PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section

American Association of Petroleum Geologists

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A MESSAGE FROM THE PRESIDENT

In my last two columns I acquainted you with two thirds of the Pacific Section Executive Committee and the work they are doing for our professional society. The remainder of the Executive Committee will be the grist for this column.

Vic Church (Consultant) has been active in the local and National AAPG since long before I met him. His interest in the preservation of cores caused him to be in on the planning and opening of the California Well Sample Repository at Cal State Bakersfield. He has championed the cause of core preservation at the National AAPG level as well and kept us apprised of their efforts. He has most recently been the chair of the Honors and Awards Committee for the Pacific Section, a position he resigned as I was writing this column. He will continue as a member of the committee.

Phil Ryall (Consultant) has been active in the Pacific Section on and off over the years. He is currently the chair of the Committee on Legislation and Public Affairs. Phil keeps an eye on Sacramento and notifies us of impending bills before the Legislature as well as anything else going on in the world that may impact our membership.

Bob Lindblom (Consultant) is a past President of the Pacific Section (1986-87). He has served in numerous jobs for the local society, the Pacific Section and the National AAPG. He keeps us on our toes by making sure we follow the bylaws of our society. He knows them well since he had a big part in rewriting them two years ago. Bob is the chair of the Committee on Constitution and Bylaws and he has agreed to chair the Committee on Honors and Awards effective immediately. Bob recently stepped down as President of the California Board of Registration for Geologists and Geophysicists. Bob continues to be an active proponent of the Pacific Section at the National level where we are often overwhelmed by the large Sections in Oklahoma and Texas. We appreciate his long and continued involvement in the Pacific Section.

Jack West (Epoch) is a past President of the Pacific Section (1988-89). In addition to working on convention committees, he recently was our liaison to the National AAPG Advisory Council and is currently the representative on the Executive Committee for the California Well Sample Repository.

As you hopefully have noticed in reading my last three columns, there are many geologists in the Pacific Section AAPG who feel it is worth while to spend some of their time keeping our professional society intact. These people are some of the hardest working and most generous I have ever known. They are definitely people who believe that being a geologist is not the same as being a plumber. If you have the time let some of them know that you appreciate their efforts. The work they do is for everyone's benefit. Dwindling attendance and participation at the society meetings and the annual conventions makes me think of a line I once read..."Her love was stalwart, but her patience was tried".

— Larry Knauer
President

Inside this issue . . .

Unique Contributions of California to the History of the Oil Industry

PART III – The Lakeview Gusher

Presented by Michael S. Clark, Steve Mulqueen, John Nichols, J. P. Chauvel, and Dean Van Zant in conjunction with the Carpinteria Valley Museum of History, Santa Paula Union Oil Museum, West Kern Oil Museum, and the Kern County Museum at the National Convention of the American Association of Petroleum Geologists, San Diego, May 19-22, 1996.

Dean Van Zant, the Kern County Energy Coordinator, will present the story of the Lakeview Gusher at the Spouses Night dinner meeting of the San Joaquin Geologic Society on 2/11/97. Please call George Stewart at 321-4150 for reservations or additional information.

California has had many gushers, starting with Adams No. 16 in 1888 and continuing with "Old Maud" at Santa Maria field in 1904. But none of these came close to rivaling the Lakeview No. 1 of Midway-Sunset field which flowed, uncapped and untamed, at 18,000 barrels a day for 18 months in 1910 and 1911.

Julius Fried, a grocer by trade, picked the site for the Lakeview No. 1 because he thought a clump of red grass indicated good oil land. When Fried and his partners naively spudded their well in the axis of a syncline on New Years day in 1909, hopes ran high. Yet drilling progressed slowly, and their company went broke at 1,655 feet. Neighboring Union Oil offered to help and took over operations, but only in their spare time when crews were available.

"Dry Hole Charlie" Woods, a driller with a string of "dusters" to his name, was assigned to the well. Charlie's luck changed on the morning of March 15, 1910, when the well came in with a roar from a depth of 2,225 feet and blew the crown block off the top of the derrick with an estimated initial flow of 125,000 barrels a day. On coming to work that morning, Charlie solemnly commented that Lakeview "must have cut an artery of the earth's great central storehouse of oil, whereas all previous wells had been merely pinpricks in the earth's thick hide."

A roaring column of sand and oil twenty feet in diameter and two-hundred feet high sent a stream of oil, dubbed the "Trout Stream" flowing down every adjacent ditch and gully. Rather than diminishing in force, the flow grew stronger and eventually buried the engine house in a mountain of sand. Although the wooden derrick remained standing a few weeks longer, eventually it too, and all the drilling equipment as well, were completely swallowed up by a huge crater formed by the gusher.

Torrents of oil poured from the wild well, and hundreds of men worked round the clock building sand-bag dams to contain the crude in twenty large sumps. The flow continued unabated, and thirty days after the first gush was estimated at 90,000 barrels a day. The Lakeview No. 1 quickly became America's most famous gusher.

A four-inch pipeline leading to eight 55,000 barrel tanks about 2-1/2 miles away was installed in the amazingly short time of four hours. From the tanks, an eight-inch line carried the oil to Port Avila on the California coast.

Lakeview's roaring and spouting began to be measured, not in days, but months. It seemed little discouraged by the feeble efforts of humans to control it. Besides the labor of holding the oil, there was constant anxiety and fear. Adjacent landowners sued. Workmen cursed the sticky flood and labored in fear that spray from the well, carried on the wind for up to ten miles, could cause accidental fires. Preachers and their flocks prayed that oil might not cover the earth and bring about its flaming destruction. The entire oil industry wilted as this seemingly inexhaustible fountain brought crude prices down to 30 cents a barrel. Even Union Oil Company, with endless lawsuits, labor bills and low-priced crude on its hands, began to despair of having made the "richest" oil discovery in history.

Despite precautions, a nearby well known as "Tightwad Hill", blew out and caught fire midway through the life of the Lakeview gusher. Apparently, light from the Tightwad well was so bright that tourists were able to view the distant Lakeview gusher even at night.

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In desperation, a wooden box of massive timbers was pulled over the gusher with heavy cables, but oil still spurted out at 48,000 barrels a day. Eventually, this box too was destroyed by a huge crater that formed with a central cone of sand thirty feet high.

The gusher was finally brought under control on October, 1910 by building an embankment of sandbags, a hundred-feet in diameter, around the well and its crater. When this embankment reached a height of twenty feet, it created an oil pool over the crater that was deep enough to reduce the flow of oil from an uprushing column to a gurgling spout.

When the bottom of the hole caved in on September 10, 1911, the well died. Although Lakeview No. 1 produced 9.4 million barrels during the 544 days it flowed, less than half of this oil was saved—the rest evaporating off or seeping into the ground.

Even after the old hole was cleaned and new casing installed, Lakeview No. 1 never again flowed more than 30 barrels a day and was finally abandoned. Because deeper wells drilled nearby missed the reservoir from which the old well produced, they were dry holes. Two which did penetrate this reservoir found it drained. One well, Lakeview No. 2, did strike oil in May, 1914, but from a different sand at a depth of 2,622 feet. No. 2 flowed 1700 barrels a day and produced 38,376 barrels of oil and 15,000 barrels of emulsion before the 4-1/2 inch casing collapsed just above the oil sand.

Easily missed, the Lakeview reservoir was a narrow, oil-filled sand channel, a few feet wide by a mile long, that stood on edge beneath an angular unconformity. In fact, the Lakeview No. 1 actually missed this channel by 45 to 75 feet, yet oil pressures within the reservoir were so great that the oil forced its way out through the enclosing shale and into the adjacent well bore to create the greatest gusher California has ever known.

Further Reading

Latta, F., 1949, Black gold of the Joaquin: Caxton Press.

Rintoul, W., 1976, Spudding In: Recollections of pioneer days in the California oil fields: California Historical Society.

Rintoul, W., 1990, Drilling through time: California Department of Conservation, Division of Oil and Gas, Sacramento, California.

Welty, E. M. and Taylor, F. J., 1966, The 76 Bonanza: the life and times of the Union Oil Company of California: Lane Magazine and Book Company.

ELK HILLS SALE

DOE announces strategy to sell the Elk Hills field in segments,hoping to increase the value of the asset and the number of small and mid-sized companies submitting bids.

Patricia Fry Godley, Doe's Assistant Secretary for Fossil Energy, was in Bakersfield on Oct. 16 for a public meeting outlining the government's strategy to sell its 78-percent share of the Elk Hills Naval Petroleum Reserve.

More than 100 prospective bidders and others interested in the Elk Hills sale attended the meeting at Bakersfield's Red Lion Hotel. A similar meeting conducted the day before in Houston, Texas, was attended by about 50 representatives from the oil industry and investment firms.

DOE plans to offer an "operatorship interest" made up of a significant portion of the government's share of the field. The buyer of this "operatorship interest" would take over operations of the field. In addition, DOE will offer multiple undivided, non-operating working interests to allow smaller and mid-sized companies the opportunity to acquire ownership and access to the light crude oil that is produced at Elk Hills. The field's surface facilities, such as the gas plants and co-generation plant, also might be sold separately if it would result in returning more money to the government.

The sales strategy was developed from recommendations of CS First Boston and Petrie Parkman & Co., the investment bankers advising DOE on the divestiture. "Our approach will create a fair and highly competitive sales environment," Godley said, noting that DOE is seeking to maximize the value of the asset and ensure a broad diversity of bidders.

In addition to Chevron, which owns the remaining 22 percent of the Elk Hills field, some of the other companies represented at the meeting included ARCO, Cal Resources, Occidental, Pennzoil, Shell, Texaco, Mobil, Torch Energy, Santa Fe Energy, Enron and EOTT Energy.

Assistant Secretary Godley also told those attending the meetings that DOE and Chevron are involved in negotiations to come up with an operating agreement which clarifies what Chevron's relationship will be with the new owner or owners. DOE expects to issue a solicitation of offers in April 1997, and Godley said she hoped such an operating agreement would be in place for potential bidders to examine during the time data rooms are open, which is scheduled for May to July 1997.

DOE has set a September 1997 deadline for companies to submit purchase proposals. Legislation calls for the field to be sold by February 1998, unless sufficiently high bids are not received.

GEOLOGISTS ON THE MOVE

Scott Kimler from STA (Elk Hills) to Occidental (Bakersfield)

Dave Shiflett from STA (Elk Hills)to Occidental (Bakersfield)

Harvey Deutsch from Bechtel (Elk Hills)
to Landmark (Austin, TX)

Ridge Dorsey from Bechtel (Elk Hills) to STA (Bakersfield)

Terry Thompson from Bechtel (Elk Hills)
to Mobil (Bakersfield) to Texaco (Kern River) (HUH?)*

David Umali from UNOCAL (Bakersfield) to Bechtel (Elk Hills)

Geologists Mike Clayton, Mike Ponek and Larry Drennan
are among the Texaco geologists relocating to Bakersfield
from Denver

** The Pacific Section stationary and the 1997 Convention Committee stationary don't know where Terry is, but we found him:*

Terry Thompson, Texaco E&P Inc.
P.O. Box 5197X, Bakersfield, CA 93388
(805) 392-2464: (805) 392-2905 fax:
e-mail: thompt1@texaco.com

SEX, SEX and more SEX

Have we got something planned for you in May!

By the time this newsletter reaches you the deadline to submit abstracts to the National AAPG for publication in the AAPG Bulletin will have passed. However, you may still get your abstracts in to the Pacific Section AAPG Convention Committee for inclusion in the brochure that will be mailed out in February. It may be possible to get the AAPG Bulletin to print late abstracts in a later issue.

I am disappointed that the response to our call for papers has been so meager. The technical sessions on "Horizontal Drilling Reviving Mature Oil Fields" and "Midway Sunset: a Super Giant Field" are great opportunities to bring out your basic Production Geology talks. We can use a few more papers to round out these sessions. So how about an abstract. I know you can do it.

The convention is the forum that brings us together to share information and to get to know one another better. It facilitates the exchanging of ideas through formal presentations and casual conversations. A professional society thrives on the input of its members or dies in their apathy. Get involved in your society by giving a paper or volunteering to help on one of the committees. You will find it rewarding.

By the way, the title of this piece was there only to attract your attention. Sorry. ☹

Happy New Year!

Public Workshop on DOE Class III Project at Midway-Sunset Field Held

A public workshop on the technical results of the design phase of the Midway-Sunset oil technology demonstration project was held at the Four Points Sheraton Inn in Bakersfield on December 5, 1996. The purpose of the workshop was to discuss the work completed so far and outline where the project will go from here.

The project is a reactivation of the Monarch Sand in the ARCO Pru Fee lease of the Midway-Sunset field. The lease, shut-in since 1987, has benefited from integration of modern reservoir characterization techniques including coring, logging and simulation methods. Cyclic steaming was being used to establish baseline production during the first phase of the study. The second phase, due to begin in January 1997, will employ a continuous steamflood to test the incremental value of this method as an alternative to cyclic steaming. Objectives are to return the shut-in portion of the reservoir to commercial production, accurately describe the reservoir and recovery process and to convey the details of this activity to the domestic petroleum industry.

The workshop began with a project summary presented by Steven Schamel of Energy & Geoscience Institute of the University of Utah. Creties Jenkins of ARCO E&P Technology Center discussed the integration of core and log analysis on the Pru 101 well. Stratigraphic characterization, geostatistical modeling, reservoir simulation and baseline testing results were also presented. An examination of portions of the conventional core was made available to the attendees.

Information on the project is available on the internet at http://www.egi.utah.edu as well as through a dedicated computer located at the local California Division of Oil & Gas office.

Remote Sensing Topics on the Internet

by James Ellis, Chevron Overseas Petroleum, Inc.

The Internet offers a fundamentally different way for the remote sensing community (and CAD, GPS, GIS and DEM communities) to communicate. Internet is in addition to many on-line library, commercial, and specialized bulletin boards (Globerman, March 1995, Geotimes). However, working with Internet can be like looking for a book in a library without a card catalog. In addition, there are many ways to access data that are not well documented and are confusing to the casual user. Many find surfing takes too much time and simply want a list of applicable Internet address to type in for "immediate" routing to the correct place.

Home Pages, mailing lists, and newsgroups seem (at the moment) to be quite popular on the Internet. Journal and trade magazines are a good starting point for the Web. Especially focus on practical applications on the Internet for remote sensing and related technologies are ASP&RS, GIS World, EOM, EOS, AAPG Explorer, Geotimes (see Appendix C and D). I recommend going to the library and looking through these publications for the last year. Some good Internet articles for our applications include Brown (1995, AAPG Explorer), Globerman (March 1995, Geotimes) - who discusses newsgroups and mailing lists, and Thoen (December 1195, GIS World) - who gives detailed guidance on mailing lists. With a Web Browser (such as Netscape), no one seems to need any guidance to find and use Home Pages because of some amazing behind-the-scenes work and the easy-to-use GUI interface.

11.1.1 Home Pages on Internet's World Wide Web (WWW)

Journals seem to have taken up the task of compiling pertinent Home Pages (Universal Resources Locator - URL address or typically http://www.....) on behalf of the remote sensing community. If you have a web browser, the Web home pages are available to you. We used JPL's "bulletin board" that is at the NASA/JPL Imaging Radar Home Page (http://southport.jpl.nasa.gov/) to find people who had figured out how to read and load NASA Space Shuttle SIR-C radar data. People came to our assistance and within a matter of days, we were processing the data. Interactive bulletin boards are not that common. Many home pages require you to phone, FAX, or e-mail in order to begin a dialogue or to obtain a simple reply to a question.

The following is just a short summary of URL addresses that are of interest:

U.S. Government sources of information and data (from Budge and Morain, February 195, GIS World)

Ames Research Center - http://www.arc.nasa.gov/
Earth Observing System (EOS) - http://www.cos.nas.gov/
Earth Science Information Center - http://info.er.usgs.gov/education/esic.html
Goddard Space Flight Center - http://www.gsfc.nasa.gov/GSFC.homepage.html
Jet Propulsion Lab - http://www.jpl.nasa.gov/
Johnson Space Center - http://www.jsc.nas.gov/jsc/home.hmtl/

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DEG Environmental Issues in Perspective

ACID RAIN

By Rogge Marsh
Chairman, Environmental Issues Committee

The issue:

Acid rain forms when nitrogen and sulfur oxides combine with moisture in the atmosphere to form weak sulfuric amd nitric acid solutions. It can be deposited as rain, snow, fog or dew. All rain is acidic to some degree with a pH averaging about 5.0

After the discovery in the early 1970's that some lakes and streams in the eastern United States were unusually acidic (pH<5.0), acid rain became "the poison falling from the skies" and a major aspect of the concern over air pollution. In 1980, the EPA declared that acid rain has acidified lakes in the northeast a hundredfold since 1940; the National Academy of Sciences predicted and "aquatic silent spring" by 1990. At that time, Congress mandated the National Acid Precipitation Assessment Program (NAPAP), a 10-year, $600 million study of the issue.

What do we know today?

For U.S. anthropogenic emissions, electric utilities account for about 70 percent of sulfur dioxides (Sox); transportation and utilities account for 70 percent of nitrogen oxides (Nox). Since their peak years in the 1970s, these emissions have dropped by 23 and 28 percent respectively. Natural sources are small. Other than red spruce, there is no evidence for widespread damage to forest due to acid rain. Acidic deposition has negligible impact on crops.

Only 240 of New England and New York's 7,000 lakes have pH at or below 5.0. These lakes are usually found in poorly buffered soils with coniferous forests and heavy growths of sphagnum moss. Paleolimnological studies of lake sediments have shown that many high altitude Adirondack lakes have been acidic and fishless throughout most of their history. Only in the 19th century did logging and forest fires result in more alkaline, higher pH runoff into lakes and streams, causing sport fish to survive in lakes previously uninhabitable.

A historical study of a New Hampshire ecosystem from 1963 to 1993 showed declines in Sox and Nox in streams and precipitation. Stream water and precipitation throughout the period also showed rising pH. However, calcium, both in runoff and in soils and tree bark appears to be declining, thus reducing the area's ability to buffer against natural and anthropogenic acidity. Moreover, further reductions in atmospheric sulfur and nitrogen oxides likely will have little near-term effect in countering acidification.

What can we do tomorrow?

Clearly we now know much more about acid rain's role in the life of the planet. It is apparent that most of what was said in the early 1980s was overreaction based on too little information. But the damage these pollutants inflict on life forms is still and issue - albeit not a burning one. Do we continue to reduce utility and transportation emissions, or seek other, more effective means to restore the forests' vitality?

It has been predicted that a 90 percent decrease in sulfur might yield 0.2 pH increase, but utility bills would double. A better choice might be liming lakes and forest soils in the affected areas. One NAPAP study estimates that all Adirondack lakes and ponds < 5.7 pH could be limed for $177,000 per year. A lot cheaper than emission controls of doubtful efficacy.

Two of these young men grew up to be fine, upstanding citizens and the third one grew up to be a geologist. He celebrated his 40th birthday on New Year's Eve. Congratulations to Terry Thompson, one of Texaco's newest and oldest geologists.

The Cusa Flats Monitor

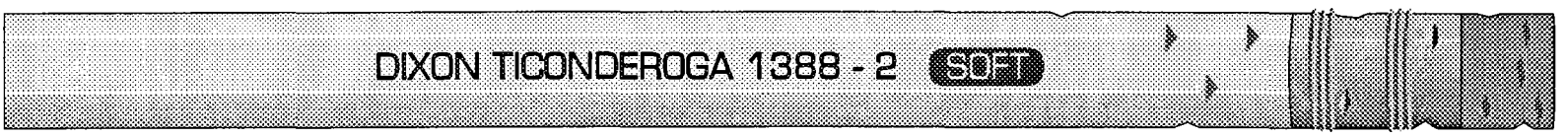
August 29, 2098

THE LEGEND OF THOMPSON, the KING IS DEAD, LONG LIVE THE KING!

