. Some stood up in the aisle straining to see.

"Back there! We've passed her! She's giving birth!"

... made up of erosion outliers of Franciscan..." The instructor's voice died away.

"Back up! Back up! Let's take a look!

The bus stopped, backed slowly, slowly, a hundred yards. There it was. Just starting, a bluish mass. The bus paused. Eyeballs bulged. The cow got up and started walking. Then the bus drove on, homeward, over the road, over the rocks of the good earth from which all things come, on which all life depends.

WELCOME HOME to our Past President J. Herbert Sawyer and wife Aura, newly returned (3 November 1975) from a glorious 80-day safari in dark Africa. Leaving Nairobi, Kenya, Herb and Aura in a party of 10 scientists, traveled about 2100 miles over the rough, dusty plateaus of Kenya and Tanzania in Toyota landcruisers. From Nairobi northwest into the Great Rift Valley, then southwest up onto the plateaus of the Masai Mara Game Reserve and the Serengati National Park. Of the 11/2 million wildebeest (gnu to you) estimated to exist in Africa, Herb said, "I'm sure we saw at least a million of them." Also ele-phants galore, tearing up the forests as we breach a wheatfield.

Then eastward once more into the Rift Valley to Olduvai Gorge, world famous for the discoveries of early man, Australopithecus boisei, by Dr. and Mrs. Leakey in 1959. Later finds included Homo habilis which Dr. Leakey believed to be in a direct line to modern man.

From Tinga Tinga village, Herb and Aura gazed up at Hemingway's Mt. Kilimanjaro, crowned with glistening snow. Against the white square top of the western summit, with imagination one might have seen the dried and frozen carcass of a leopard.

Leaving the Rift Valley, the party continued eastward through the Travo National Parks where elephants, zebras, rhinos, warthogs, impalas, and baboons abound. Then down the Galana River to the Indian Ocean at Malindi. After lazing on the sands in a much-needed rest, a flight back to Nairobi ended the first leg of the journey with a magnificent dinner of prime zebra steaks. Good? Yes, very good, said Herb.

"Later on we flew down to Johannesburg, South Africa. We toured the country by rail, bus and car, visiting the great hole of the Kimberly diamond mines, then on to Cape Town and Table Mountain overlooking the Atlantic Ocean." Approximately 1000 miles from Jo'burg to Cape Town. Said Aura, "While in So. Africa, we drove from Cape Town to Durban and a week later visited the Drakensberg mountains on the return trip to Jo'burg. We learned a lot and took hundreds of Kodachrome slides but we are glad to return home till the next one."

'Where next?" we asked. Herb's wan smile was answer enough, but in Aura's gleaming eyes we could see her answer-The moon, perhaps. Why not?

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NARKOTICKS. Apologies to James Woodrow Higgins, former President of NCGS, to whom we referred in our last column as HERB instead of JIM. Our conscience is prickled with selfreproach and self-pity for a fading renewal of aged brain cells forever dying in masses, daily, hourly, yes by the damnable minute.

BY THE WAY, please all take note of our new official address -

Northern California Geological Society,

c/o California Division of Mines and Geology,

Ferry Building, San Francisco, Calif. 94111

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We hope it will be permanent.

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TRUTH, one of humanity's highly, prized virtues, is as old-fashioned as the ancestral appendix. She wears no see-through dresses. Rather, as suggested by the late, prominent writer, Calvin Kentfield of Marin County, north of San Francisco, "Her simple gown is tough as leather and conceals infinite layers of undergarments. Every writer knows he can never hope to get more than a peep at the flesh beneath, yet he goes on tearing away with hopeful enthusiasm and a lustful eye ... a lunatic's job.'

If we could tear apart the Kentfield robes, we suggest that instead of the pure, satiny skin we anticipate, we might find sores, maggots and verminous little creatures that spit in our eyes. Better to have left covered, huh? Maybe?