A startling discovery was made today on the 100th anniversary of Thompson Day, at the Cusa Flats Mining site. Members of the work crew narrowly missed the tiny object which has archeologists buzzing about "proof" that Thompson existed. The object (pictured below) is believed to be an antiquated writing tool of the late 20th century. Marks indicate that the wooden case was chewed upon, a trait many attribute to Thompson.

Lawrence Knauer IV, spokesman for the Cusa Flats Historical society, believes that this is the proof they have been seeking by saying his will vindicate my Great-Grandfather, who insisted that they worked with Terry Thompson. He died a broken man, trying to keep the memory of the 'King of Horizontal Wells' alive." While James Brady III, a spokesman for Cusa Mining dismissed the find as "Hogwash."

Terry Thompson was crowned "King of the Horizontal Wells" by his adoring co-workers in the late 20th century. Following the Great Land Grab of 1998, members of CUSA reportedly destroyed evidence, trying to keep the "King" from becoming a martyr. All records of that time have since been destroyed and what remained were the rantings of co-workers.



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Marshall Space Flight Center - http://www/msfc.nasa.gov/
NASA - http://hypatia/gsfc/nasa.gov/NASA homepage/html
NOAA - http://www/noaa.gov/
Stennis Space Center - http://moses/ssc/nasa/gov/
USGS - http://www/usgs/gov/

U.S. Government distributed active archive centers (from Budge and Morain, February 1995, GIS World):

EROS Data Center: -
http:/sun1cr.usgs.gov/landdaac/landdaac.html
Goddard Space Flight Center - http:/daac.gsfc.nasa.gov/
Hughes Applied Information System -
http:/edhs1/gsfc.nasa.gov/
Jet Propulsion Laboratory - http://seazar.jpl.nasa.gov/
Langley Research Center - http://eosdis.larc.nasa.gov/
Marshall Space Flight Center -
http://www.daac.msfc.nasa.gov/
NOAA-Satellite Active Archive -
http://ns.noaa.gob/saa/homepage.html
Oak Ridge National Lab - http://www.eosdis.ornl.gov/

Regional Earth Science Information Center Offices e-mail addresses (from Budge and Morain, February 1995, GIS World):

Anchorage EISC - gduroche@isdmnl.wo.usgs.gov
Denver ESIC - jlist@usgs.gov
Menlo Park ESIC - izorker@isdmnl.wr.usgs.gov
Reston ESIC - jshanton@isdmnl.wr.usgs.gov
Rolla, MS ESIC - phone: 314-341-9375

Best "GIS" Internet Sites for 1996 (Hemenway, January 1996, GIS World):

USGS - http://www.usgs.gov/
ESRI (ArcInfor fame) - http://www.ersi.com
GISnet BBS MapInfo Support Page -
http://www.csn.net/gis/mapinfo/
REGIS: envir.planning GIS at Berkeley -
http://regis.berkeley.edu/
NASA: http://www.nasa/gov/
GPS: http://www.utexas.edu/depts/ftf/fcraft/notes/gps/gps.html

Some on-line directories (Hemenway, January GIS World)

Commercial geography resources -
http://lorx.geog.scarolina.edu/geogdocs/otherdocs/comm.html
Earth and environmental science - http://www.usgs.gov/network/science/earth/gis.html
GIS www resource lists -
http://www.geo.ed.ac.u/home/giswww.html
GIS and remote sensing resources -
http://www.ianrwww.unl.edu/ianr/calmit/c_gisrs.html
GPS general information sites - http://www.inmet.com/pwt/gps_gen.html
On-line resources for earth scientists -
http://www.gisnet.com/gis/ores/gis/hyper.html
Remote sensing and GIS information -
http://www.gis.umn.edu/rsgisinfo/rsgis.html
The www virtual library: remote sensing -
http://www.vtt.fi/aut/ava/rs/virtual/

Other Internet Home Page Sites:
GIS World magazine - http://www.gisworld.com
ASP&RS - http://www.asprs.org/asprs
Canadian Center for Remote Sensing -
http://www.ccrs.nrcan.gc.ca
RADARSAT - http://radarsat.espace.gc.ca/

11.1.2 Internet Mailing Lists

Mailing lists are widespread and if you can get on Internet, all you need is e-mail to participate (for excellent overviews, see Globerman, March 1995, Geotimes and Thoen, December 1995, GIS World, p. 36-37 -- most of the following is extracted from the latter's article).

A mailing list is essentially an on-line discussion group dedicated to a particular topic or interest. You use the server address for commands (subscribe, unsubscribe, help, etc.) and the list address to talk to humans. If you want to subscribe to a list, first send a message to the server address and follow what hopefully will be good instruction - including typing in "subscribe", the list you want to be on, maybe your name - maybe not...

The following is a summary of active mailing addresses from both reference above that may be of interest:

GIS-L (general GIS topics)
Server: listserver@idi.net
List: GIS-L@idi.net
or
Server: listserver@urisa.org
List: GIS_L@ URISA.org

IMAGRS-L (image processing and remote sensing)
Server: listserv@uga.cc.uga.edu
List: IMAGRS-L@earn.cvut.cz

MAP-L (map and air photo systems forum)
Server: listserv@uga.cc.uga.edu
List: MAPS-L@uga.cc.uga.edu

General geology discussion group:
geolgoy@ptern.bitnet@cunyvm.cuny.edu
GIS: gis-l@ubvm.cc.buffalo.edu
Quarternary Period: quarternary@moragan.uc.mun.ca

11.1.3 Internet Newsgroups

Usenet groups or newsgroups are another communication forum that allow Internet users to post questions, requests, announcements, etc. about a particular topic (Globerman, March 1995, Geotimes).

INTERESTED IN A PETROLEUM ENGINEERING MASTERS DEGREE OR JUST PICKING UP A CLASS FOR TECHNICAL UPDATING?

SPRING 1997 COURSE OFFERING:

PTE 411x - Introduction to Transport Processes in Porous Media (3 credit units) Properties of porous rock; capillary effect, single phase and multiphase flow through porous media; diffusion and dispersion, miscible displacement, heat transfer.

PTE 412x - Petroleum Reservoir Engineering (3 credit units) Properties of reservoir fluids, volumetric and material balances for gas and oil reservoirs; reservoir modeling concepts.

PTE 508 - Numerical Simulation of Subsurface Flow and Transport Processes (3 credit units) Formulation and solution of the equations describing the underground flow of fluids through porous media. Includes mass (contaminant) transport in single and multiphase flow.

The course schedule will run from early January through early May and each class will meet one evening per week.

For more information, contact Program Coordinator, Freda O'Brian at 321-6612.

Open Letter to California Oil and Gas Producers:

To receive a two-hour free initial consultation from a designated PTTC Trouble Shooter Team assigned to your case, take advantage of this opportunity by filling out the information sheet required for case designation. The service will be based on the first come first served basis. *To obtain a copy of the form, please call PTTC at (213) 740-8076.* Beyond the free start-up session, there is absolutely no obligations on your as a producer to follow through with the initial recommendations by the PTTC Trouble Shooters. Should you decide to employ their services afterwards in the capacity of consultant, service provider, researcher or advisor, you need to make separate arrangements with the individuals. On issues related to environmental compliance, PTTC Trouble Shooters from regulatory agencies will continue their supportive role at not cost to you.

$ DATA ... DATA ... DATA $

On January 15, 1997 the Petroleum Technology Transfer Council (PTTC), Pacific Section, AAPG, CIPA, SPE, USC, DOE, USGS, CDMG, DOGGR, and CCCOGP will cosponsor a one day Focused Technology Workshop on Petroleum Geology in California at the University of Southern California campus in Los Angeles. The purpose of this workshop is to gather together the independent oil companies and smaller producers from California and introduce them to the new computer technologies available and to the consultants and other oil companies who can apply this new technology to find more oil. The workshop will provide a launching pad to the professional societies and the PTTC. Exposure to the actual state of the art computer hardware and software will be provided. Case histories of California oil fields will be presented. If you are interested in participating or attending please contact Iraj Ershaghi at (213) 740-0321, or Don Clarke at (310) 570-3915.

HELP!

The AAPG Foundation provided more than $293,0000 in 1995-96 for support of the following scientific and educational programs:

Grants-in-Aid	$90,000
Distinguished Lecture	28,000
AAPG Bulletin	40,000
Secondary Education	7,600
Energy Resources Library	91,800*
Other projects & programs	35,800*

** Funded through the Foundation's General Fund*

As the Foundation's resources increase, the amount available for programs will multiply.

The Foundation Trustees have expressed a compelling need for a broader donor base, in order to protect the Foundation's tax exempt status. They have specifically asked the AAPG leadership to communicate this need to our members.

The Internal Revenue Service has very strict "tests" which are used to determine whether a public foundation is in compliance witht the U.S. Tax Code requirements. One of the primary checkpoints is to verify that at least 33.3% of the Foundation's total annual income is derived from ordinary contributions.

Several times in the past few years, the Foundation has been on the brink of failing this test, so the Trustees ask that this message be widely publicized among the membership. Currently about 2.5% of our AAPG membership supports the Foundation. If that percentage were to increase significantly, there wouldn't be a problem in satisfying this IRS requirement.

You can help . . . first, by making your own personal tax-deductible contribution using the form below, and then by making other AAPG members aware of the situation, particularly those in your local societies and sections.

The bottom line is **EVERY** gift is important, regardless of the amount contributed!

Yes, I want to contribute to the AAPG Foundation and support its efforts to further the science and knowledge of geology.

Name: _____

Address: _____

_____

City: _____ St: _____ Zip: _____

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Please complete the following information concerning how you would like to make your contribution. Your check should be made payable to the *AAPG Foundation.*

I have enclosed $ _____.

I pledge an additional $ _____.

Please send me a reminder billing by the following date: _____.

❑ Secondary Education Fund ❑ General Fund

❑ Distinguished Lecture Fund ❑ Grants-in-Aid Fund

❑ Other (specify) _____

In memory of _____

In Honor of _____

YOUTH ACTIVITIES - K-12

SCIENCE PARTNERS NEEDED!!!: Bakersfield School District has it's Science Concepts and Learning through Exploration (S.C.A.L.E.) program started with Stella Hills Elementary School as the pilot. The science program is an inquiry based teaching process for K-6 developed by Cal Tech under a National Science Foundation grant. A critical part of the program is involvement of Science Partners. The role of the science professional in our program is one of support and side-by-side participation. Most teachers do not have a science background and often feel at a loss when they approach science instruction. During training sessions on the S.C.A.L.E. science units, science professionals work alongside teachers to increase their comfort and confidence in their ability to teach science as a process rather than as a set of facts.

The science professional can model the scientific process through questioning, forming and testing hypotheses through experimentation, analyzing and questioning results leading to further exploration and experimentation. Science professionals model the use of open ended questions and being a facilitator of learning rather than just someone who delivers information. Also modeled is the use of variables and the questioning of results and conclusions for validity.

Science professionals can be as involved as their schedule and interest allow. Roles include working alongside teachers in training sessions, Leadership Team positions, visits to the classrooms to work alongside students, and other activities. During our teacher training sessions, it is best if we have one science professional working with each group of 2-4 teachers.

The science professional is an integral link in the structure of the program that will provide effective inquiry based science activities designed foe active learning at all grade levels. A Scientist Training session will be held at California State University Bakersfield, January 8, 1997 from 6 - 8 PM. A light dinner will be served. Please contact Paul Henshaw (805 395-6436) or Rob Negrini (805 664-2185) for more information.

SCIENCE BOWL, Science Fair and National Engineering Week : Volunteer solicitations have gone out for Kern County. Thanks to all who have already responded. Have you all responded? For more information on the Science Bowl, call Todd Goode (805 763-6067). For Science Fairs and National Engineering Week call Paul Henshaw (805 395-6436) for more information.

COMMUNITY ENERGY NIGHT

April 23, 1997
Red Lion Hotel
3100 Camino Del Rio Ct.
Bakersfield, California

Held in conjunction with

Energy Awareness Week

Speaker: Ms. Sandra Waisley, Deputy Asst. Secretary of Energy

Topic: Elk Hills

Oil industry sponsorships and tickets will be on sale in January for $30/person. For more information, please contact Kyle Koerner at (805) 399-4270.

California Geology With or Without Computer Graphics
PTTC Focused Technology Workshop - Petroleum Geology

January 15, 1997

Davidson Conference Center
University of Southern California

For further information call:
(213) 740-8076, or visit
http://www.usc.edu/dept/peteng/pttc.html

NEWS FROM THE AFFILIATED GEOLOGICAL SOCIETIES

Northwest

LaConner Symposium

Twenty five NWEA members attended the Fall Meeting at the quaint resort village of LaConner, Washington in September. A dozen speakers from Oregon; Washington; Menlo Park, California; Denver, Colorado; and Miami, Florida presented talks on Energy, Earthquakes, Oil Spill Clean-up and Geology. The banquet program covered the interesting history of the Skagit Valley.

Congratulations to Steve Pappajohn, Conference Chairman; Pete Hales, Session Chairman; and Julie O'Toole for handling finances for the conference. Many thanks also go to Weyerhaeuser, Pacific Gas Transmission and Northwest Natural Gas for the loan of personnel and contribution of money to the conference.

The Field Trip on Tuesday was attended by approximately 16 persons. Steve Pappajohn was Field Trip Leader assisted by Terry Mitchell. The Field Trip tour included: the NESCO cogeneration plant at Sumas, Washington, Pacific Gas Transmission main compressor station at Sumas, the huge INTALCO Aluminum plant near Ferndale, Washington, the Epic Resources well-site in the Bellingham basin where gas was flared and then to the "Burning Bush" well near Ferndale where gas has been burning for 70 years since its abondonment.

ENERFIN RESOURCES 1996 DRILLING

Enerfin Resources, Houston, Texas, drilled two wells in the Mist Field in September 1996. This is the first drilling in the area since 1993:

Enerfin Col. County #32-27-65 TD 2084' Susp. 9-20-96

Enerfin J. Hancock #31-20-54 TD 2436' P&A 9-29-96

NORTHWEST NATURAL GAS - STORAGE

Northwest Natural Gas is currently running 3D Seismic on its new Mist Field Storage projects. Earlier this year NNG began plans to add 3 new storage pools to its Mist Field operations. Northwest Natural operates two storage pools at present, the Bruer and Flora Pools. The new pools are located in the Calvin Creek and Adams Storage Project areas.

MARK YOUR CALENDARS!

The following speakers are scheduled for upcoming NWEA meetings:

January 1997 - John Smith, Oregon PUC Commissioner, Topic - TBA

March 1997 - Jack Meyer, Northwest Natural Gas, "3D Seismic Results at Mist Gas Field"

February, April & May 1997 - Speakers - TBA - If you are interested in speaking, or know of someone who is, please contact Bill Prehm. (May 1997 meeting will be held in Washington.

Please call Shelley Thomas at (503) 693.9822 (please leave message on machine, if no answer) or Treck Cardwell at (503) 220-2573.

Northwest Energy Association
P.O. Box 6679
Portland, OR 97228-6679
Contact: Bill Rodgers (503) 294-9681

Alaska

UPLIFT & EXHUMATION OF MT EVEREST, NEPAL

Presented by Dana Coffield, PhD., ARCO Alaska, Inc.

The Himalayan orogen is the largest and most spectacular example of an active continent-continent collision occurring in the world today. It has resulted from collision of a Gondwana-derived micro-plate (the Indian subcontinent) with the Eurasian landmass, and the subsequent indentation and partial subduction of the Indian subcontinent. This collision has influenced worldwide climate, seawater composition, and adjacent crustal uplift and subsidence patterns. The orogen has experienced a sustained uplift of 0.5-1 mm/a for the last 20 my, resulting in erosion of 10-20 km of crust and the formation of the largest submarine fans in the world (Bengal/Indus fans). The orogen also contains the highest mountains in the world, including the highest, Mount Everest at 8,848m.

In 1990, a suite of 13 rock samples along a 50 km long traverse up the south (foreland) flank of Mount Everest was collected over a range of elevations from 2,560 m to 8,848 m for apatite and zircon fission track analyses. The rates and timing of Himalayan exhumation events recorded by these rocks provide constraints on geologic models and characterization of the tectonic evolution of the Himalayan orogen. These include a 2-3 Ma phase of rapid colling a 7-8 Ma phase of exhumation which coincides with major changes in Himalayan vegetation, and a 10-20 Ma phase of cooling which occurs soon after widespread syntectonic crustal melting-related magmatism in the Miocene.

The analysis also provide constraints on the extensional tectonics which were active during the formation of the orogen. A more protracted cooling history is recorded for rocks above a major, orogen-parallel, hinterland-dipping extensional detachment fault, located beneath the summit of Mount Everest, that was active during the uplift of the orogen in an overall compressional regime.

These results will be reviewed, comments on the regional tectonic setting will be made, and images will shown of what is truly a spectacular laboratory, physically and culturally for orogenic studies.

Alaska (cont.)

Alaska Geological Society
P.O. Box 101288
Anchorage, AK 99510
Contact: Sue Karl (907) 786-7428

Sacramento

GRAY & ASSOCIATES RETURN TO ARMENIA

Gray & Associates received a 6 month contract for providing seismic acquisition, data processing and interpretation training for the Republic of Armenia. Mr. Robert Hinson with SeisTech, made the first trip in late August to review the existing equipment and develop proposed plan for seismic equipment needs and implementation of new hardware. Mr. Dale Gray, President of Gray & Associates, is scheduled for a trip in December to meet with the representatives of the Ministry of Energy and Fuel and the United States Agency for International Development (USAID) to develop a field operations and training schedule. Field operations is planned for Spring of 1997, at which time, 200 kilometers of seismic data acquisition is scheduled. This data will be processed and interpreted by Gray & Associates in their Scottsdale office. The results of this study are intended to be a follow up to the California Energy Commission project that was done in 1994.

Obituary

(Excerpts from obituary in the Sacrament Bee, October 1, 1996)

Bruce D. Brooks died of cancer September 28, 1996 at the age of 69.

His career began after World War II Navy service with a decision at the University of Southern California to switch from pre-medicine to geology. His mother wanted him to be a doctor, but his father helped design oil drilling rigs for Wilson Manufacturing Company in the 1930s.

In 1951, he signed up with Superior Oil Company as a roughneck on a drilling rig near Ventura. Soon he was transferred to Sacramento, where he became Superior's expert for the Sacramento Valley. He went to work for Dow Chemical Company in 1959 and five years later launched Capitol Oil.

His son, Steven one of three grown children, joined the firm after graduation as a geologist from USC.

In a newspaper interview, Mr. Brooks attributed his success to hard work, knowledge of the region's geology and luck.

For example, the first natural gas well he ever drilled, in 1964 near Dixon, yielded more than $5 million in gas. And in 1983, while drilling for natural gas, he made the first oil discovery in the Sacramento area in 24 years.

"He was on of the last of a dying breed of oilmen with a 'wildcatter' mentality, and it showed in his zeal for life," said Monte Doris, executive vice president of Capitol Oil.

To friends and colleagues, he left the impression of a man who had reached that enviable state of someone who had achieved precisely what he set out to do.

Noon luncheon meetings are held at the HUNGRY HUNTER RESTAURANT, 450 Bercut Drive, Sacramento.

For luncheon reservations, please call Kim at Delta Environmental Consultants, Inc. (916) 638-2085 at least one day in advance.