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REMEMBER THIS ONE?

Little Willie from the mirror, *Licked the mercury all off* As he thought in childish error It would cure the whooping cough.

At the funeral, Willie's mother Sadly said to Mrs. Brown "'Twas a chilly day for Whillie When the mercury went down."

And a very MERRY CHRISTMAS to one and all from President Dave Pfeiffer and NCGS officers and the Leopard Cafe and we.

OTT KOTICK



NO REPORT.



SPRING PICNIC

The 1975 Pacific Section AAPG Picnic was held at Britt Park, Piru, California, on June 6, 1975. 150 hungry geologists and friends dined on fresh corn-on-the-cob, salad, beans, garlic bread, and fantastic BBQued steak. The food was prepared under the able direction of Pete Hall and his gourmet chefs. Beer and wine were plentiful, and some persons were observed drinking coffee. Some of the more energetic picnicers even got a volley ball game going. It was noted by some old timers that the horseshoe stakes had been moved farther away again.

The Golf Tournament was again held at Elkins Ranch, south of Fillmore, under the able direction of Don Padick. 73 golfers attacked the course, but no record was kept of those falling off golf carts, or tripping over tees. The results are as follows:

1st Low Gross: Frank Yule Trophy and 1st Low Gross Trophy – John Lidstrom, 78.

2nd Low Gross: 2nd Low Gross Trophy – Bill Mannon, 79.

1st Low Net - Flight One (100 and under): 1st Low Net Trophy – Jack West, 83-72 net.

2nd Low Net - Flight One: 2nd Low Net Trophy – Les Herndon, 89-73 net.

lst Low Net-Flight Two (over 100): lst Low Net Trophy – Tony Morris, 75 net.

2nd Low Net - Flight Two: 2nd Low Net Trophy – Jim Doorman, 76 net.

1st Low Gross - Guest: Bill McEver, 78.

1st Low Net - Guest: Joe Rossi, 73.

Highest Gross Score: Most Gross Trophy – Adrian Maaskant and Brad Johnson tied at 144.

The field trip was under the able direction of Ed Hall and Chuck Barker of Union Oil Co., Santa Paula. 61 persons rode caravan style up Torrey Canyon to view the Oakridge Fault, Santa Susana Fault, and regional geology. They also saw several oil seeps, the Tapo Ridge anticline, and several oil fields in the area. Everyone raved about the delicious box lunches provided, and much beer and soft drinks were consumed. Special thanks to Newhall Land & Farming Company for allowing access to their property. For those unable to

attend the trip, guidebooks are available from Carl Evans, Texaco, Inc., 3550 Wilshire Blvd., Los Angeles.

The success of this picnic was also due to the generous support of corporate and service companies, and individuals. The Pacific Section AAPG membership wants to express our deep appreciation to the following supporters. Please remember them they are truly our friends:

B & W, Inc.

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Again, thanks for all the help! BILL HUNTER

NATIONAL AAPG

Two Gulf Coast geologists will run for president-elect of the American Association of Petroleum Geologists in an election to be held in the spring. Frank W. Harrison, Jr., a consulting geologist and independent oil operator from Lafayette, Louisiana, will oppose Edd R. Turner, Getty Oil, Houston. The successful candidate will serve as president-elect for one year and asume the presidency in July, 1977. These and other candidates for AAPG offices were announced by John E. Kilkenny, current president.

Harrison is a native of Bastrop, La., and began his career in the oil industry with Union Producing Company in Jackson, Mississippi and New Orleans after graduating from Louisiana State University in 1950. He served a Turner is a Houston native and a 1943 graduate of the University of Texas at Austin. He served in the U.S. Army Corps of Engineers until 1946, when he joined Union Producing Co. in Beeville, Texas. He went to work for Humble (now Exxon Co., USA) in Houston in 1947, transferring to New Orleans in 1948 where he worked until 1955 when he left Humble to join Getty Oil. Since then, he has held various geological and management positions with Getty in Houston, except for a two-year tour in the home office in Los Angeles.

Candidates for vice-president are Ralph L. Miller and Gordon H. Wood, Jr., both with the United States Geological Survey, Reston, Virginia.

Miller was born in Bethelem, Pennsylvania and graduated from Haverford College and Columbia University. He has had various assignments with the USGS both in this country and internationally, and is currently staff geologist, Office of International Geology. Wood, a native of Poteau, Oklahoma, and a graduate of the University of New Mexico, began his career with the U.S. Coast and Geodetic Survey in 1942, joining the U.S. Geological Survey in 1944. He is currently chief, Branch of Coal Resources.

George S. Galbraith, an independent geologist in Abilene, Texas, will oppose Theodore (Ted) Off, president of Ojai Oil Co. in Ventura, California, for the position of treasurer.

Galbraith, a native of Memphis, Tennessee and a graduate of Mississippi State University, began his career as a geologist for General Crude Oil Co. in Abilene, later serving as exploration manager for Lamar H. Moore Drilling Co. before entering business for himself in 1958. Off was born in Los Angeles and is a Stanford graduate. He served two years in the U.S. Navy and worked briefly for Shell Oil Co. prior to joining Ojai Oil Co. as a geologist in 1954, advancing to the presidency in 1968.

Successful candidates will assume their offices on July 1, 1976. The AAPG is the world's largest geological organization, with more than 17,000 members in all 50 states and 80 countries. It is headquartered in Tulsa, Oklahoma.

CORE REPOSITORY

With the opening of a well core repository at Cal State Bakersfield by early 1976, California will cease being the only major oil-producing state in the U.S. without a well sample facility.

From more than 100,000 holes put down in the search for oil and gas in California, many cores (samples of earth) have been taken to provide information necessary for further drilling. It is to preserve an adequate sampling of cores, which probably provide more information on the state's subsurface composition than any other source, Cal State Bakersfield is establishing the repository.

Cores, sidewall samples and drill cuttings will be housed in a prefabricated steel storage building and use of the repository will be available to all interested persons on a fee basis, with qualified students having free access. Construction of the building, approved by the Board of Trustees of The California State University and Colleges, is being funded by a grant of \$42,900 from Western Oil & Gas Association.

Initially, samples will be available for examination only at the repository, but later, arrangements for loans of the material may be made. Plans call for the addition of binocular and petrographic microscopes, ultra violet lamps, rock saws and other tools.

Prime purpose of the collection is to assemble a representative subsurface stratigraphic record of California which will be of great instructional and research value not only for resident students and faculty, but for earth scientists from other areas as well.

Establishing a core repository in Bakersfield represents the culmination of many years' effort expended by the oil industry, various state agencies, professional societies and individuals with the principal problems having been location and financing.

Central location to the state's oil fields, availability of land and the natural compatibility of the program with Kern County's close relationship to the petroleum industry, were prime reasons the Bakersfield site was chosen for the repository.

Proposed annual budget for the Cal State Bakersfield facility includes \$19,300 for salaries of a curator and student assistant, office space, equipment and utilities; and \$1,700 for petrographic and binocular microscopes. An initial advisory committee worked out the budget figures for the first three years at \$21,000 per year with four organizations agreeing to supply the needed funds.

Funding organizations are the U.S. Geological Survey, \$12,000; Califor-nia Division of Oil & Gas, \$5,000; California Division of Mines & Geology, \$2,000; and State Lands Division, \$2,000.

Advisory committee members include: James R. Weddle, California Division of Oil & Gas, chairman; Fred Green, American Institute of Professional Geologists, vice chairman; John R. Coash, Dean of Natural Sciences and Mathematics, Cal State Bakersfield, executive secretary; and Victor R. Church, consultant.