Sacramento Petroleum Association
P.O. Box 254443
Sacramento, CA 95865-4443
Contact: Owen Kittredge
(916) 638-2085

San Joaquin

Our schedule for future events is as follows:

1/14/97 - Brian Zaitland, *AAPG Distinguished Lecturer*, "High-Resolution Sequence Stratigraphy of Incised Valley Systems"

*2/7/97 - (LUNCHEON) - Marianne Weaver, *AAPG Distinguished Lecturer*, "Impact of the Application of Sequence Stratigraphy on Reservoir Management"

2/11/97 (SPOUSES NIGHT) - Dean Van Zant, *Kern County Energy Coordinator*, "The Lakeview Gusher"

3/11/97 - Jan Gillespie, *California State University*, "Comparison of Foreland Basin Subsidence in SW Alberta and NW Montana"

4/8/97 - Glenn Gregory, *consultant* "Midway-Sunset Oil Field"

5/13/97 - TBA

6/10/97 - TBA

Dinner meetings are held the second Tuesday of each month at the American Legion Hall, 2020 "H" Street, Bakersfield, CA. The social hour starts at 6:00 p.m., and dinner is served at 7:00 p.m. with a talk at 8:00 p.m. following dinner. **Contact George Stewart at 321-4150 for more information.**

** In conjunction with the CSUB Geology Club*

San Joaquin Geological Society
P.O. Box 1056
Bakersfield, CA 93302
Contact: Mike Simmons
(805) 321-4113

Northern California

Normal Faulting in the San Anderas off San Francisco *(topic of October Meeting)*

NCGS members were given an interesting perspective of San Andreas Fault behavior in the Bay Area by **Dr. Mary Lou Zoback** of the U.S. Geological Survey. Menlo Park. Her presentation **"3-km Right Step in the San Andreas Fault and Persistent Normal Faulting in the 1906 San Francisco Earthquake Epicentral Area"** focused on active seismicity in a small region of the San Andreas Fault on the shelf just west and offshore of the Golden Gate, and extending inland onto the San Francisco Peninsula. Mary Lou opened with a brief discussion of the famous 1906 earthquake rupture zone, and some interesting observations of seismic activity that has produced three >7.0 earthquakes along the San Andreas in the Bay Area since 1838. A network of Global Positioning Stations stretching across northern California from Columbia in the Sierra Foothills to the Farallon Islands has registered ~40mm/yr. Movement along this portion of the San Andreas from June 1995 to February 1996, attesting to continued creep activity on this portion of the fault. The south San Francisco Peninsula seismic activity is attributed to thrust faulting around the San Andreas due to fault normal compression caused by a slight left bend in the fault that has uplifted the south Peninsula and Santa Cruz Mountains.

Seismic work of Alan Cooper (1971) and a recent high resolution aeromagnetic survey by the SUGS indicate an abrupt ~3 km right step to the NE in the San Andreas Fault less than 5 km offshore from Golden Gate Park. The combined aeromagnetic and seismic surveying interpretation is a graben structure that comes to land at the Colma Valley south of Daly City. Similar right-stepping geometry is indicated for the San Gregorio right-lateral strike-slip fault to the west. A young sedimentary basin up to 2 km thick has been imaged between these two fault systems, and is thought to be contemporaneous with the Merced formation exposed for 23 km along the Colma Valley. The ~3 million year age for the base of the Merced is proposed as the initiation of strike-slip faulting along the currently active portion of the San Andreas from the Pilarcitos Fault, and the beginning of tensional forces that open up the small basin off the Golden Gate.

Mary Lou closed by pointing out how the right-stepping geometry in this area may have controlled the nucleationpoint and bilateral (two direction) rupture style of the 1906 quake, which bares striking esemblance to the 1994 Kobe, Japan, 7.0 magnitude earthquake. The NCGS wishes to express its thanks to Mary Lou for presenting this subtle aspect of San Andreas Fault geometry and its effects on recent seismic activity in the Bay Area.

January 16,1997: Family Presentation On The Holy Land

It is with great pleasure that the NCGS announces a very unique family-oriented presentation at its January 16, 1997 meeting. We are fortunate to have as speaker that evening renowned geophysicist Dr. Amos Nur of the Stanford University Department of Geophysics. Dr. Nur has spent over 25 years contributing to the field of geophysics and seismology, and has a keen interest in biblical archaeology of the Holy Land. His presentation will be a nontechnical view of biblical ruins and their association with paleoseismic (ancient earthquake) activity in this earthquake-prone region.

Our Program Chair, John Karachewski, has arranged to have this excellent family entertainment held at the Lindsay Wildlife Museum in Walnut Creek. A map with directions to the Museum will be available at the December 12th NCGS meeting, and will be included in the January, 1997 NCGS newsletter. In the meantime, here is a brief abstract if Dr. Nur's talk to whet your intellectual (or perhaps biblical) appetite!

EARTHQUAKES, ARMAGEDDON, AND THE DEAD SEA SCROLLS

Presented by Dr. Amos Nur, Department of Geophysics, Stanford University

Why are there so many ruins especially in the Mediterranean and Middle East? Most people think that time and war are responsible. But actually most of the damage we now know was caused by historical earthquakes. Simple examples are Troy, Micenia, Crete, and ancient Jericho. A special example is Armageddon - the single most excavated site in Israel. Because it is situated on top of an active earthquake fault, we believe now that its 42 layers of destruction are the result of repeated past earthquakes. Another example is the huge earthquake of 31 B.C. in ancient Judea. We now think that this earthquake caused collapse in many caves in the Qumran area where the Essenes wrote the Dead Sea Scrolls. New evidence suggests that many scrolls, and some of their writers, were buried in the caves in which they were found, not by enemies, but by this earthquake.

Understanding the major roles of earthquakes in archaeology this provides a new insight into the interpretation of excavated evidence from areas like Central America, Peru, and China.

Date:	**January 16, 1997**
Location:	**The Lindsay Wildlife Museum 1931 First Avenue Walnut Creek, CA**
Time:	**7:00 pm Refreshments (No Dinner) 7:30 pm Program by Dr. Nur**
Cost:	**$5.00 for NCGS members; spouse & family are free.**

Call the NCGS recorder at (510) 842-0592 for reservations.

No. Cal. Geological Society
9 Bramblewood Court
Danville, CA 94506-1130
Contact: Dan Day (510) 294-7530

Coast

1/21/96-Dalton Lockman & J. Schwalbach, *Monterey Formation of the Santa Ynez Unit.*

2/18/96 - Jeff Milton, *Geology of the Undeveloped Oil & Gas Fields of Central Offshore Santa Maria Basin.*

3/18/96 - Rick Blake, *Lawerence Livermore Laboratires Site Investigation.*

Coast Geological Society
P.O. Box 3055
Ventura, CA 93006
Contact: Imelda Cragin
(805) 681-4052

Los Angeles Basin

Los Angeles Basin Geological Society Resurrected!!

The Pacific Section Executive Committee and eight members of the LABGS met on November 14 at the Long Beach Petroleum Club to discuss the moribund condition of the Society. Due to the transfer of some key individuals and the demise of UNOCAL as a California company, luncheon technical programs ceased last year. Mark Legg kept the fires burning, but needed some assistance to get things rolling again.

Stepping up to the plate are Don Clarke (City of Long Beach), Reinhard Suchsland (McFarland Energy) and Curt Henderson (City of Long Beach), who along with Mark Legg (ACTA) are going to see if they can revive any interest in having an AAPG affiliated society in the Los Angeles basin . They plan to have an AAPG Distinguished Lecturer, as well as one or two other talks. They are also planning a field trip.

There are still 126 members in the LA area who are Pacific Section members and by virtue of geography (and the fact that they paid their dues) also members of the LABGS. There are also about 400 National AAPG members in the area.

Look for mailings announcing the talks and the field trip. Support your local society.

Los Angeles Basin
23430 Hawthorne Blvd., Ste. 380
Torrance, CA 90505
Contact: Mark Legg (310) 378-6254

Short Supply/Drill Pipe

IADC (Independent Association of Drilling Contractors) and its allies are pulling out the stops in support of H.R. 2822, which would allow the Secretary of Commerce to temporarily suspend countervailing and dumping duties on imported products when no U.S. product is available. Imported oil country tubular goods, including drill pipe, are now subject to such duties in many cases, the result of a petition filed two years ago at the International Trade Commission by seven U.S. steelmakers. The resulting duties caused prices on much imported drill pipe to skyrocket by nearly 50%.

On April 18, past IADC Government Affairs Chairman Jay Reynolds of Rod Ric Corp. represented the Association in a meeting with Representative Bill Archer, R-Texas, chairman of the House Ways and Means Committee. Mr. Archer is a strong supporter of "short supply" legislation. Then, on May 2, Government Affairs Vice Chairman-Land Gary Green of Gary Drilling Company, testified at a hearing of a subcommittee of the House Small Business Committee on the need for temporary duty suspension legislation from the standpoint of a small drilling contractor.

The meeting with Mr. Archer was particularly critical, as the Ways and Means Committee's Subcommittee on Trade is considering the IADC-supported bill designed to permit penalty-free pipe imports when shortages occur. H.R. 2822, introduced by Representative Phillip Crane, R-IL, wouldn't dismantle existing antidumping laws. Instead, it provides a mechanism to temporarily suspend duties, thereby alleviating domestic shortages without requiring U.S. users to pay punitive tariffs. Mr. Reynolds outlined the severe problems drilling contractors have in replacing ageing drill pipe stocks and with the lengthy delivery schedules for new pipe. He further explained to Mr. Archer how the value of a new string of drill pipe is often greater than the value of the entire rig.

In July, IADC met with representatives of the steel industry for the first time to develop a dialogue on the growing shortage of drill and line pipe in the U.S. The two sides expect to meet again under the auspices of the Trade Subcommittee of the House Ways and Means Committee. This latter meeting will fulfill a specific request of Both Congressman Crane and Archer.

Momentum in favor the temporary duty-suspension measure is gathering steam. A group led by IADC met with the staff of Texas Senator Kay Bailey Hutchison to make the case for her introduction of a Senate equivalent to H.R. 2822. That group included representatives from Berg Steel, Compaq, Exxon, Hewlett-Packard, IBM, the Steel Service Center Institute, and Sun Microsystems. Senator Hutchison's sponsorship is sought because she is a key a member of the Senate Commerce Committee and therefore has considerable potential influence with the Department of Commerce, which administers the federal "dumping" laws.

In a further positive development, the chief Republican and Democrat on the Trade Subcommittee recently jointly sent a letter to the Department of Commerce expressing interest in "issues relating to the antidumping and

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countervailing duty statutes concerning instances in which downstream users cannot obtain products from domestic users." This is a most significant development, because for the first time it expresses interest in the "short supply" issue by Charles Rangel, cheif Democrat on both the Trade Subcommittee and the full Ways and Means Committee. Up to this point, the House Democrat leadership has strongly opposed even a discussion of potential solutions to the problem.

IADC encourages you to contact your Congressman, especially those Congressmen from oil-producing states including: Bill Archer, R-TX; Sam Gibbons, D-FL; Jimmy Hayes, R-LA; Greg Laughlin, R-TX; Jim McCrey, R-LA; and Bill Thomas, R-CA.

CIPA's Position on PTTC

Dan Kramer, Executive Director of CIPA, attended all three PTTC workshops and presented luncheon talks about the plight of independent producers in California. Kramer mentioned that the PTTC is about making opportunities available to the upstream oil and gas industry. He emphasized that various organizations would benefit from the PTTC's existence due to its impact on increasing production which, in turn, would translate into higher income. These organizations include all producers, service and supply companies, regulatory agencies dealing with California petroleum industry, and trade associations such as CIPA, WSPA and IOPA.

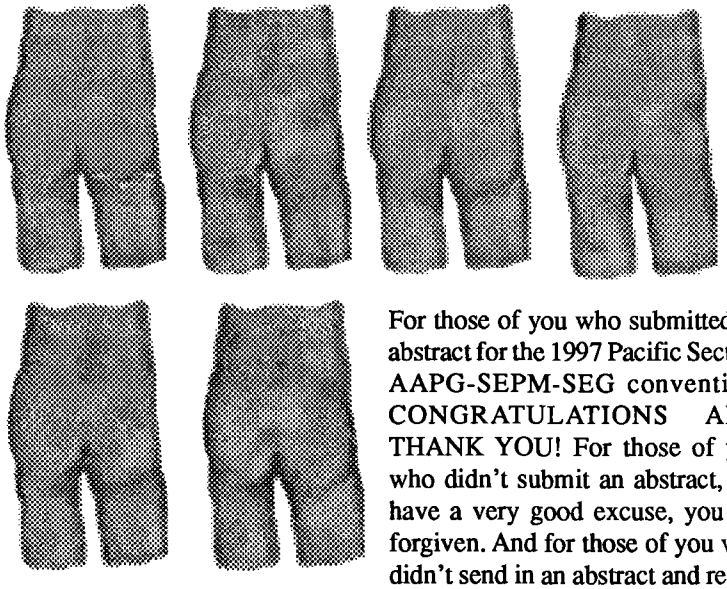
In the case of the producers, Dan suggested that the PTTC would make technology and application of technology easier and readily available even to the smallest producers. He mentioned that the producers would get expert advice, gain access to technology developments from across the country, and would also receive training through various forums and workshops. He also cited that The West Coast Center could be used as another information exchange and networking tool amongst the producers.

Kramer suggested that The West Coast PTTC's aim is to help producers apply technology to extend the life of existing production, increase recovery, improve efficiency, aid in environmental compliance and to reduce costs. He then mentioned that he hopes the PTTC resources and staff would serve as an R & D center for independent oil companies.

In Kramer's view PTTC can provide vital information to the Service Companies that would directly assist their producer clients. He spoke of the additional opportunities created through the listing services, on line consulting opportunities, and referrals that PTTC can offer which in turn would put the service companies in direct contact with the producers. He talked of the critical need for the participation of service companies due to the fact that shared expense is vital in keeping companies in business and the industry healthy.

According to Kramer complying with regulations has become a major factor in the oil producers operations. He then suggested that the PTTC could provide a forum for positive interaction between the producing community and the regulatory agencies. This forum should be used to educate producers on the particular regulatory requirements as well as an opportunity to share mutual expertise. Furthermore, he mentioned that the PTTC's efforts could help extend the life of California production which would in turn extend the life of the regulatory bodies to the oil industry.

Finally, he noted the PTTC's existence would not be an opportunity without cost. He spoke of the original funding for the program provided by the DOE which has been subjected to criticism and has been targeted for elimination. He encouraged the producers to support and use PTTC's resources and consider it their own by providing continuous feedback to the West Coast Resource Center.



For those of you who submitted an abstract for the 1997 Pacific Section AAPG-SEPM-SEG convention, CONGRATULATIONS AND THANK YOU! For those of you who didn't submit an abstract, but have a very good excuse, you are forgiven. And for those of you who didn't send in an abstract and really haven't got a good excuse for you lack of participation (you know who you are) please refer to this photo.

Is it You, Is it Me, Who's Next?

Dear Pacific Section Members:

We are having the 1997 Pacific Section Convention in Bakersfield. The 1998 convention will be in Ventura. We are considering several locations for the 1999 convention, one of which is in Monterey, California. Monterey has a new Embassy Suites Hotel that can handle our convention. The room rates are reasonable. There are 22 research facilties and approximately 1000 scientists and researchers in the area. The newest California State University is in Monterey (CSUMB). There is a Monterey Bay Geological Society which could serve as the focal point for organizaing the convention. We are interested in your comments and suggestions regarding the selection of locations for conventions. Please drop us a note at P.O. Box 1072, Bakesfield, CA 93302 in the next couple of weeks. Thanks!

1996-97 AAPG Distinguished Lecture

High Resolution Sequence Stratigraphy of Incised-Valley Systems: General characteristics and Common Variants With examples from the Western Interior Seaway

Brian A. Zaitlin
PanCanadian Petroleum Ltd., Calgary, Alberta, Canada

Abstract

Incised valleys systems (IVS) created during a relative sea level fall and back filled during its subsequent rise constitute one of the most common scenarios of hydrocarbon-producing Cretaceous IVS reservoirs in the Western Canada sedimentary basin (WCSB). Theoretical considerations and observations of many modern incised-valley systems indicate that the stratigraphic organization of the entire valley fill, and of the estuarine deposits in particular, is predictable, and is controlled by changes in accommodation space. At the most general level, all valley fills can be classified as either "simple" or "compound", depending on whether they consist of a single depositional sequence or more than one sequence, respectively. Simple valley fills are most common in small valleys confined to low-gradient coastal plains (i.e., coastal-plain valleys), whereas compound systems are more common in larger incised-valleys that have their headwaters in a (mountainous) hinterland (i.e., piedmont valleys).

Any simple valley fill, or each sequence in a compound fill, can be subdivided longitudinally into three segments. Segment 1 is the most seaward part of the valley, lying between the lowstand and initial highstand shorelines; segment 2 is the middle section and corresponds to the dimensions of the estuary at the end of the transgression; and segment 3 is the most landward portion, lying landward of direct marine influence throughout its history. Estuarine deposits will be present in segments 1 and 2, but are absent, by definition, from segment 3. The idealized vertical succession of facies differs between segments 1 and 2 in relation to where the two segments lie with respect to the initial highstand shoreline (the shoreline location at the "turn-around" point between the transgressive and highstand systems tracts). In segment 1, estuarine deposits overlie lowstand and transgressive fluvial deposits and typically exhibit a transgressive stacking of facies. Estuary-mouth facies are typically partially to completely removed by wave or tidal ravinement as the shorline backsteps, and the remaining estuarine deposits are overlain by marine sands and/or muds. In segment 2, open marine deposits are absent because this segment lies landward of the initial highstand shoreline. In the ideal case, transgressive estuarine deposits themselves capped by a regressive estuarine succession that forms as the estuary fills at the beginning of the highstand. The maximum flooding surface lies near the middle of the estuarine succession and passes seaward into marine shales above the ravinement surface.

The following examples from the WCSB demonstrate how this approach has been used by PanCanadian Petroleum Limited in the characterization of lowstand to transgressive IVS reservoirs.

Lower Cretaceous Glauconitic Formation reservoirs along the Countess-Alderson (C-A) trend are interpreted to be part of a larger IVS trend extending from the Hoadley (LST) barrier system in central Alberta, Southward for more than 535 km into the United States. The C-A part of this trend extends for over 90 km through PanCanadian lands, and contains 122 pools with cumulative production in excess of 100 million bbl of oil and 200 bcf gas. Pool optmization/development studies integrating geological, petrological, 3-D geophysical, and reservoir engineering data have been used to better understand the geological controls influencing current production. The majority of pools produce from backstepping [LST to TST] fluvial and estuarine bayhead delta {BHD] and central basin {CB] deposits, characteristic of segment 1.

The Countess "O" pool has produced 5.7 million bbl of oil in 22 years. Well sorted quartzarenites are interpreted to have been deposited in a complex network of tidally-influenced BHD distributary channels. To the south along trend, the Lake Newell project has defined 5 pools with 15.3 million bbl of recoverable oil in a compound IVS. The main reservoir consists of LST-ET BHD distributary channel deposits overlain by CB mudstones in a series of retrogradationally-stacked parasequences. The Johnson "B" pool, containing 4.3 million bbl, lies further south along trend, and is interpreted to be composed of a lower, coarsegrained chert and kaolinitic-rich "basal quartz" unit, incised by a Lower Glauconitic Formation IVS BHD complex.