Others are Ralph D. Carter, U.S. Geological Survey; Daniel P. Detwiler, Cal State Bakersfield; George H. Feister, Western Oil & Gas Association; Donn Gorseline, University of California; D. E. Ritzius, American Association of Petroleum Geologists; E. C. Sprotte, California Division of Mines & Geology; and Bill Yerington, California State Lands Division.

Observers include C. K. Fisher, USCS; Albert G. Hluza, California Division of Oil & Gas; and Ken Secor, Dean of Administration, Cal State Bakersfield.

JUDY CLAUSEN

AAPG PACIFIC SECTION **EXECUTIVE COMMITTEE MEETING** October 17, 1975 Summary of Actions

1. Motion passed to accept the minutes of August 27, 1975 Executive Committee Meeting as submitted.

2. Motion passed to exclude the Northwest Geological Society as a Cooperating Society of Pacific Section AAPG.

3. The Coast Geological Society will host the 1976 Spring Picnic.

4. The membership of the San Diego Association of Geologists will be polled to determine if they are interested in becoming a Cooperating Society of Pacific Section AAPG.

5. Motion passed to accept the Treasurer's Report with the reservation that the premium and terms of the Pacific Section's liability insurance be investigated.

6. Motion passed to accept the Finance Committee's proposed 1975-76 Fiscal Budget with reservation for the liability insurance adjustment.

7. Dues are delinguent after October 1st. The PACIFIC PETROLEUM Geologist Newsletter will not be distributed to non-paying members after November 15th.

8. S.B. 345 was passed by the Legis-

lature and will become effective July 1, 1976 requiring the release of certain oil and gas, geothermal, etc. in-formation. S.B. 756 was passed by the Legislature authorizing an appointed Board to direct the activities of the California State Division of Mines and Geology.

9. \$2,750 has been contributed by the oil companies to assist in publishing the Southern California Borderlands Volume.

10. The Directory Committee Chairman is Ms. Lynn Tennyson, Earth Science Department, Occidental College.

11. Bud Reid, President-Elect is the Chairman of the newly-formed Pacific Section Public Affairs Commit-

12. Motion passed to accept the basic Program Format for the 1976 San Francisco Convention, April 21-24, 1976 as submitted - Robert Blaisdell, General Chairman. Theme is: 'Tomorrow's Oil from Today's Provinces.'

13. The 1977 Bakersfield Convention will be held at the Convention Center, May 4-6, 1977–Stan Eschner, General Chairman.

14. Alaska is being considered as one of the prospective sites for the 1978 Convention.

15. The next Executive Committee Meeting will be held at 10:00 a.m., Tuesday, December 9, 1975 at the Quality Inn Airport, Los Angeles, Ĉalifornia.

EARTHQUAKE ENGINEERS OPEN MEMBERSHIP

The Earthquake Engineering Research Institute, a national professional association devoted to finding better ways to protect people and property from the effects of earthquakes, is now accepting applications for membership. In past years, membership in the Institute was possible by nomination only.

Members of EERI receive a Newsletter containing news and anouncements of meetings and publications. Guest Editorials on topics of special concern appear regularly in the Newsletter. The Institute also sponsors meetings, conferences and seminars on all aspects of Earthquake Engineering. By participation on EERI committees, by personal contact with other members and through EERI liaison with other organizations, EERI members have an opportunity to participate in charting the future course of Earthquake Engineering practice and research.

The Institute was founded as a (continued on page 7)

EARTHQUAKE ENGINEERS

(from page 6)

non-profit corporation in California in 1949 as an outgrowth of the Advisory Committee on Engineering Seismology to the U.S. Coast and Geodetic Survey. The current membership of approximately 375 persons includes engineers, earth scientists, architects, social scientists and representatives of several other related fields.

The work of the Institute includes investigating destructive earthquakes, holding conferences, publishing earthquake engineering reports, and advising government agencies. EERI is probably best known for its field investigations and reporting of the effects of destructive earthquakes, and more recently for its coordination of the investigative efforts of other organizations.

Under new Bylaws enacted in 1973, applications for membership are now accepted from "persons seriously interested in the advancement of earthquake engineering as evidenced by engineering design to resist earthquakes, by teaching and research in related subjects, by involvement in government functions related to public welfare and safety during earthquakes, or by other relevant activities as may be determined by the Board of Directors."

Applications for membership and additional information may be obtained from: E.E.R.I., 424 40th Street, Oakland, California 94609.

A New Publication of the Four Corners Geological Society CANYONLANDS COUNTRY

This handsome new hardcover volume entitled "Canyonlands Country" is the guidebook for the eighth geologic field conference of the Four Corners Geological Society. The three day conference traversed much of Canyonlands National Park beginning in Moab, Utah on September 24 and cnding on the west side of the Colorado River near "the Maze" on September 26. A geologic road-log of the field trip route is the focal point of the guidebook.

The 288 page book contains a total of 29 papers on the Geology, Geography, History and Archaeology of the Canyonlands. In addition a correlation chart, lexicon of geologic names in use in the area, and an annotated sky-lab photograph of the area are included. Geologic papers cover the geomorphology, stratigraphy, paleontology, structural geology and economic geology of Canyonlands and nearby areas. Specific papers include the history and geography of Canyonlands, the Anasazi habitation of Grand Gulch, the origin and history of the Colorado River, paradox basin structure, Colorado Plateau tectogenesis, lacolithic groups of the Plateau, and uranium, potash, and petroleum resources of the area. Other papers discuss each of the geologic systems outcropping in the area including the Pennsylvanian, Permian, Triassic, Jurassic, and Cretaceous. One of the more striking papers in this guidebook displays and discusses a series of 100-year apart photographs of the Green and Colorado River Canyons.

Price is \$18.00. Orders should be addressed to:

Four Corners Geological Society P.O. Box 1501

Durango, Colorado 81301

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- 1959 "Isopach Relations, late Penn., Aneth Area, Utah," a paper by M. Dane Picard\$1.50
- 1963 "Shelf Carbonates of the Paradox Basin," hardbound-273
 - pages\$10.00
- 1969 "Geology and Natural History of the Grand Canyon Region – Powell Centennial," hardbound – 212 pages, includes color printed geologic map of Grand
- 1973 "Cretaceous and Tertiary Rocks of the Southern Colorado Plateau," hardbound-218 pages\$14.00
- 1974 "Geology of the Canyons of the San Juan River," Southeast Utah, 94 pages, soft cover, includes river log from Bluff to Clay Hills

Crossing \$2.00 1975 "CANYONLANDS COUNTRY," hardbound-288 pages \$18.00



Once again the new season was kicked off with a successful fall barbecue held at the Lagomarsino Ranch in Ojai. Sixty-one celebrants enjoyed a steak dinner prepared by Jack Knight, Ralph Cahill, Dick Berger, Glenn Gregory and myself. Pete Hall brought his banjo – they were both great.

Nick Nicholeris wrested the horseshoes' championship from last year's champ, Ralph Cahill, when Cahill couldn't win a game. The Bocci Ball title went to Doug and Pat Traxler, no one remembers the drinking champ, and the pool players won't claim a champion. The first dinner meeting of the 1975-76 season was held jointly with the Coastal Section of the Society of Petroleum Engineers on October 28. This meeting featured Thane McCulloch, AAPG Distinguished Lecturer, discussing "Geology of the Santa Barbara Oil Spill - Before and After."

On Tuesday, December 16, a similar topic will be presented when Mr. William Brisby, instructor in Marine Biology at Moorpark College, compares the marine life surrounding Rincon Island to that along the coast line. The talk will include a film. This will also be ladies' night, so if you plan to attend, try to bring your wife or girlfriend (but not both, please).