In contrast to the segment 1 deposits described above, the (Lower Cretaceous) Lloydminster (Glauconitic-equivalent) IVS of the Senlac field lies within a separate paleovalley system to the east of the C-A trend. Senlac contains 84.3 million bbl OOIP and is located within a 25 km long by 8 km wide embayment along the north flank of a paleotopographic high. The distribution of facies is interpreted to represent a compound IVS, with LST

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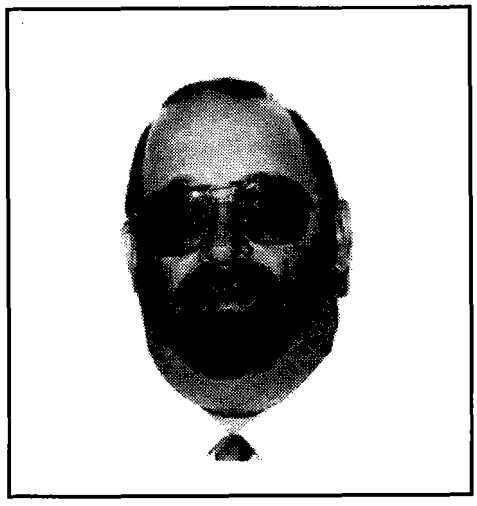
fluvial deposits overlain by a complete wave-dominated sandy estuarine complex representing segment 2 of a larger north - south -trending IVS. The reservoir facies are associated with the sandy barrier (shoreface, tidal inlet, and flood-tidal delta deposits) located at the seaward end of the estuarine complex.



Brian Zaitland, AAPG distinguished lecturer, will be the featured speaker at the 1/14/97 dinner meeting of the San Joaquin Geologic Society. Please call George Stewart at 321-4150 for reservations or additional information.

ASSOCIATION FOR WOMEN GEOSCIENTISTS TO OFFER CHRYSALIS SCHOLARSHIP

The Association for Women Geoscientists is pleased to announce that at least two Chrysalis Scholarships will be awarded on March 31, 1997. The **$750 awards** will be given to geoscience Masters or PhD candidates to cover expenses associated with finishing their theses. The Chrysalis Scholarship is for women who have returned to school after an interruption in their education of one year or longer. The support can be used for anything necessary to assist the candidate in completing her thesis, such as typing, drafting expenses, field work, or child care.

Applications should be made by February 28, 1997. The applicant should write a letter stating her background, career goals and objectives, her involvement in both the geosciences and her community, how she will use the money, and explain the length and nature of the interruption to her education.

The applicant should also submit two letters of reference. The reference letters should include a statement of the applicant's prospects for future contributions to both the geosciences and her community. Her thesis advisor should also include when the candidate will finish her degree and what requirements are as yet to be completed.

For information on obtaining an application or for additional information please contact:

Chrysalis Scholarship
Association for Women Geoscientists
G & H PRODUCTION COMPANY, LLC
518 - 17th Street, Suite #930, Denver, CO 80202
303-534-0708; 303-623-6724 (Fax)

1996-97 AAPG Distinguished Lecture

Impact of the Application of Sequence Stratigraphy on Reservoir Management A retrospective Analysis of Field Development and Depletion Experiences

Marianne T. Weaver
Exxon Production Research Company, Houston, Texas

Abstract

To better understand the impact of the application of sequence stratigraphy on field development and depletion, Exxon initiated a project that examined the use of this technology in the reservoir management of many of the corporation's major oil and gas fields. Analysis of Exxon's experience consisted of the evaluation of fifty-eight fields, documentation of individual case studies, and the completion of a cost/benefit analysis for two production affiliates. The results of this analysis demonstrate that there are quantifiable benefits and reservoir management improvements resulting from the proper use of sequence stratigraphy during all stages of field development, including appraisal, initial, mature, and final depletion stages. The documented benefits include reserve additions at competitive finding costs, depletion cost savings, and development of improved reservoir surveillance tools. These benefits can be very large when the sequence-stratigraphic studies are fully integrated with additional field data and interpretations, and the fields selected for study meet the appropriate criteria.

In older fields, with large remaining reserves in place, the application of this technology can provide a better understand of complex reservoir distribution and a method to improve primary, secondary, and tertiary recovery. For example, in a North Sea field, the development of a detailed sequence-stratigraphic framework has let to the development of new and accurate maps and procedures to monitor contact movement and improve reservoir surveillance capabilities, resulting in the identification of by-passed oil. In new fields, optimizing the number and placement of development wells can provide significant investment savings and can potentially lower operating costs. When correctly applied at the appropriate stage of field development, fully integrated, sequence-stratigraphy field studies will result in obtaining maximum ultimate hydrocarbon recovery at the lowest full-life cost.

*** NOTE: Marianne Weaver, AAPG Distinguished Lecturer, will be the featured speaker at a special luncheon on 2/7/97 presented by the CSUB Geology Club in conjunction with Occidental Petroleum and the San Joaquin Geological Society. Please call George Stewart at 321-4150 for reservations or additional information.*

Open Letter to Academicians, Researchers, Consultants, Retired Oil and Gas Professionals and Professionals in Regulatory Agencies:

To join in a coordinated effort for reducing the number of idle wells and the rate of well abandonment in California and to provide inspirations to oil and gas producers in California with their technological and research needs, you are invited to apply for the designation of "PTTC Trouble Shooter". With this designation, you will be recognized as a concerned and qualified oil and gas professional who has pledged 24 hours or more per year of complimentary service to PTTC. As a "Trouble Shooter" you will be asked to participate in brain storming sessions with oil and gas producers who are seeking new ways to complete wells, to characterize their reservoirs and find additional reserves from existing fields, to reduce operational problems and to handle environmental compliance matters with regulatory agencies. Most of these coordinated discussions will be through pre-arranged audio or video conferencing and Internet based chat sessions. For sessions requiring traveling to sites outside your place of residence, PTTC will provide the transportation and the lodging cost. These brain storming sessions will in turn help you as a professional to become more aware of the technological needs of the operators and to establish contacts to offer your expertise to the interested parties. To receive the applications materials, please contact PTTC at (213) 740-8076.

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PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section

American Association of Petroleum Geologists

MARCH 1997 NO. 8

A MESSAGE FROM THE PRESIDENT

The Pacific Section Convention planning and organizing is coming along fairly well. **Bob Timmer** (Mobil Oil), our 1997 convention General Chairman, has managed to keep track of everything in spite of having to do it long distance much of the time. **Frank Cooper** (Halliburton) says he has a few exhibit booths left. If you want to show your stuff, give Frank a call. His new telephone number is (805) 665-4050. For your dining and drinking pleasure **Diane Hill** (Mobil), **Allen Waggoner** (WZI), **Dede Krough** (Mobil), **Vikki Presmyk** (DGI) **and Jaime Roig** (Berry Petroleum) are hard at work to make sure everyone has ample opportunity to eat, drink and be merry.

I would like to thank everyone who made the effort to get the **technical program** together. We have over 100 abstracts, submitted and accepted, which have been organized into ten oral presentation sessions and a poster session. Two short courses and three field trips are also planned. It is all looking pretty good. Look for the Convention Announcement/Registration booklet in the mail.

John Randall (CUSA) has accepted an assignment overseas and was not able to finish his tour of duty as the AAPG Advisory Council member for the Pacific Section. Luckily, we have **Bob Countryman** (CUSA), who has agreed to taking on another role for the Pacific Section. He will be our member of the AAPG Advisory Council effective immediately.

Bob Countryman and I had the opportunity to attend **AAPG Days** in Tulsa the first weekend in February. Over 100 people from all over the country, as well as a few from other countries, gathered in Tulsa and reviewed, discussed and pondered the activities of the AAPG. It was an energetic and enthusiastic group. I extended invitations to everyone to attend the Pacific Section convention. **Bob Cowdery**, President of AAPG has accepted and will speak at the opening session.

In my previous columns I have acquainted you with the officers and volunteers of the Pacific Section, and the projects on which they work. Through their efforts we are able to put on conventions, short courses, field trips and publish books, maps and cross sections. Income generated from these activities is used to promote geological activities, science education and public relations. During the last twelve months the Pacific Section and its members have been involved with and funded the following activities:

1) purchased 10 seats (1 table; $300) for **Community Energy Night**
2) gave five $100 **scholarships** to **K-12 teachers** who register to take a class on the geology and mineral resources of Kern County at CSUB
3) donated $2500 to the **Dibblee Foundation** for publication of a new geologic map
4) approved $5000 to publish the 1997 Pacific Section **AAPG/SEPM/SEG membership directory**
5) put $5000 in a **scholarship** fund set up in memory of **John Kilkenny**
6) gave $1400 to the Pacific Section **SEPM** for their participation in the 1996 convention
7) gave $500 to the Pacific Section **SEG** for their participation in the 1996 convention
8) rebated money to each of the seven **affiliated societies** in proportion to their number of Pacific Section members and participation in the extended mailing program
9) donated $1000 to the **California Well Sample Repository**
10) approved $2000 to publish a field guide to the **Midway-Sunset field and Temblor Range**
11) approved $3000 to publish a book on the **Northern San Joaquin Basin Gas Province**
12) have agreed to donate money (amount yet to be determined) to the effort to build a first-class, hands-on museum about the oil industry at the **Kern County Museum**
13) funded two **Distinguished Lecturers** for local societies
14) provided funds (**Van Couvering Awards**) to eight students to attend the 1996 convention
15) sent money donated by the members on their dues cards to the California Well Sample Repository, the Dibblee Foundation, the Van Couvering Awards fund and the John Kilkenny Scholarship fund

Continued on page 2

Continued from page 1

As you can see our efforts are consistent with our primary mission of disseminating geological information and, whenever possible, are done through community outreach programs.

See you at the convention!

Larry Knauer

Take a look at the line-up of Technical Sessions that your 1997 Pacific Section Convention Committee has organized for your cranial stimulation. Hope to see you in Bakersfield (May 14-16).

ORAL PRESENTATIONS

(AAPG) Exploration of the Northern San Joaquin Basin Gas Province Presiding: Frank Cressy

(AAPG) Horizontal Drilling Reviving Mature Fields Presiding: Scott Hornafius

(AAPG) Reservoir Characteristics and Improving Recovery in Monterey-type Siliceous Shales Presiding: Bruce Bilodeau

(AAPG) Research in Advanced EOR Technology Presiding: Don Clarke

(AAPG) Midway-Sunset: A Super Giant Field Presiding: Dave Walter

(AAPG) Lessons Learned in Giant Fields Presiding: Jeff Sande

(SEPM) Magnetic Stratigraphy and High-Resolution Chronostratigraphy of the Pacific Coast Cenozoic Presiding: Don Prothero

(SEPM) Deposition and Diagenesis of Sedimentary Rocks Presiding: Robert Horton

(SEPM) New Solutions to Old Problems in Stratigraphy Presiding: John Cooper

(SEPM) New Perspectives on the Mesozoic Evolution of California: Implications for the Development of the Great Valley Province Presiding: Darrel Cowan

GENERAL POSTER SESSION
Presiding: Rob Negrini

ELECTRONIC POSTER SESSION
Presiding: Deborah Olson and Rick Berry

SHORT COURSES AND FIELD TRIPS

hosted by: San Joaquin Geological Society
PACIFIC SECTION AAPG/SEPM/SEG
ANNUAL MEETING
May 14-16, 1997
Bakersfield, California

Short Courses

#1) "Overview of Decision Analysis: Making Good Decisions with Uncertainty": This one day course will cover basic decision analysis concepts and include two examples of making a decision to acquire seismic information. The first example incorporates the uncertainty of detecting a structure for a prospect. The second example addresses the more complex issues of structural and spatial uncertainty of seismic information. Both examples can easily be applied to other information gathering decisions.

#2) "Advances in Reservoir Description Techniques as Applied to California Oil and Gas Fields" The purposes of this one day short course are : 1) to demonstrate how imaging tools are being used in California to improve reservoir descriptions; 2) to describe techniques for constructing reservoir descriptions in difficult to define, fine-grained reservoirs; 3) to discuss the contribution of the development geologist in today's reservoir teams.

Field Trips

#1) "Geology of the Midway-Sunset Oilfield and Adjacent Temblor Range, San Joaquin Basin, California": This two day trip will familiarize participants with the regional geology, tectonic and depositional evolution of the area, subsurface geology, reservoir sedimentology and geology, and development strategies. (Includes a terrific, detailed 400 page field guide with color plates).

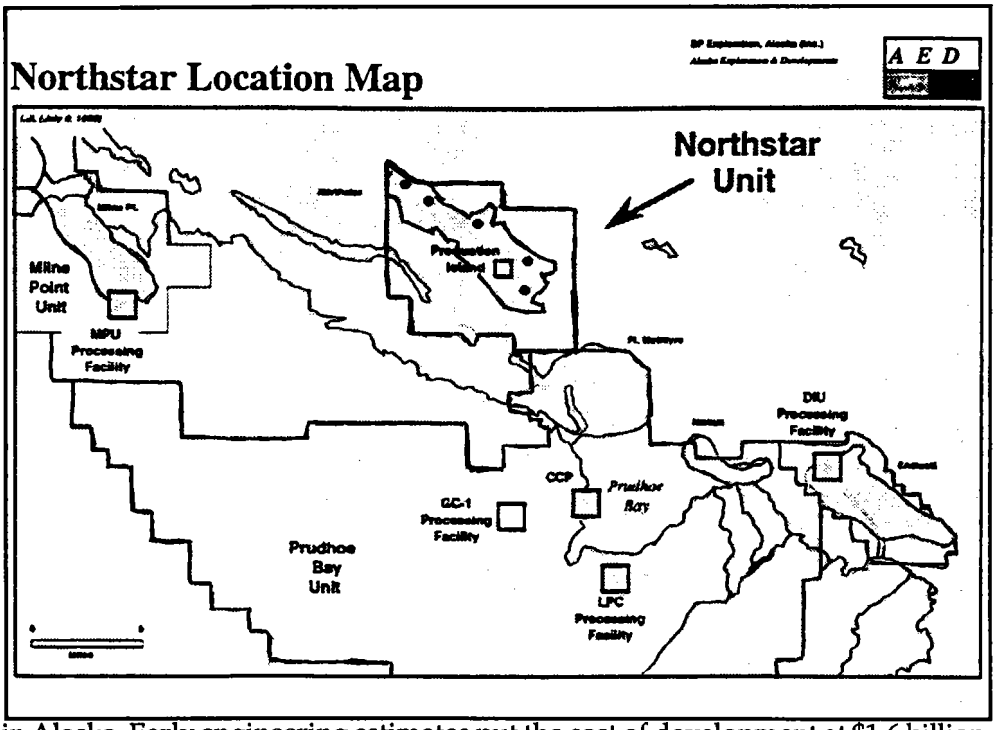
#2) "Geology of the San Andreas Fault: Quail Lake to Parkfield": A two day trip which will examine competing theories of the nature of earthquake mechanisms and deformational styles along with historic ideas about the nature and severity of seismic threats along the San Andreas fault.

The meeting announcement/registration will be mailed out in February. If you would like more information about the 1997 Pacific Section Convention please call Larry Knauer @ (805) 763-6280.

Northstar

Geology, Exploration History, and Development

Presented by Jerry Siok
BP Exploration (Alaska), Inc.

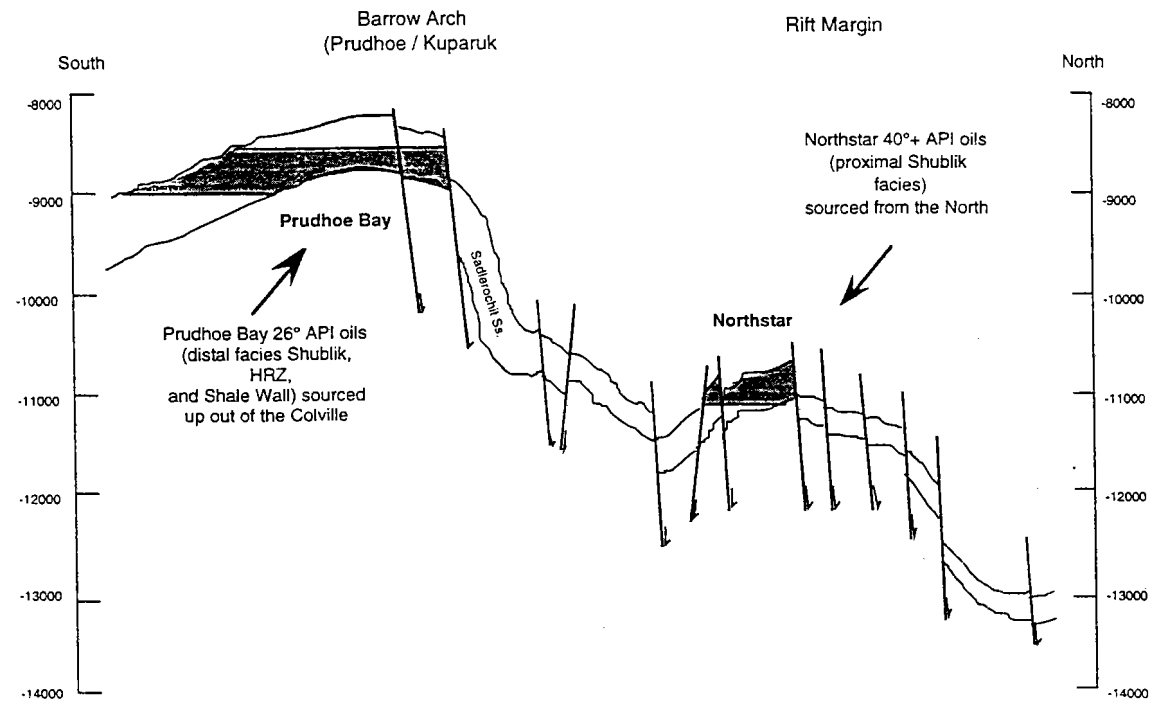


Exploration for oil at Northstar has been long and costly. Northstar leases were first acquired in 1979 at a joint state/federal sale by Shell Oil, Amerada Hess and Texas Eastern. The Northstar Unit is six miles offshore and about 4 miles northeast of the Point McIntyre Field (Figure 1). Oil was first discovered in Shell's Seal Island #1 in 1983. Five additional exploration/appraisal wells were drilled (1983-86) from 2 man-made gravel islands in 40 feet of water. When developed, this will be the first oil produced from federal leases in Alaska. Early engineering estimates put the cost of development at $1.6 billion. In February 1995 BP Exploration (Alaska) Inc. acquired a 98% interest in the Northstar Unit from Amerada Hess and Shell Oil. To date, the oil industry has invested in excess of $140 million in exploration and appraisal operations. An additional $90 million has been spent on lease bonus bids.

The structure is a gently south-dipping northwest trending faulted anticline. The crest of the structure is located near 10,850 feet subsea. The giant Prudhoe Bay and Kuparuk fields like along the Barrow Arch. This arch is bounded to the north by a rift margin that deepens into the present day offshore region. Northstar is located among a series of down-stepping faults off the rift margin of the Prudhoe/Kuparuk high (Figure 2). The primary reservoir is the Ivishak Formation (325 feet thick) of the Sadlerochit Group. This is also the same primary reservoir at Prudhoe Bay, located approximately 12 miles to the south. At Northstar the Ivishak is characterized by high-energy, course-grained conglomeratic facies of the Ivishak Formation. The primary lithology is a pebbly chert to quartz conglomerate with occasional sandstone. This very high net-to-gross reservoir appears to contain no regionally continuous permeability barriers. Cementation has reduced primary porosity to less than 15%. Accurate porosity estimates are difficult to make due to the coarse-grained nature of the lithology and the presence of kaolinite and microporous chert. Permeability is highly variable, averaging from 10 to 100 mDarcies. Oil is a very light and volatile 42° API crude with approximately 2100 cubic feet of gas per stock tank barrel of oil. This oil is very different from the heavier oils (26°) found to the south in Prudhoe Bay. Estimated recoverable oil reserves range from 105 to 160 million barrels.

A free-standing drilling rig is required at Northstar because the reserves are beyond current extended reach drilling techniques from shore-based facilities. The plan is to expand the existing Seal Island to about 5 acres: significantly less than Endicottís 40-acre island. Oil, gas and water will be processed at a stand-alone facility and then sent to shore via a subsurface pipeline. Northstar will have the first Arctic subsea pipeline in Alaska to transport oil to shore facilities. Preliminary testing in Spring 1996 were very successful in demonstrating the technology to safely bury a subsea pipeline.

Diagrammatic Cross-Section



Pacific Section AAPG Ad Hoc Committee on Cores

The Pacific Section's Ad Hoc Committee on Cores met in November 1996 at the Seaside campus of California State University, Monterey Bay (CSUMB). Attendees included Pacific Section Executive Committee members Mark Wilson, Larry Knauer, Mel Erskine and Tom Wright; at large members included Larry Beyer, USGS and Don Lewis, formerly Chief Geologist at Chevron.

Other participants included Bill Guerard, State Oil and Gas Deputy Supervisor DOGGR; Marcus Milling, Director of the American Geologic Institute; Gary Green, Director of Moss Landing Marine Institute; Del Fortner, BLM, representing the California Well Sample Repository; David Beeby, CDMG; Michael Carr, USGS; Michael Field, USGS; as well as a number of representatives of the University at Monterey Bay.

The Committee is still very much in an information-gathering stage. It was decided that data was still needed regarding the total amount of well sample material in California, the actual cost incurred by companies to maintain core collections internally, and the cost of core disposal. Considerable discussion was focused on potential funding sources and the responsibility of various government agencies to provide support. How well samples fit specifically into the proposal for a broader based, perhaps multi-disciplinary data repository at Monterey Bay, will be unknown until some of the cost figures can be defined.

A second meeting was held on January 17, 1997 at CSUMB. In addition to the ongoing data gathering efforts, considerable discussion was focused on approaching some of the large charitable foundations which typically fund educational programs. It was decided that the Committee would assist the university (CSUMB) in submitting a proposal for a multi-disciplinary data repository.

The next meeting will be held in April. Any data regarding core storage or disposal costs, or suggestions as to funding sources for an endowment would be greatly appreciated.

Mark L. Wilson
Chair Ad Hoc Committee on Cores

The Dibblee Geological Foundation

would like to announce an upcoming

DAY IN THE FIELD WITH TOM DIBBLEE

to be held at the location of the

historic St. Francis Dam

on May 17, 1997, in conjunction with the Annual Convention of the Pacific Section of AAPG in Bakersfield, California.

The fourth awarding of the DIBBLEE MEDAL will take place at this event.

The Dibblee geology of the Warm Springs Mountain Quadrangle and other nearby quadrangles will be released.

Other field trip leaders will include **J. David Rogers, Ph.D.**, Forensic Geologist and author of *"St. Francis Dam Disaster Revisited"*

This event will be a fund raising event for the Dibblee Geological Foundation.

Initial sponsors include: **Pacific Section of AAPG; AEG Southern California Section; Coast Geological Society; South Coast Geological Society and Fugro West**

This is planned as an all day event to include a geologic field trip and lectures, historical overview, awarding of the Dibblee Medal, and BBQ near the dam site.

To participate as an event sponsor, leader, or speaker, or for further information, contact:
John R. Powell, c/o Fugro, 5855 Olivas Park Drive, Ventura, California 93303-7672
805.650.7000 or JPowell@Fugro.com

HIGHLIGHTS OF NATURAL GAS DRILLING ACTIVITIES IN NORTHERN CALIFORNIA'S SACRAMENTO VALLEY DURING 1996

Roland Bain

1996 - on a relative basis, it was a good year. Given that the various drilling activity parameters for 1995 were the worst on record, it didn't take much to show an improvement. During 1996, 86 holes were drilled, in contrast to the 72 in 1995 (a 19% improvement). More importantly, 47 holes were completed as gas wells versus the 35 in 1995 (a 34% improvement). This translates into a most impressive 51% completion record (46% in 1995).

A record-low 24 operators orchestrated drilling projects during 1996, with Donald Slawson Exploration having carried the brunt of the load. Slawson drilled 14 holes and completed 11 as gas wells (an outstanding 79%). Notable, here, is the fact that Slawson's successes were in the high-risk "Forbes country", the drilling projects having resulted primarily from the 3-D seismic investigations conducted by the Wichita, Kansas-based independent.

Other operators last year also compiled excellent completion numbers. Key Production drilled 7 holes and completed 6, for a remarkable 86% success rate. Other more active operators included Castle Minerals - 6/3 (50%); Royale Energy - 6/4 (67%); and Western Continental - 6/3 (50%). Amerada Hess, Capitol Oil and Montis Niger each drilled 5 holes; ABA Energy having drilled 4 holes, plus having redrilled an older hole.

The selling off of producing properties by certain of the majors (notably Chevron, Mobil and Union) continued during 1996 leaving little question that the Sacramento Valley, indeed, is an independent's arena.

3-D seismic continued to be a highly popular and effective pre-drilling tool. Many of the Operators base the entirety of their drilling programs on the results of these investigations.

Perhaps the most refreshing aspect of last year's drilling activities was Key Production's introduction of novel and inspiring well names. The likes of "Alien", "Dracula", "Evil Twin" and "Teenage Werewolf" gave the local industry a much-needed morale boost. Sadly, no system is perfect; the "Evil Twin No. 1" encountered the evil dry-hole forces.

Well-head prices became a hot item during the latter part of 1996. The December PG&E formula price was $3.48, the second highest price in the valley's history. The average for the year was $1.83, a 45% increase over 1995's average of $1.26. Most notably, 1997 opened with a record price of $3.94 (84% increase over the January, 1996, price of $2.14). Many producers sell their gas to end-users at prices substantially higher than PG&E's bench-mark price.

Many parts of the Sacramento Valley and northern San Joaquin Valley were hard hit by recent floods. Even though it will take some time for surface conditions to normalize, the expectation is that drilling activities in 1997 will continue to improve. The combination of a strengthened price structure, the excellent results emanating from 3-D projects, and the perennial high rate of success should serve as the underpinning for another good year.

SACRAMENTO VALLEY DRILLING ACTIVITIES 1996

	1996	1995	1994	1993
Number of holes drilled	86	72	75	130
Redrills	6	4	5	19
TOTAL HOLES DRILLED	**92**	**76**	**80**	**149**
HOLES COMPLETED AS GAS WELLS (Including Redrills)	**47**	**35**	**33**	**57**
SUCCESS PERCENTAGE	**51%**	**46%**	**44%**	**38%**
Number of Operators	24	27	36	36
Operators finding gas	17 (71%)	18 (67%)	17 (47%)	18 (50%)
Operators drilling 1 hole	4 (17%)	10 (37%)	20 (56%)	16 (44%)
Operators drilling 2 holes	8 (33%)	4 (15%)	6 (17%)	3 (8%)
Operators drilling 3 holes	3 (13%)	4 (15%)	3 (8%)	9 (25%)

MOST ACTIVE OPERATORS (Four or more holes)	Number Drilled	Gas Wells	1995
Donald Slawson Exploration	14	11	6/5
Key Production	7	6	4/2
Castles Minerals	6	3	0
Royale Energy	6	4	5/4
Western Continental Oper.	6	3	4/3
Amerada Hess	5	3	5/1
Capitol Oil	5	-	3/-
Montis Niger	5	2	2/2
ABA Energy	4 (+RD)	2	6/2

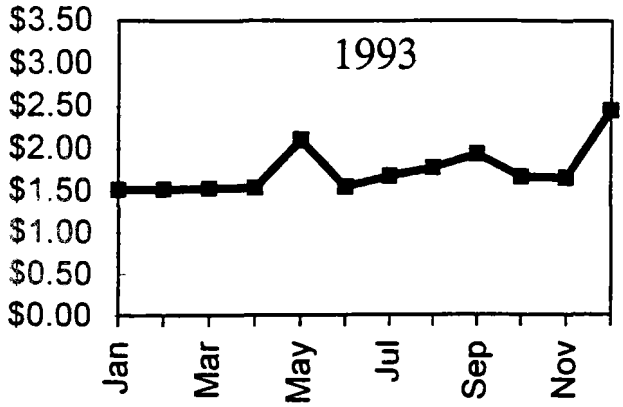
1996
AVERAGE TOTAL DEPTHS

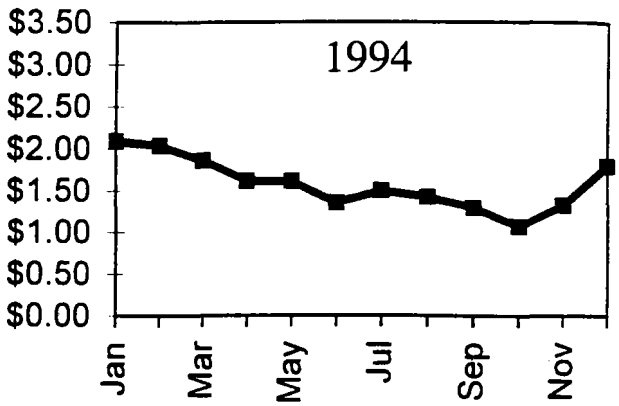
1996	1995	1994	1993	1992	1991	1990
7245 ft.	7153 ft.	6942 ft.	6388 ft.	6918 ft.	6320 ft.	6840 ft.

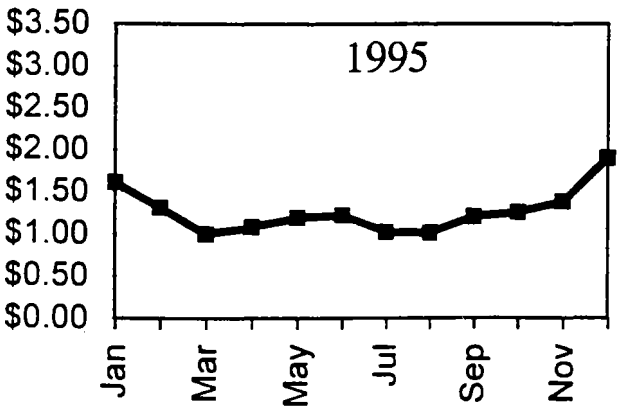
ACTIVITY BY COUNTY

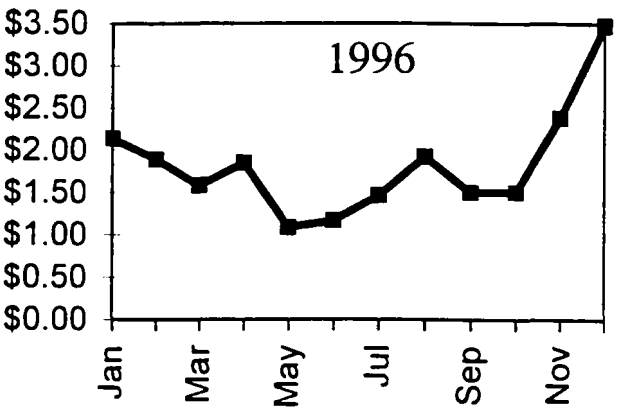
	Numbered Drilled (% of Total)	Gas Wells (% of Total)	Success Percentage
Colusa	18 (21%)	12 (27%)	67%
Solano	18 (21%)	9 (20%)	50%
Glenn	17 (20%)	9 (20%)	53%
Yolo	12 (14%)	5 (11%)	42%
Sacramento	10 (12%)	6 (13%)	60%
Contra Costa	3 (3%)	3 (7%)	100%
San Joaquin	3 (3%)	1 (2%)	33 %
Sutter	3 (3%)	1 (2%)	33%
Tehama	2 (2%)	1 (50%)	50%

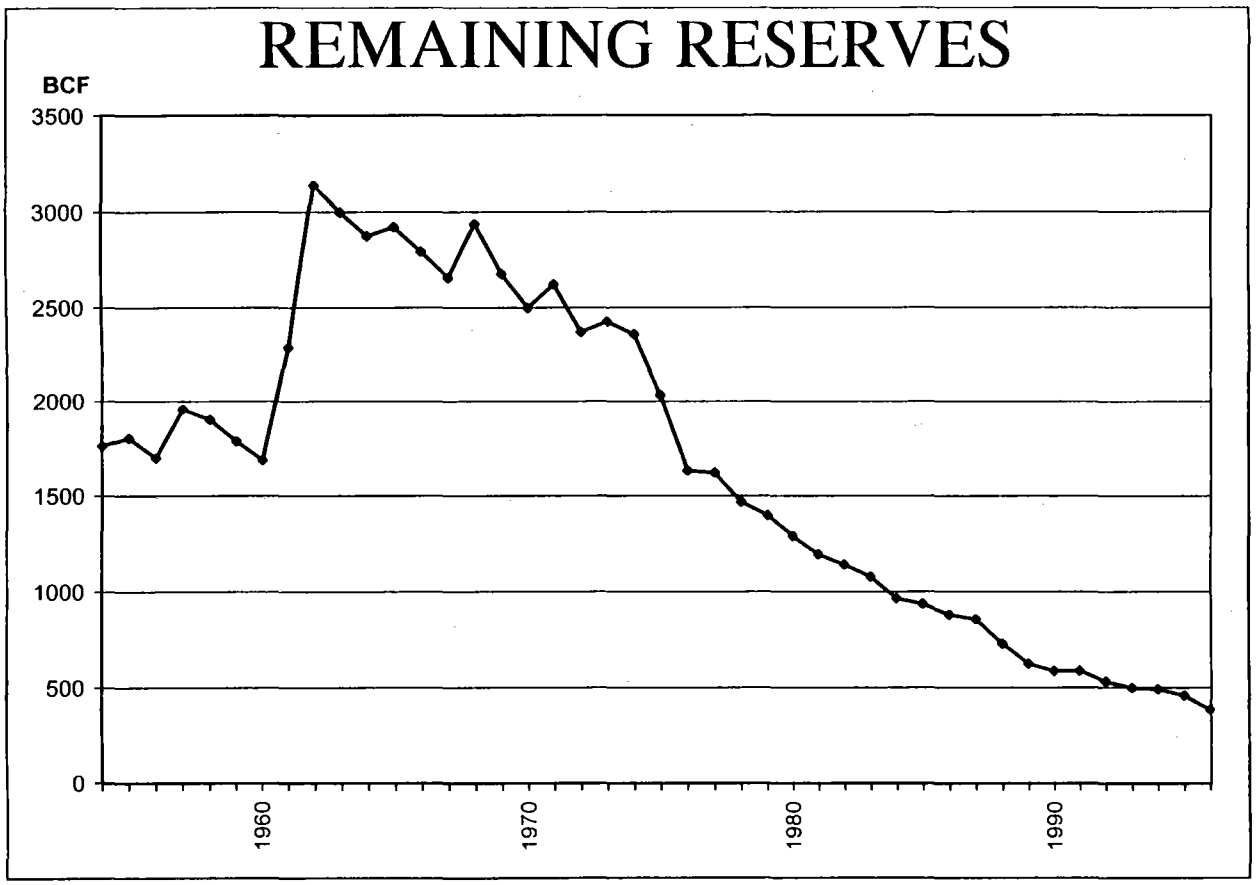
WELL-HEAD PRICES



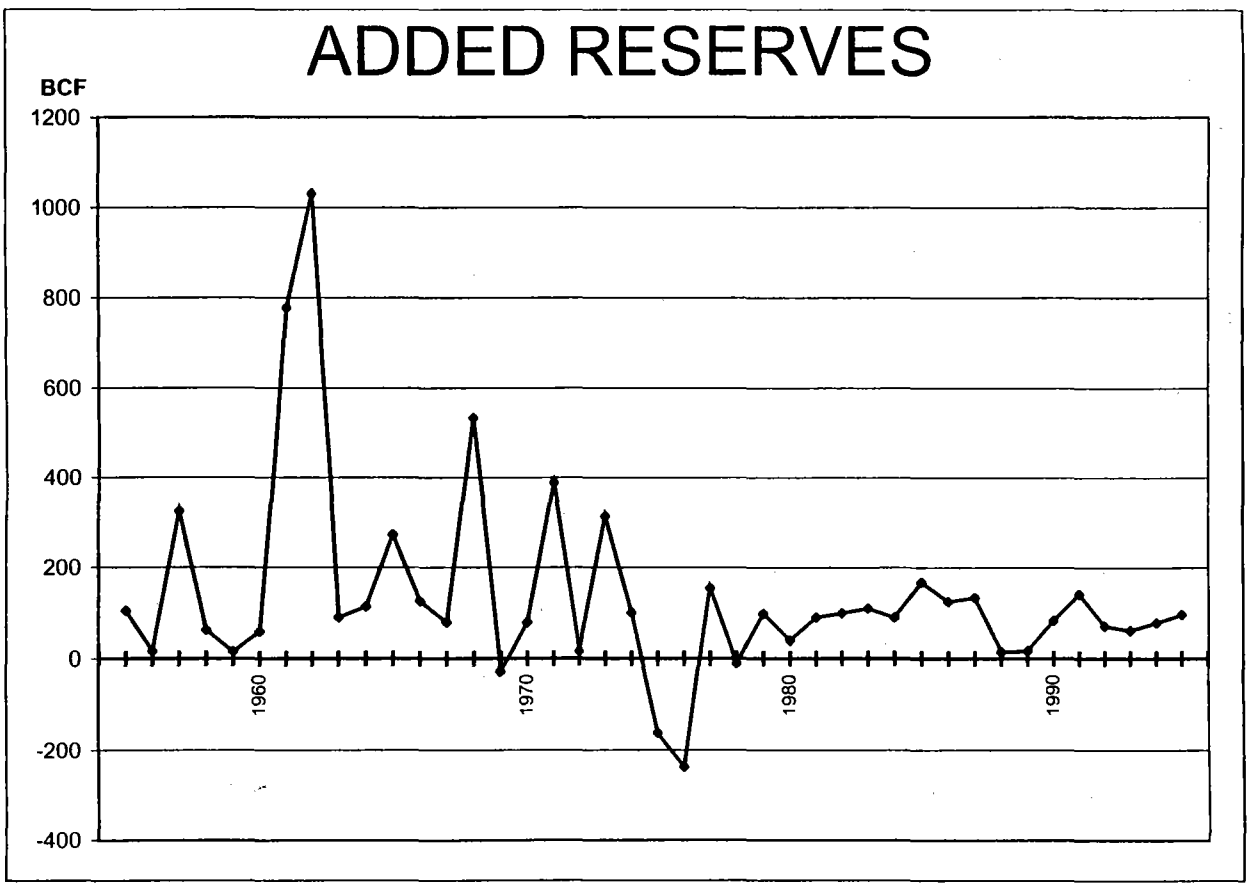








Source: California Division of Oil and Gas



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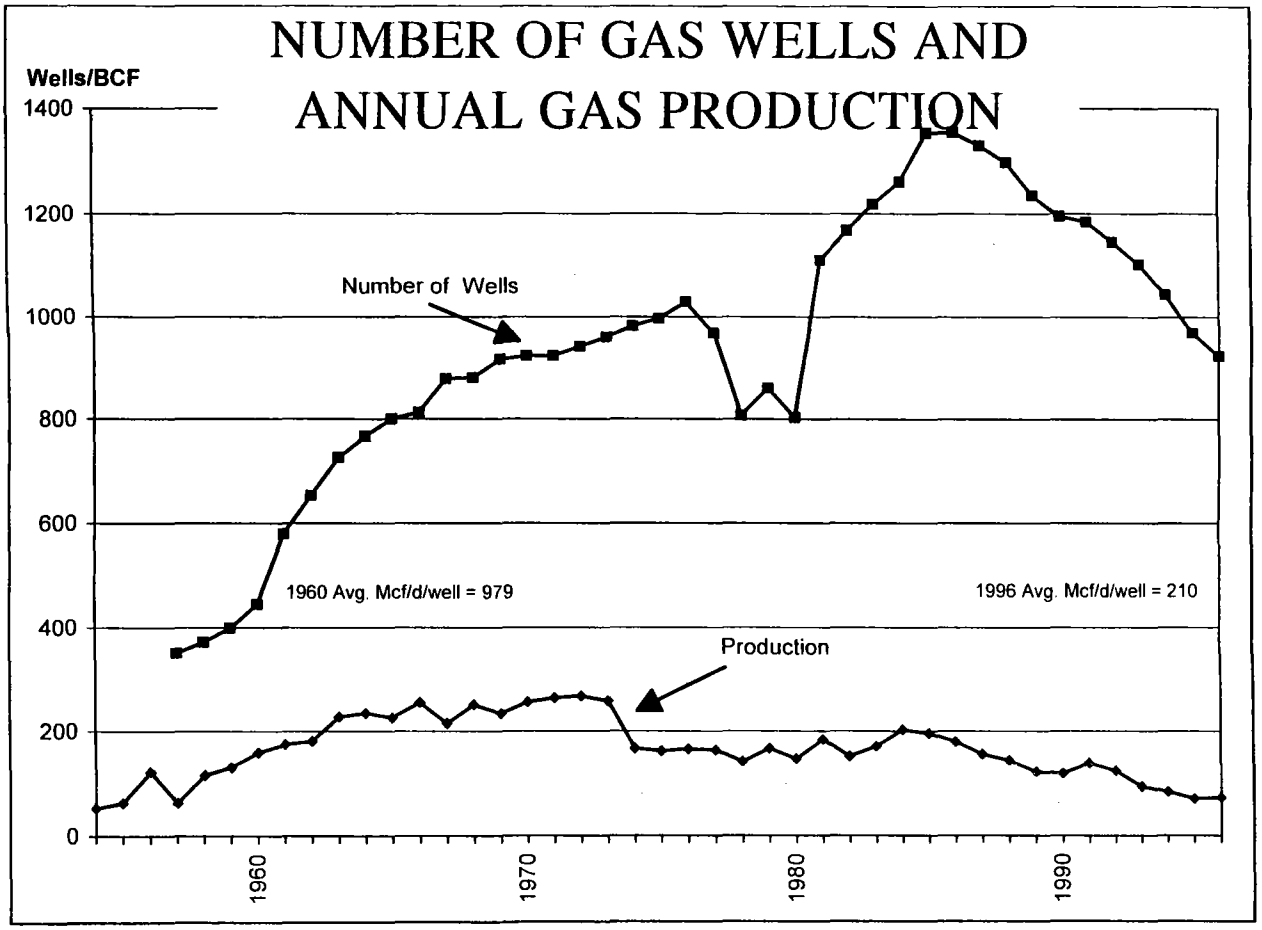