TOM HOPPS, Secretary



Annual Dinner-Dance

The Los Angeles Basin Geological Society held its annual joint AAPG-SEG-SEPM banquet on Saturday, November 22 at the U.S. Naval Station Officers' Club on Terminal Island. The (continued on page 8)

PACIFIC SECTION — AMERICAN ASSOCIATION PETROLEUM GEOLOGISTS			
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LOS ANGELES ...

(from page 7)

event was attended by 140 people and was termed a great success. The Society wishes to thank the following contributors who sponsored the cocktail hour preceding dinner:

Anderson, Warren and Assoc. Inc. Borst and Giddens Oil Well

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- Treasurer Nancy B. Olsen Texaco Inc. Suite 1100 3550 Wilshire Blvd.

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Our next LABGS luncheon promises to be a good political discussion. The speaker will be Robert Finch, former

NEWSLETTER Pacific Section A.A.P.G. P.O. Box 17486 Foy Station Los Angeles, California 90017 California Lieutenant Governor. His topic will be, "Oil and Politics." This meeting will be held at Roger Young Center on Thursday, December 18, 1975 at 12:00 noon.

The January LABGS luncheon will have AAPG distinguished lecturer Dr. Daniel A. Busch speaking on "Integrated Disciplines in Petroleum Exploration." The luncheon will be at Taix's Restaurant, January 15, 1976, at 12:00 noon.

TOM REDIN

RECOMMENDED READING CALIFORNIA GEOLOGY, vol. 27,

no. 10, October 1974

- Man-made diversion of Furnace Creek Wash, Zabriskie Point, Death Valley, California, by Bennie W. Troxel
- Zoning for surface fault hazards in California: The new special studies zones maps, by Earl W. Hart
- CALIFORNIA GEOLOGY, vol. 27, no. 11, November 1974
- Geology and land development in Ventura County, Summary by A. P. Stokes (Director), and Blase A. Cilweck (Engineering Geologist, Department of Public Works, County of Ventura
- NEVADA BUREAU OF MINES AND GEOLOGY (Mackay School of Mines, University of Nevada, Reno)
- Report 21: Geothermal exploration and development in Nevada through 1973, by Jarry J. Garside\$1.00
- Map 48: Aeromagnetic map of Nevada: Vya Sheet. Prepared in cooperation with the U.S. Geological Survey. 1974\$2,50

Map 49: Gravity map index of Nevada, by John W. Erwin. 1974 \$2.00

WASHINGTON DEPARTMENT OF NATURAL RESOURCES, DIVI-SION OF GEOLOGY AND EARTH RESOURCES, Olympia, Washington 98504

- Bulletin 67: Mining laws of the State of Washington\$1.50
- Information Circular 51: Piercement structure outcrops along the Washington Coast, by Dr. Weldon W. Rau and Gerald R. GrocockFree
- GM-7: Preliminary geologic map of the Newport No. 1 quadrangle, Pend Oreille County, Washington, and Bonner County, Idaho\$1.00
- GM-8: Preliminary geologic map of the Newport No. 2 quadrangle, Pend Oreille and Stevens Counties, Washington\$1.00
- GM-9: Preliminary geologic map of the Newport No. 3 quadrangle, Pend Oreille, Stevens and Spokane Counties, Washington\$1.00
- GM-10: Preliminary geologic map of the Newport No. 4 quadrangle, Spokane and Pend Oreille Counties, Washington, and Bonner County, Idaho\$1.00
- GM-11: Complete Bouguer gravity anomaly map of Washington, compiled by Dr. William E. Bonini, Daniel W. Hughes and Z. F. Danes. (Translucent overlay for the Div. of Geology and Earth Resources Washington State Geologic Map)\$2.50
- GM-12: Thickness of unconsolidated sediments, Puget Lowland, Washington, compiled by Kurt L. Othberg, and John B. Hall\$1.00

LUCY E. BIRDSALL