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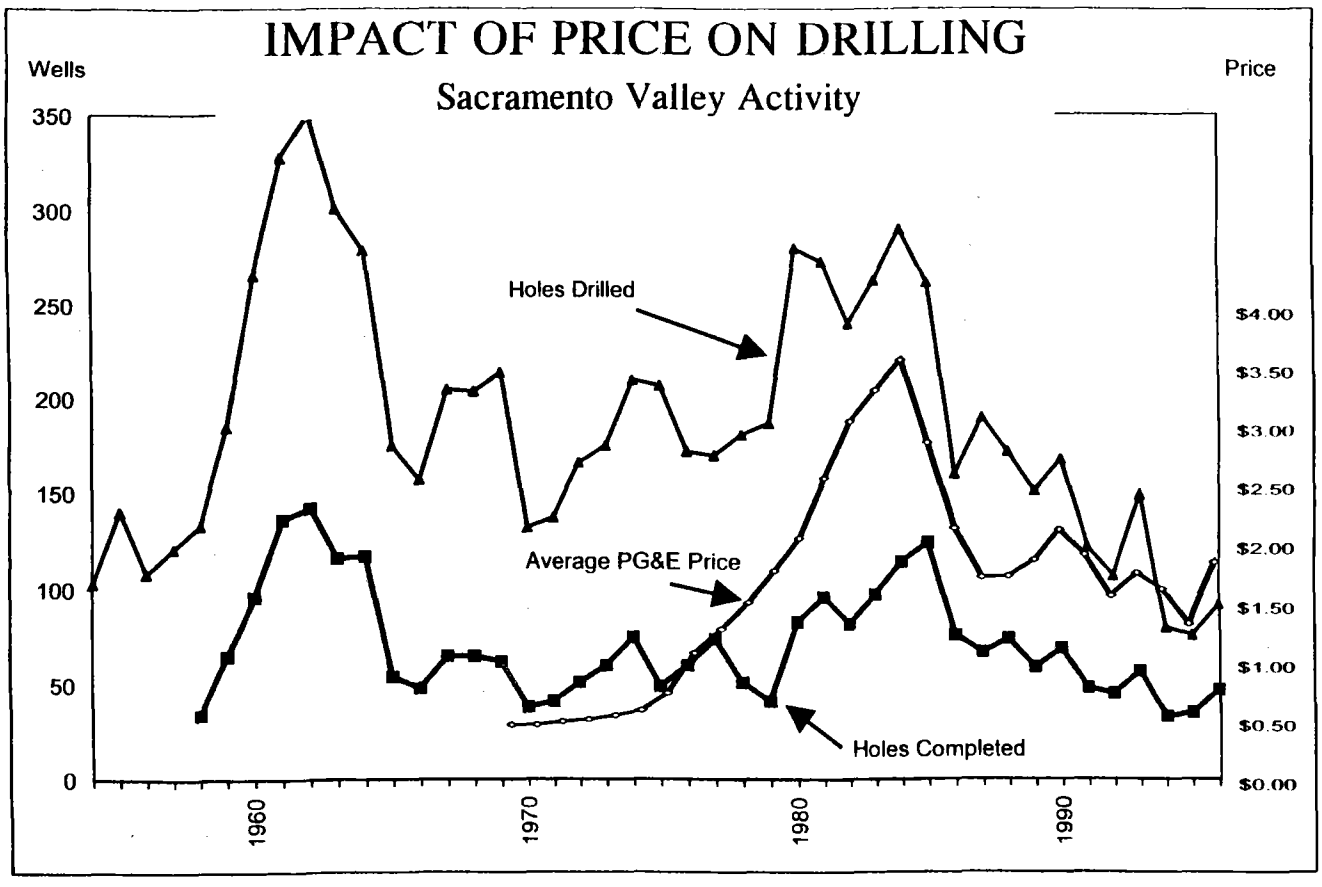

Source: PG+E and R. J. Bain

CALIFORNIA'S LARGEST GAS FIELDS

(Table Developed by Adding Both Dry Gas and Associated Gas - Through 1995; Source: DOG Annual Report, 1995)

	Field	*Gas produced (MMcf)*	*Reserves*	*Ultimate Reserves*
1.	Rio Vista*	3,423,814	77,122	3,500,936
2.	Kettleman North Dome	2,940,035	22,089	2,962,144
3.	Ventura	2,028,201	30,769	2,058,970
4.	Wilmington	1,145,036	48,497	1,193,533
5.	Buena Vista	1,143,465	75,214	1,218,679
6.	Long Beach	1,086,701	4,882	1,091,583
7.	Elk Hills	931,524	1,007,048	1,958,572
8.	Huntington Beach	837,87	24,439	861,626
9.	Santa Fe Springs	836,312	1,360	837,872
10.	North Belridge	663,896	28,001	691,907
11.	Grimes*	605,227	79,227	684,454
12.	Midway-Sunset	562,685	26,949	589,634
13.	East Coalinga Extension	478,298	31,862	530,160
14.	South Coles Levee	474,519	122,814	597,333
15.	Brea-Olinda	461,196	20,791	481,987
16.	Paloma	452,506	6,948	459,454
17.	Lost Hills	444,448	305,930	730,378
18.	Dominguez	386,048	1,347	387,395
19.	Willows-Beehive Bend*	377,532	16,235	393,787
20.	Lathrop*	352,339	5,935	358,294

* *Denotes fields in the Sacramento Valley*

Only four out of the top twenty! Let's get to work and find some gas!

GEOLOGISTS ON THE MOVE

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Home: (805) 325-1678; Bus.: (805) 395-5730
Fax: (805) 395-5749

James S. Manus, AA Production Inc.
2501 Moffitt Way, Bakersfield, CA 93309
Bus.: (806) 745-8655; Fax: (806) 748-1520

James E. Melland, ONESTA Corp.
P.O. Box 100, Mammoth Lakes, CA 93546
Home (805) 833-3013; Bus.: (805) 325-6406

Mark P. Muir
17431 Sumiya Drive, Encino, CA 91316
Bus.: (818) 986-3583; Fax: (818) 986-3583

Burdette A. Ogle, Ogle Oil & Gas Operations
P.O. Box 5266, Santa Barbara, CA 93150
Home: (805) 565-5293; Bus.: (805) 565-5293
Fax: (805) 565-5295

Dougald H. Thamer, Temblor Petroleum Co. LLC
P.O. Box 882859, Steamboat Springs, CO 80488
Home: (818) 585-0662

Terry W. Thompson, Texaco Exploration & Prod. Inc.
P.O. Box 5197X, Bakersfield, CA 93388
Home: (805) 588-9407; Bus.: (805) 392-2464
Fax: (805) 392-2905

Richard H. Vaughan, Vaughan Production Co.
P.O. Box 458, Wilson, WY 83014
Home: (307) 733-0340; Bus.: (307) 733-0340
Fax: (307) 733-9756

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NEWS FROM THE AFFILIATED GEOLOGICAL SOCIETIES

Alaska

Mar. 13: **Dr. William Hammer,** AAPG Speaker, Dinosaurs on Ice:Jurassic Dinosaurs from Antarctica
Apr.17: (Hilton Alaska), TBA
May 15: (Hilton) Gil Mull, Geology and Depositional History of the Neocomian Tingmerkpuk Sandstone, Delong Mountains, Western Brooks, Range, Alaska

* Please contact Dick Garrard (265-1536) if you would like to speak at a future AGS luncheon, or if you have any suggestions about the luncheon program.

Alaska Geological Society
P.O. Box 101288
Anchorage, AK 99510
Contact: Sue Karl (907) 786-7428

Coast

AMERICAN LEGION HALL -
83 S. PALM STREET, VENTURA, CA.
NORTHBOUND Highway 101 - Take California Street Exit.
SOUTHBOUND Highway 101 - Take Ventura Avenue Exit, West (left) on Thompson Blvd, North (right) on Palm St. East (right) on Thompson Blvd., North (left) on Palm St.

Social Hour-6:00 p.m.; Dinner-7:00 p.m.

$12 - With Reservation*
$17 - Without Reservation
$ 5 - For Students/Teachers

Reservations: Please phone the receptionist at Fluor-Daniel GTI (805)644-9811 by 10 a.m. on the Friday before the meeting date.
*RESERVATIONS ARE REQUIRED TO GUARANTEE DINNER

March 18 - Rick Blake, will be speaking on Lawerence Livermore Laboratories Site Investigation
April 15 - Donna Jurdy, will be speaking on Plate Tectonics

Coast Geological Society
P.O. Box 3055
Ventura, CA 93006
Contact: Imelda Cragin
(805) 681-4052

Sacramento

Mar. 5: Bert Amundson, Retired Professor, Geology & Touring of New Zealand
Mar. 22: Dalton Pollard, Executive Officer, State Board of Geology, Statistical Results of Recent Tests given by the State Board of Registration of Geologist and Geophysicists

Noon luncheon meetings are held at the HUNGRY HUNTER RESTAURANT, 450 Bercut Drive, Sacramento For luncheon reservations, please call Jennifer at Delta Environmental Consultants, Inc. at (916)638-2085.

NEWSLETTER: If you wish to have something published in the SPA Newsletter, send it to PetroData (Jim Fossum) by the 20th of the preceeding month (916-488-1984) (FAX 916-488-5650)

Sacramento Petroleum Association
P.O. Box 254443
Sacramento, CA 95865-4443
Contact: Owen Kittredge (916)638-2085

Northern California

NCGS 1997 SUMMER FIELD TRIP
GOLD DEPOSITS OF THE SIERRA NEVADA
June 7 -8 , 1997
Led by: David Lawler, FarWest Geoscience Foundation and Dr. Greg Wilkerson, BLM Bakersfield District

The Northern Sierra Nevada region represents one of the most fascinating, but complex, geological provinces in Northern California. The highlights of this trip will focus on site visits to several active placer and lode god mines on Nevada and Sierra counties where both the bedrock and economic geology aspects of these deposits will be discussed.

The Alleghany Mine District contains world-class high-grade lode gold deposits exposed in ultramafic rocks, as well as in metasediments and metavolcanic sequences of the highly dissected drainages of the Middle and North Forks of the Yuba River. Attendees will examine sedimentary exposures of the vast early Tertiary age ancestral Yuba River System in part created by hydraulic gold mining operations during the last century. Placer gold resources produced from this ancient auriferous fluvial system figures prominently in the historical and economic development of California. Tectonic and geological aspects of the Sierra Buttes-Gold Lakes Basin District of Sierra County and the Taylorsville-Indian Valley-Quincy District of Plumas County will also be examined. The Cretaceous Chico Formation exposures and the Cherokee Hydraulic Mine site in the Pentz-Durham Valley of Butte County via the Feather River Canyon will be the final stop.

Time: Depart on Sat., June 7, 1997 Concord -7:30 a.m./Sacramento-9:00 a.m. Return on the evening of Sun., June 8, 1997.
Departure Points: **Concord**-Chevron Parking Lot (2101 Diamond Blvd.); exit I-680 at /Willow Pass Rd.
Go east one (1) block and turn left onto Diamond Blvd. **Sacramento**-location to be Announced.
Cost: $85 for members; $100 for nonmembers (no exceptions). This fee includes trip. Guidebook, transportation, meals, refreshments and lodging at San Francisco State University Camp.
For questions call David Lawler at 510-546-9694; Tim Ault at 510-372-9100 (days); or Tridib Guha at 510-370-0685 (evening).

Northern California
Geological Society
9 Bramblewood Court
Danville, CA 94506-1130
Contact: Dan Day (510)294-7530

Los Angeles

Los Angeles Geological Society
23430 Hawthorne Blvd., Ste. 380
Torrance, CA 90505
Contact: Mark Legg (310) 378-6254

San Joaquin

Our schedule for future events is as follows:

3/11/97 - Jan Gillespie, *California State University*, "Comparison of Foreland Basin Subsidence in SW Alberta and NW Montana"

4/8/97 - Glenn Gregory, *consultant* "Miocene Sandstones of Midway-Sunset Oil Field"

5/13/97 - Suzanne M. (Suki) Smaglik, California State University "Inside Hawaiian Volcanoes: A Look at Recent Eruptions"

6/10/97 - Rufus Cook, consultant "The Discovery of Badak field, Kalimantan, Indonesia"

7/15/97 - no meeting
8/12/97 - no meeting
9/12/97 - Fall Barbecue

Dinner meetings are held the second Tuesday of each month at the American Legion Hall, 2020 "H" Street, Bakersfield, CA. The social hour starts at 6:00 p.m., and dinner is served at 7:00 p.m. with a talk at 8:00 p.m. following dinner. **Contact George Stewart at 321-4150 for more information.**

San Joaquin Geological Society
P.O. Box 1056
Bakersfield, CA 93302
Contact: Mike Simmons
(805) 321-4113

William Franklin Barbat (1905 -1996)

We recently received a letter from William N. Barbat of Lake Oswego, Oregon, informing us of the sudden death of this father, **William Franklin Barbat**, on August 16, 1996, at the age of 90, following a healthy and happy life. Mr. Barbat was a longtime member of the NCGS, and had many friends in the Society. He was an Honorary Member of the Pacific Section AAPG since 1970. At the request of his son, we are including a draft of a memorial to him to be published by the GSA. Any corrections or additions to this document by those members who knew Mr. Barbat would be greatly appreciated, and should be addressed to ***William N. Barbat, At. 108 - 3433 McNary Parkway, Lake Oswego, Oregon 97035.***

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The story of how William Franklin Barbat ("Bill" to all who knew him) developed a lifelong interest in geology and paleontology began as a youth living in San Francisco near Golden Gate Park, which is home to the California Academy of Sciences. At age twelve Bill took some fossils from his deceased father's collection to Dr. G. Dallas Hanna of the Academy for identification. This led to the hiring of young Bill as a part-time helper in the paleontology lab from that early age until Bill began his college education at the University of California at Berkeley.

Bill spent one memorable summer period during college assisting the excavation of a wealth of Ice Age vertebrate remains from the newly discovered McKittrick (Kern County) Tar Pit. Later, one of Bill's supporting jobs as a college student was to sort tar-pit fossils into bins designated for each particular bone or tooth, which were stored in Berkeley's Campanile. From these bins paleontologists could assemble a complete skeleton of a Pleistocene sabre tooth tiger, a dire wolf, a ground sloth, or other extinct animals. Another happy summer was spent assisting a crew of paleontologists collecting vertebrate fossils from the John Day region of eastern Oregon.

Bill graduated in Geology from the University with honors in 1926, after being elected to Phi Beta Kappa and Sigma Xi. Also in 1926 he married Dorothy Naunton, whom he had met in a geology class at the University. Bill's contemporaries became scattered around the world as the international petroleum industry grew rapidly, but Bill's geological career allowed him to spend his entire life in California.

After graduation, Bill was hired by Standard Oil Company of California and was stationed at the town of Taft, a small desert oasis in the midst of Kern County's several giant oil fields. Standard of Cal was then a relatively small provincial company that had acquired an extensive checkerboard of oil lands along the west side of the San Joaquin Valley as the result of a merger with the Pacific Oil Company. Bill became Standard's sole on-site geologist in this area except for short periods when he was assisted by Allen Weymouth or Fritz von Estorff.

In pioneering the use of micropaleontological correlations for stratigraphic problems of oil exploration and development in the San Joaquin Valley, Bill left a lasting legacy. As John Silcox notes, Bill was largely responsible for developing the lab in Taft, which set the standard for all of Socal operations - domestic and abroad.

It wasn't until 1936-37 that Bill could begin to build a professional geological/paleontological staff at Taft. A story recalled by Jack Bainton, one of Bill's first hires and eventually his successor at Taft, sums up the tremendous liking and respect that Bill had built up during his career. Numerous oil companies around Taft eventually allowed their competitors to examine the cores that they had recovered in their drilling operations. Many young geologists were at a loss to identify the invertebrate megafossils which were usually present in the upper section of the

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cores. Time after time they would bring a fossil over to Bill for identifications, and he would supply them a name, which they would duly note on their descriptions. One Christmas, to show their mutual appreciation, they all chipped in to buy Bill an expensive gift in those pre-war days, a fancy Leica camera.

As the oil industry rebounded from the Depression, Standard's geological staff in Taft grew to 10-15 people before several of the staff were called to serve their country in World War II. The country's insatiable wartime needs for petroleum spurred intensive development activity in Kern County's oil fields, in the deeper plays in the San Joaquin Valley, and at the giant Kettleman Hills oil field. Standard's geological staff was stretched very thin to take care of all the around-the-clock well-sitting. Bill's children remember their father being called out at all hours of the day and night for months on end. Bill also worked closely with the U.S. Navy staff during the war helping to develop the Elk Hills Naval Oil Reserve into one of America's giant oil fields.

While at Taft, Bill became active in the American Association of Petroleum Geologists, the Society of Economic Paleontologist & Mineralogists, and the Paleontology Society. Bill also helped found the local chapter of the American Petroleum Institute and for many years collected statistical data for their publications. Bill served his community as a member of the Kern County Planning Commission and as a member of the Taft Rotary Club, including one year as the club's president.

In 1946 Bill was appointed as Assistant Chief Geologist of Western Operations at Standard of California's home office in San Francisco under William S.W. Kew. When Kew retired, Bill was promoted to Chief Geologist in 1951, and he served in that capacity until his retirement in 1970. His greatest contribution was helping to build a highly competent professional staff for his company, which is now the mighty Chevron Oil Corporation.

Bill's only hobby in retirement was - geology! He came full cycle by associating again with Doc Hanna as a volunteer three days a week at the California Academy of Sciences. Bill commuted to the Academy from his home in the Oakland hills, and for exercise, walked from the BART station to Golden Gate Park. This walk took him through his childhood neighborhood, which had changed from its more conventional lifestyles to the now well-known Haight-Ashbury district. On one walk through this area he suffered a broken arm from a mugging, but he still looked forward to this stroll to his Academy office and back.

Bill became a fellow of the California Academy of Sciences and a fellow of the Geological Society of America. He continued his association with the University of California through the LeConte Club, and he remained a member of the Northern California Geological Society. As his memory started to fail a little, Bill discontinued his active involvement in geology and enjoyed his leisure retirement at home. Bill remained in relatively good physical health until his sudden death one month before his 91st birthday. Dorothy had preceded him in death by three years.

Bill and Dorothy were survived by two children, Jeannette Griego of Monterey, California, and William N. Barbat of Lake Oswego, Oregon, who retain fond memories of their parents.

William N. Barbat

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Notes on subsurface methods employed in parts of San Joaquin Valley, California, W.F. Barbat, Micropaleontology Bull., Stanford Univ. v.2, p1-2, 1930.

Stratigraphy of the Borophagus littoralis Locality, California, W.F. Barbat and A. Allen Weymouth, Univ. Calif. Pub., Bull. Dept. of Geol. Sci, v.21, p25-36, 1931.

Age of Producing Horizon at Kettleman Hills, California, G.M. Cunningham and W.F. Barbat, Bull. Amer. Assoc. of Petroleum Geol., v.16, n.4, p417-21, 1932.

Lower Miocene Foraminifera from the Southern San Joaquin Valley, California, W.F. Barbat, and F.E. von Estorff, Jour. Paleon., v.7, p164-74, June 1933.

Stratigraphy and Foraminifera of the Reef Ridge Shale, Upper Miocene, California, W.F. Barbat and Floyd Johnson, Jour. Paleon., v.8, p3-17, March 1934.

Pliocene of the San Joaquin Valley, California, W.F. Barbat, Bull. Amer. Assoc. of Petroleum Geol., v.23, p1877-, 1939.

Notes on the geology of the deep Coles Levee well, Kern County, California, N.L. Taliafero and W.F. Barbat, Bull. Amer. Assoc. of Petroleum Geol., v.30. n.1,p.132, 1946.

Stratigraphy of San Joaquin Valley, W.F. Barbat, Oil and Gas Jour., v.45, n.47, p.128, 1947.

The Los Angeles Basin Area, California, W.F. Barbat, in Habitat of Oil, a Symposium, Lewis G. Weeks, Editor, p.62-77, Amer. Assoc. of Petroleum Geol., 1958.

Megatonics of the Coast Ranges, California, W.F. Barbat, Geol. Soc. of Amer., Bull., v.82, p.1541-1562, June 1971.

LETTER TO THE EDITOR

Your letter of Jan. 3 to my father, William F. Barbat, was forwarded to me for a response to explain that he died at age 90 last August. His memorial will be submitted to GSA for publication so that more people in the geological profession will be aware of his passing. In the meantime, please give this information to your newsletter.

Pop was greatly honored to have been an Honorary Member of the Pacific Section AAPG. The list of Honorary Members includes many great geologists. Thank you for asking for his nomination.

I hope your Bakersfield convention will be a big success.

Sincerely,
William N. Barbat

The Branner Club

DATE: Thursday - May 8, 1997
PLACE: The Athenaeum, Cal Tech, Pasadena (Hill Avenue and California Boulevard)
TIME: Social Hour: 6:00 PM; Dinner: 7:00 PM; Meeting and Talk: 8:15 PM
PRICE: $30.00 - Students are half-price
SPEAKER: Peter L.Kresan, University of Arizona
TITLE: Views from a Trek across the Himalayan Plateau

At the meeting on February 13, 1997, Dr. Jason B. Saleeby spoke about the traditional view for the support mechanism of the Sierra Nevada based primarily on the isostatic effect of a thick buoyant crustal root related to the Sierra Nevada batholith. Recent active and passive seismic studies integrated with petrologic and geochemical studies on deep crust-upper mantle xenoliths found in Neogene volcanic rocks indicate the current absence of a crustal root and mountain range support by shallow, partially molten asthenospheric mantle. A time series in xenolith petrology from 12Ma to less than 1Ma also indicates that there was in fact, a deep crustal root for the batholith, but that it was mafic in composition and its deeper levels converted to eclogite by rapid cooling from beneath in latest Cretaceous time. Between 12Ma and about 3Ma, the lower crustal eclogitic layer delaminated and sank into the mantle and was replaced by asthenospheric peridotite. These events appear to be kinematically linked to large magnitude crustal extension in the Owens Valley to Death Valley region.

Dr. Saleeby graduated from Pierce College, Cal State Northridge and UC Santa Barbara. After a brief stint at UC Berkely, he joined the faculty at Cal Tech. Dr. Saleebyís research interest is in the tectonics of the western North American crust and upper mantle, and in the evolution of the Pacific Ocean basin. His research tools include regional and detailed field mapping, isotope geochemistry and synthesis of geological, geochemical, and geophysical data. His teaching activities include field technique and advanced problems, structural geology, and the application of geochemical and petrologic studies to tectonic analysis.

Dr. Saleeby is the sponsor for our meetings at the Anthenaeum.

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Gregory P. Yvarra, Nuevo Energy Company
201 South Broadway, Santa Maria, CA 93455-5104
Home: (805) 922-3993; Bus.: (805) 934-8213

Roupen L. Zakarian
22341 Welby Way, Woodland Hills, CA 91303-2466

Election Time, Again?!?

This notice is to inform the membership that the following people have consented to run for office in the Pacific Section for the year 1997-1998:

President Elect: M. C. (Mel) Erskine (Consultant)
Don Clarke (City of Long Beach)

Vice President: Terry Thompson (Texaco)
Allen Britton (Core Laboratories)

Secretary: Kay Pitts (Bechtel Petr. Ops)
Steve Sanford (Chevron)

Treasurer: Joan Barminski
(Minerals Management Service)

Look for photographs, biographies and ballots in our next issue. This is an outstanding slate of candidates and I would like to thank each one of them for "volunteering". The Executive Committee decided that it would be best to retain Joan as Treasurer for another term since the last year has seen us scramble our bank accounts and institute some new accounting procedures. Please participate by voting in May for the person you think is the best candidate. Historically, these elections are close, your vote will count.

Mark Wilson
Past President

COMMUNITY ENERGY NIGHT
CEN

April 23, 1997
Red Lion Hotel
3100 Camino Del Rio Ct.
Bakersfield, California

Held in conjunction with

Energy Awareness Week

Speaker: Ms. Sandra Waisley, Deputy Secretary of Energy
Topic: Elk Hills

Oil industry sponsorships and tickets will be on sale in January for $30/person
For more information, please contact Kyle Koerner at (805) 399-4270.

CONTINUING EDUCATION

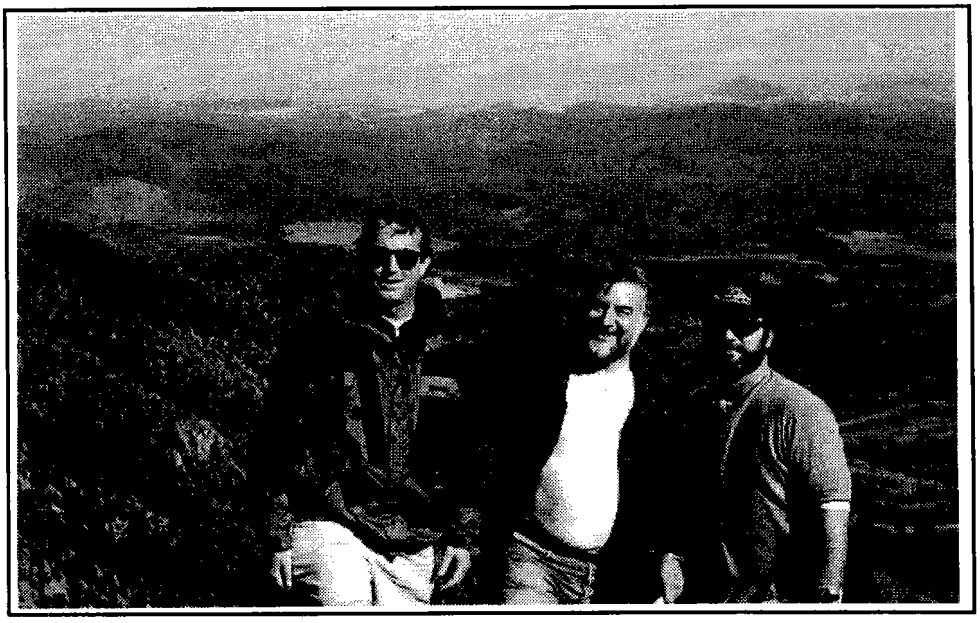
Horizontal Wells for the Recovery of Heavy Oil and Bitumen

A three-day short course will be taught by Dr. Roger Butler of the University of Calgary on April 8-10, 1997 from 8:00 A.M. to 5:00 P.M. at the Norris Road Training Center. This course should be attended by reservoir and production engineers, geologists, and others interested in obtaining a broad understanding of the technology of horizontal wells and of their application to the production of heavy oil and bitumen.

This course provides the participants with a broad background knowledge of the subject and of its applications in the field, means for predicting and understanding the performance of horizontal wells relative to conventional wells, and guidelines for identifying and evaluating opportunities for the application of horizontal wells. The course covers cold production with horizontal wells and Steam-Assisted Gravity Drainage (SAGD). Participants will receive a copy of Horizontal Wells for the Recovery of Oil, Gas and Bitumen .

Dr. Butler is president of GravDrain Inc., providing consulting services for the application of horizontal wells, SAGD and related technologies. He has over 20 years experience in the field of horizontal wells and heavy oil. Dr. Butler holds BS and Ph.D. degrees in engineering from the Imperial College of Science and Technology of the University of London. He was a Distinguished Lecturer for SPE in 1987-1988 and in 1992-1993.

The registration deadline is March 18. The registration fee is $550 (textbook and supplementary notes included). For more details, contact either Behrooz Fattahi or Dr. Butler at (403)220-7133.



From left to right: Tony Reid (President Elect, SJGS), Mark Wilson (Past President, PS-AAPG) and Larry Knauer (President, PS-AAPG) on their annual "fat man" trip. This time it was Humphrey's Peak, the highest point in Arizona. The trip was pleasant, but uneventful. So they got with Bryan Bell at PhotoWorks and asked him to improve the appearance of their vacation. Since they weren't fishing, they decided that adding a 20 pound trout to the photograph would look silly. However, adding a couple of lovely young ladies to a picture taken atop a 12,000' mountain made perfect sense. If your vacation photographs need a little boost, give Bryan a call. (Bryan also handles photo restoration of a more serious nature).

YOUTH ACTIVITIES - K-12

Pacific Section has set up a scholarship for teachers to attend CSUB Earth Science Course 447, . The course will be offered Spring 1997. The scholarship is being handled by the Kern County Science Foundation. If you know someone who may want to attend have them call Anne Santer at by March , 1997, to obtain application information.

Caltech Precollege Science Initiative (CAPSI) has continued to expand its K-6 Inquiry based program. California school districts currently participating include Pasadena, El Centro, Baldwin Park, Stockton, Hacienda La Puente, Desert Sands, Bakersfield, Tulare City, Lennox, and Lynwood. If you live in or near one of these districts and would like information about becoming a Science Partner, please contact Paul Henshaw at 805-395-6436.

Reminder: Kern County Regional Science Fair will be April 22, 1997. Local school Science Fairs will be running February through March. Judges are still needed. Please contact Paul Henshaw (395-6436) if you are interested.

Bud Reid (right) congratulating Jim Weddle on being awarded Honorary Membership in the Pacific Section AAPG at the 1996 Annual AAPG Convention in San Diego.

BILL RINTOUL

Trico's Burning Water Well

On a warm summer afternoon in 1951, John O'Conner, division gas gauger, put in a hurry-up call from the Trico gas field to Standard Oil Co. of California's 11-C office in Taft, 50 miles away, to report that a water well next to his lease house was on fire.

From 11-C, the switchboard operator relayed the message north to Delano, 12 miles east of Trico. A few minutes later a Kern County Fire Department truck and crew were on the way to the fire.

Putting out flash fires around drilling rigs and hosing down wooden derricks were all in a day's work to the county firemen, but when it came to battling a blazing water well they were understandably skeptical.

"They must have meant a burning gas well," one of the firemen reasoned as the crew raced over the bumpy stretch of blacktop road leading to the Trico gas field.

"Gas well, hell," one of his fellow fire fighters said a few minutes later when the truck arrived at the scene of the fire. "It really is a burning water well."

What the surprised firemen saw was a well with water bubbling four feet into the air and, leaping out of the bubbles, flames as high as thirty feet.

After battling the blaze more than four hours before subduing it, the fire fighters were ready to concede that there can be such a thing as a burning water well. The well, it turned out, was one used by the private duck-hunting club that was the only neighbor for miles around of the Standard Oil lease house occupied by O'Conner, his wife and 14 year old son.

The well that supplied water for ponds in the vicinity of the gun club had sanded up; the club's manager has called out a water-well drilling contractor from Delano to clean out the well. In the process, gas from shallow sand had joined water to create a blowout. A rock had struck a spark, and gas had caught fire, injuring two men and severely damaging the well driller's rig.

John O'Conner, who reported the fire over Standard's private line, which was the only telephone, took it all in stride. After many years experience in the Trico gas field, he didn't find it hard to believe that gas escaping through a water well might catch on fire and give the Kern County Fire Department its first official case of putting out a burning water well.

O'Conner, a Standard employee since the mid-1920s, had been a witness to some other interesting events at Trico. The field had been a 1934 discovery by Trico Oil & Gas Co.'s Harry H. Magee, who had been drawn to the area by the occasional presence of gas in shallow water wells drilled by private duck clubs.

Assigned to Trico by Standard soon after the discovery, O'Conner had found life in the flat wastelands of the gas field could have its moments. One came in 1940 when a wild well blew gas for three days and nights at a rate estimated to be in excess of 120 million cubic feet per day. The well fortunately had been controlled before gas caught fire.

Landmarks were few and far between in the Trico area, which confused more than one outsider attempting to go places in the field.

On one occasion a crew of well shooters had been called out on a job at a drilling rig in the northern part of the field. While waiting at the rig, they decided to drive in to Alpaugh, a tiny village near the edge of the gas field, for lunch. On the way into town, they spotted their route by a long derrick along the way.

While they were eating, a crew from Trico Oil & Gas Co. skidded the derrick onto a new location several miles away. When the well shooters headed back to their job, they guided themselves by the derrick and drove half way to Kettleman Hills before becoming aware of their error.

Probably the most excitement that accompanied drilling a new gas well was occasioned by a contractor's identification of a property stake as being the well site stake. The contractor proceeded to drill the well on the property line, which resulted in a drawn-out court battle to determine who owned the well.

At one point in Trico's development, water from Tulare Lake flooded the field and O'Conner had to use a motor boat to check Standard's wells.

Through it all, the Trico gas field proved to be a significant producer. The field's shallow First Mya and Atwell Island sands produced 201.2 billion cubic feet of gas before the field was idled in May of last year.

ELK HILLS (NAVAL PETROLEUM RESERVE No.1)

THE FOLLOWING PRESENTATIONS REGARDING ELK HILLS WILL BE MADE AT THE PACIFIC SECTION CONVENTION IN BAKERSFIELD, MAY 14-16, 1997

ORAL PRESENTATIONS:

"The Use of Horizontal Drilling to Improve Production from a Tight Pliocene Reservoir, Western Shallow Oil Zone, Elk Hills, U.S. Naval Petroleum Reserve No. 1, Kern County, California" J. D. Davidson, L. C. Knauer, & H. V. Weyland

"Horizontal Drilling Program, Stevens A1-A2 Sands, Northwest Stevens Area, Naval Petroleum Reserve No. 1, San Joaquin Basin, California" J. B. Conard

"Preliminary Quantification of Adsorbed Gas in Monterey Shale Reservoirs at Elk Hills, Kern County, California" J. L. McIntyre, T. J. Hampton, S. A. Reid, M. L. Wilson, T. W. Thompson, & K. H. Greaves

"Application of Geostatistical Modeling and Reservoir Simulation in Management of a Turbidite Reservoir Waterflood, Elk Hills Oil Field, California" J. Wightman, M. E. Allan, & M. L. Wilson

"Case study of a Successful Low-Cost, Low-Pressure, Low-Volume Gas Injection Project in the Shallow Oil Zone, Naval Petroleum Reserve No. 1, (Elk Hills), Kern County, California" L. C. Knauer, J. D. Davidson, W. E. DeRose, & H. V. Weyland

"Making Better Structure Maps by Combining Direct Mapping and Conformable Mapping Techniques: An Example from the United States Naval Petroleum Reserve No. 1, Elk Hills, California" H. A. Deutsch, D. E. Hamilton, E. J. Naylor, & R. C. Duncan

"Chemical and Isotopic Studies of Oil Field Waters and Gases: Elk Hills Region, California" T. Torgersen & B. M. Kennedy

"Geochemistry of the Deep Well NPR 934-29R Drilled in Elk Hills Field, San Joaquin Basin, California" H. Almi & I. R. Kaplan

POSTER SESSION:

"Geology and Production Implications of Debris Flows in the C & D Shale Reservoirs, Elk Hills Giant Oil Field, California" M. L. Wilson, R. E. Dorsey, & M. E. Allan

ELECTRONIC POSTER SESSION:

"Development of a Geostatistical Model for Reservoir Simulation of a Peripheral Waterflood in the Main Body B Turbidite Reservoir, Elk Hills Field, California" J. Wightman

LUNCHEON AND PANEL DISCUSSION:

"Question and Answer Forum on the Impending Sale of the U. S. Naval Petroleum Reserve at Elk Hills" Panelists will include James Maples, Kern County Assessor, Dan Kramer, representing the California Independent Producers Association (CIPA), and a representative of the U.S. Department of Energy. Del Fortner, U. S. Bureau of Land Management will the session. Questions will be taken from the audience.

NEW AND REINSTATED MEMBERS OCTOBER 19,1996 THROUGH FEBRUARY 13, 1996

William " Casey" Armstrong, Armstrong Petroleum
Frederick J. Arnold, Minerals Management Service
Margaret M. Bach
Robert M. Beer, Southwest Engineering
Robert A. Belluomini, Law Offices: Robert A. Belluomini
Thomas F. Blake, Fugro-McClelland
Steve A. Fields, Division of Oil & Gas
Dibby Allan Green
Malcolm B. Green
Donald A. Greenwood
Paul E. Harness, Texaco Exploration and Production
Ronald G. Heck, R.G. Heck & Associates
Bryan Joyce, Texaco Trading & Transporation
John (Jack) Kingston
Kathleen LeBlanc, Mobil Oil Expl. & Prod.
onathan V. Leech, Dudec & Associates
David W. Mautz
Jeffrey C. Neuman, Texaco Ref. & Mktg. Inc
Yakov Nisenbaum, Mobil Oil Corp
Craig K. Ogawa, Minerals Management Service
Charles H. Parsons, Western Technologies
Christopher C. Phillips
John R. Powell, FUGRO
Perry Russell
Leon T. Silver, California Inst. of Technology
Timothy J. Thompson, Integrated Water Technologies, Inc
William Tracy, Co.of Santa Barbara/ Public Works Dept.
Kirk A Waln
Jack Weldon Wood, Labar-Ensign Inc.
Mark Yarlot

**Note: The large number of new & reinstated members for this issue and space constraints precludes us from providing addresses and phone numbers. The information for these members will be provided in the new directory. Thank you.

Inside this issue . . .

Deadline for the next issue (and your taxes) is April 15, 1997

NEWSLETTER of the Pacific Section–American Association of Petroleum Geologists is published bi-monthly (except in summer) by the Pacific Section. Material for publication, requests for previous copies, and communications about advertising costs should be addressed to ALLEN BRITTON, Core Lab, 3430 Unicorn Rd., Bakersfield, CA 93308. CHANGE OF ADDRESS, subscription, and membership inquiries should be directed to: MEMBERSHIP CHAIRMAN, PACIFIC SECTION AAPG, P.O. Box 1072, Bakersfield, CA 93302. To order publications, write to:PUBLICATIONS COMM.: Pacific Section–AAPG, P.O. Box 1072, Bakersfield, CA 93302.

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PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section

American Association of Petroleum Geologists

JULY 1997 NO. 10

A MESSAGE FROM THE PRESIDENT

A great deal has taken place over the last twelve months. The worst of it was that we lost **Vic Church**. A grand gentleman and geologist, Vic passed away the 30th of May. His wife, Virginia, held a remembrance at the Racquet club, which was overflowing with friends and colleagues and befitted the man and his many facets. I owe Vic a debt of gratitude for hiring me when I was in need of a job in the 80's. That job happened to be running the **California Well Sample Repository (CWSR)** for three years, a project that Vic helped to start and one that he was always striving to improve. The June meeting of the San Joaquin Geological Society was Pass-the-Hat-Night for the CWSR. The member donated $500.00 and the SJGS Executive Committee matched it. I had the pleasure of presenting a check to the CWSR on behalf of Monterey Resources for $4000.00. I know Vic would have been pleased, but still looking for more. If you would care to make a donation to the CWSR in memory of Vic, please send it to CWSR, California State University, Bakersfield, CA. 93311. You may also want to make a donation to the **AAPG Foundation** in Vic's name. Their address is AAPG Foundation, P.O. Box 979, Tulsa, OK. 74104-0979.

On the other side of the coin, thought we haven't completely wrapped up the books on the **1997 Pacific Section Convention**, the numbers look good. It wasn't flawless, but it was close. Comments from attendees have been very positive. The technical program was timely and interesting. The short course and both field trips sold out. 640 people attended the meeting, which smashed a trend of declining attendance that we have had for the last ten years. Congratulations to the General Chairman, **Bob Timmer** (Mobil), and all the rest of the crew that worked for over a year to put on a very successful meeting. If any of you have constructive observations on what did or didn't work at the convention, please forward them to me by mail or fax.

The Midway Sunset Field guidebook, though expensive, is selling steadily and will probably see out again before the end of the year. Congratulations to all the folks at **Monterey Resources**, including **Tor Nilsen** and **Glenn Gregory** for a terrific effort at the 1996 and 1997 conventions. The field trips and the field guidebook have been very popular and profitable. Most of the money raised has been donated to the California Well Sample Repository. I suppose we should also congratulate Monterey Resources for their recent acquisition of **McFarland Energy**. I am going to miss the McFarland lease sign along Panama Road at the Canfield Ranch field. It reads E=MC2. (It looks better than I can type it).

Frank Cressy and **Mike Simmons** edited a new book (MP43) titled **"Geology of the Northern San Joaquin Basin Gas Province"**. If you are working that area this is a valuable addition to your library. It is available through PS-AAPG Publications.

The **A.I. Levorsen Award** for the best paper at the 1997 Pacific Section Convention will be presented at the 1998 Pacific Section Convention in Ventura next April. But I can let the cat out of the bag now..the award will be present to **Joe Nahama** who gave a talk titled "Exploration and Development in the West Tracy Gas Field." Joe's co-author was his father, **Rod Nahama**. Congratulations to both of you!!

If you didn't pick one up at the Convention, or the last meeting of the SJGS or the CGS, you should be getting your **Pacific Section AAPG-SEPM-SEG Membership Directory** in the mail about the same time that you get this newsletter. If you are not getting the Newsletter then your Pacific Section dues have expired or you have moved and not given us a forwarding address. The newsletters and the Membership Directories are bulk-mailed. Bulk mail is not forwarded by the Post Office.

The **Mobil & CalResources** merger is completed. The new company is called **AERA**. I understand that AERA has a few positions open for geologists. With their 250,000 BOPD production, they will be a major force in California. I know that **Texaco** and **ARCO** are looking for geologists as well. This is a healthy trend that hopefully will continue.

The trend of divestitures continues with the sale of the **Naval Petroleum Reserve at Elk Hills** by the **DOE** still progressing. In early 1998 some luck company (or companies) will be the proud new owner(s) of the U.S. Government's share of one of the great oil fields in the country. There is also talk of other mergers and sales. I'm afraid our Membership Directory is going to need a major overhaul.

This is my last column as President of the Pacific Section. I have enjoyed it and look forward to continuing my involvement in the Section's activities.

— Larry Knauer

Pacific Section

The 72nd annual Pacific Section was held in May 1997 in Bakersfield, California. The theme for the meeting was "New Frontiers in Familiar Places". Having five giant (billion barrel) oil fields in the area, plus the impending sale of one of them (Naval Petroleum Reserve #1, a.k.a. Elk Hills), provided plenty of grist for the mill. The technical session, field trip and excellent field guidebook on the Midway-Sunset field (160,000 BOPD) were very popular. The session on horizontal drilling in mature fields was packed. A short course on the "Advances in Reservoir Description Techniques, as Applied to California Oil and Gas Fields" was sold out. We shattered a long trend of declining attendance. The meeting drew 440 professionals, 35 exhibitors, 61 students and 90 spouses/guests. Many of the national AAPG officers were able to attend.

Honors and Awards conferred at the Pacific Section annual meeting included the following:

- Honorary Life Membership: Ben Cahill, Butch Brown, Jack West, & Bob Hindle
- Outstanding Educator Award: Dr. Robert Horton of Cal State University Bakersfield.
- A.I. Levorsen Memorial Award: Ron Crane

Membership is up for the first time in a decade. Affiliated societies making up the Pacific Section are: Alaska Geological Society, Coast Geological Society, Los Angeles Basin Geological Society, Northern California Geological Society, Northwest Energy Association, Sacramento Petroleum Association, and San Joaquin Geological Society. Several of the societies have evolved into environmental and engineering geology groups with very little petroleum production related activity.

The Pacific Section is solvent and continues to provide financial and technical support to our members and others in several ways.

- Joined with the AAPG Foundation to set up the John E. Kilkenny Memorial Named Grant, which will provide an annual scholarship.
- Funded the publishing of one of Tom Dibblee's geologic maps through the Dibblee Foundation in honor of the 1996 convention chairman, John Minch.
- Funded the California Well Sample Repository as an ongoing commitment and in memory of Vic Church who helped start the facility and pounded the pulpit in support of it to his last day.
- Provided the Kern County Science Foundation with scholarships for K-12 teachers.
- Were active participants and major contributors to the Department of Energy's High School Science Bowl, a nationwide program.
- Our members actively supported and participated in the Petroleum Technology Transfer Center (PTTC) at the University of Southern California.
- Our Newsletter continues to be published every other month. It typically runs 20 pages and provides a forum for news, technical data and social interaction.
- Published a joint membership directory with the local SEPM and SEG.
- Published or reprinted several books, including one titled "Geology of the Northern San Joaquin Basin Gas Province" edited by Frank Cressy and Mike Simmons.
- Provided funds to the local societies for AAPG Distinguished Lecturers.
- Organized the annual convention in conjunction with the SEPM.

New officers for 1997-1998 are Dalton Lockman, president; Mel Erskine, president-elect; Terry Thompson, vice-president; Kay Pitts, secretary; Joan Barminski, treasurer; and Larry Knauer, past-president. Bob Countryman will be the Pacific Section's member on the Advisory Council for the period 1997-2000. (Historic footnote: Bob did such a good job as vice-chairman of the House of Delegates last year that they decided to retire the position.)

Plans are well underway for the next PS-AAPG annual meeting to be held in Ventura in April 1998. Jon Schwalbach with Exxon in Thousand Oaks is the general chairman.

Larry C. Knauer, President

SCENCES FROM THE CONVENTION

Mike Clark (l), ARCO and Dan Fargo (r), Core Lab, relaxing after the 1997 Pac Sec Convention

Terry Thompson, Texaco, Nancy Knauer, DGI and Donna Thompson, SJEC - "Toasting the Convention"

AAPG HONORARY LIFE MEMBERSHIP AWARD

JACK WEST

by Gene Tripp

Jack spent most of his youth in the Pacific Northwest having graduated high school in Portland and then received his B.S. and M.S. in geology from the University of Oregon. Jack began his career with Texaco, arriving in Bakersfield with his young bride, Bonnie in 1961. They apparently lost their webfeet early as Jack has spent his entire career in California with the exception of a couple of temporary assignments.

From 1961 to 1974 he was an exploration and development geologist for Texaco in Bakersfield and Los Angeles. In 1974 he returned to Bakersfield as development and exploration geologist with Oxy until 1983 and as Exploration Manager until 1989. The next three years he was a Senior Petroleum Advisor at WZI and he is currently a petroleum consultant working for Epoch Well Logging.

Jack and Bonnie have successfully raised two sons and will soon be grandparents to twins.

Jack's outside interests have been trains and jazz. His interest in trains began with a summer job while in high school working in a roundhouse in Portland. He and his dad built a model train display that covered their basement. The model was packed for the move to Bakersfield and for every move since, but never unpacked. Maybe after retirement?

His love for jazz has resulted in many trips to concerts, including being a volunteer worker on many occasions. Although, by his own admission, he will never play New Orleans, he has been asked to play a mean sax a time or two with a Ventura band.

Should you call Jack or Bonnie at home, you will probably be serenaded in the background by Bonnieís exotic birds. The birds are not Jackís thing, however he does on occasion help out, including trying to emulate Bonnieís kiss on the beak when returning them to their cage, only once though, as a badly bruised lip probably lost him a jazz gig.

Humor aside, Jack has been a member of AAPG since 1962. He was elected vice president of the San Joaquin Geological Society in 1980 and president in 1981. In 1986 he was elected vice president of the Pacific Section AAPG and president in 1988. He continues to serve as the section representative to the California Well Sample Repository.

On the national scene, Jack was a member of the AAPG Advisory Council from 1991 to 1994. He is currently on the Certification Committee of the Division of Professional Affairs, have served as its secretary from 1995 to 1997. He recently returned from a committee meeting in Dallas, by train of course.

Gene Tripp (l) and Jack West (r) following honorary life membership presentation.

AAPG HONORARY LIFE MEMBERSHIP AWARD

EDWARD (BEN) CAHILL

by Roland J. Bain

Ben Cahill started his career in the oil and gas industry in 1956, after receiving his Bachelor's degree in geology from the University of the Pacific. While at Pacific, Ben starred as an impenetrable lineman. Those were the days, too, when a player saw both offense and defense duty.

Ben's first employment was with Exploration Logging. During his first 19 years with Ex. Log (1956-1975) he worked on projects in several western states as well as in Central and South America (both onshore and offshore). In 1975, Ben became a supervisor with Ex. Log, overseeing logging units throughout the Western U.S., including Alaska. During this latter stint, he supervised 30 geologists and services engineers and the related projects.

In 1977, Ben founded Energy Log in Sacramento and was president and owner until 1996. Work undertaken by Energy Log included geothermal projects in Japan and the Ascension Islands.

Ben has been a strong supporter and activist of and in various industry organizations throughout his career. He has held numerous positions in these organizations including:

National AAPG – 1984: House of Delegates and 1985: Membership Committee
Pacific Section AAPG – 1983: Convention Chairman, 1988: Vice President and 1990: President
Sacramento Petroleum Assn. – 1978: Vice President and 1979: President

His other professional affiliations include California Groundwater Association, Geothermal Resources Council, and Pacific Section of Society of Sedimentary Geology.

Ben Cahill has paid his dues. He has been a worker and a supporter in the oil and gas industry. He is completely worthy and deserving of Honorary Life Membership in the Pacific Section of AAPG. I am very pleased and honored that Ben asked me to speak on his behalf.

Roland Bain (l) read the citation bestowing honorary life membership upon Ben Cahill (r).

AAPG HONORARY LIFE MEMBERSHIP AWARD

BUTCH BROWN

by Edward A. Hall

After serving in the Navy in the Pacific Theater during World War II, Butch went to college, as many of us did, on the G.I. bill. Upon graduating from the University of Southern California in 1951, he joined Union Oil Company's Exploration department. His first five years in "the oil patch" were spent working on projects in coastal California basins, both onshore and offshore. It was during this period that he first became associated the Pacific Section of the AAPG.

For the next fifteen years he worked in the Rocky Mountain and Mid-Continent regions for the Union Oil Company of California. Upon returning to California in 1970 he re-established his membership in the Pacific Section AAPG and began an active involvement in both the Pacific Section and local societies. In 1973 he was elected secretary of the L.A. Basin Society and assumed the duties of president when Bob Wagner was transferred. Also, in the mid 70's he represented the L.A. Basin Society in the House of Delegates. In 1975 he ran for Treasurer of the Pacific Section but lost to Howard Stark.

When Union consolidated offices in Ventura in 1977 Butch became active in the affairs of the Coast Geological Society serving as president in 1978-79. He represented the Coast Society in the House of Delegates in the early 80's.

He served as vice president of the Pacific Section AAPG in 1993-94.

Other activities associated with both the Pacific Section and local societies have been technical program co-chairman of the 1987 National AAPG convention in Los Angeles, which was hosted by the Pacific Section. In 1988 at the Pacific Section meeting in Santa Barbara, Butch co-led, with Art Sylvester of UCSB, a field trip covering the Santa Barbara and Ventura basins. In 1991, at the National convention in San Francisco, also hosted by the Pacific Section, he was involved in a two-day short course on deep marine deposition and case histories in hydrocarbon exploration and development. In 1993 at the Pacific Section meeting in Long Beach he was co-convener of a session on sedimentation and stratigraphy in a two day symposium on south coast tectonics and geology, chaired by Tom Wright.

In 1996 Butch co-lead, with Tom Hopps and Bernie Santianin, a field trip sponsored by the Coast Geological Society covering the Tectonics, structure and sedimentation of the western transverse ranges. He and Art Sylvester will be doing another field trip in mid-June 1997 examining the neo-tectonics and associated sedimentation of the Ventura basin of the transverse ranges.

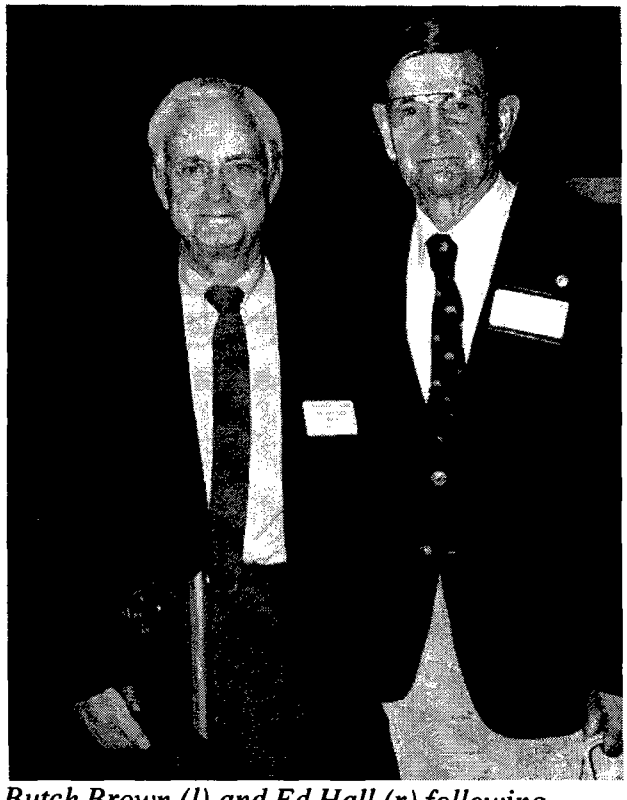
All this recent activity is from a man who supposedly retired in 1986!

During his 35 year career in "the oil patch" and eleven years of retirement, Butch Brown has belonged to 8 local societies; 3 Regional sections of the AAPG, the National AAPG and both the National and Regional SEPM.

He is a man who has a great love for geology and is still quite interested in the most recent concepts of the inter-relation of tectonic processes and resultant products. He loves a stimulating geologic discussion and on occasion plays "the devils advocate".

When he worked for Unocal he ran one of the best Paleo labs in the industry, thereby contributing data which led to the discovery of new areas of gas and oil production.

K.B. "Pete" Hall, Russ Simonson, Spence Fine, Ted Off and Harold Sullwald join me in recommending honorary membership for Butch Brown, a fellow professional and friend.



Butch Brown (l) and Ed Hall (r) following Butch's honorary life membership award.

AAPG HONORARY LIFE MEMBERSHIP AWARD

ROBERT HINDLE

by William Merril

It is a pleasure and privilege to inform you that the Pacific Section of the AAPG has voted Bob Hindle Honorary Member. He is well qualified for this honor. Not only because he is an experienced geologist of high moral character but also because of his devotion to being helpful and assisting in causes which he believes are worthy.

Bob was born in Seattle but, with minor exceptions, has lived and worked in Southern California throughout his career.

Bob claims an extended family of eleven: his wife Marilyn, an attorney. Their attorney daughter Nancy and her attorney husband, Ken. Public Relations Director, daughter Cacy and her husband Peter. Their son, Jim and his wife Kimmy, and three grandsons.

Bob went through the Beverly Hills school system and on to UCLA where he majored in Campus Activities but got his degree in Geology in 1948. He was sports editor for the Daily Bruin and the UCLA Annual "The Southern Campus". He also earned his Certification in Petroleum Engineering at UCLA in 1956. Bob has been certified by the AAPG and the AIPG and is a Registered Geologist. Bob has contributed to AAPG publications and articles and to the Munger-O-Gram Annual Reports for some 20 years.

Bob has been busy along the way in community affairs and services with the Boy Scouts, Red Cross and as a speaker on earthquake safety and geology-as-a-career at Service Clubs and High Schools.

He has been: President of the Coast Geological Society, District Representative to National Vice President Pacific Section, Membership Chairman Pacific Section and in two years will be eligible for his "50 Year Pin".

Bob has continued his education with courses in Management, Human Relations, Corporate Planning, Petroleum Engineering and Petroleum Law.

Bob began his professional career almost immediately after graduation as Well-site Geologist for Sunray. Then Area Geologist for the L.A. Basin, Area Geologist for the coast and District Geologist in Newhall.

In 1961 Bob was moved to Casper, Wyoming to work in the high plains as District Geologist, then moved to Denver as District Geologist for the six states of New Mexico, Colorado, Wyoming, Montana, and the Dakotas.

In 1963 he was transferred back to Newhall as District Exploration Geologist. California offshore and the Bakersfield area were added to his responsibilities and he was promoted to District Development Geologist.

In 1972 Sun Oil Company purchased Sunray and Bob became a part of the ever expanding Sun Oil. He was again promoted to Manager of Geology Western District with more of both onshore and offshore responsibilities.

He retired from Sun Oil in 1985 and became a Consultant working under his own flag "Hindle Enterprises".

In 1988 Bob joined Tom Hopps and Howard Stark forming a Ventura Basin Study Group producing reports for industry clients.

Bob is still engaged in Consulting, when he has time. Mostly this is when he is waiting for delivery of a new driver and/or putter. (You all know that those clubs can't be straightened worth a darn).

Bob's career and personal life shows him to be a devoted member of the AAPG, Geologist, family man and golfer.

Robert Hindle (l) was made an honorary life member. His citation was presented by William Merril (r).

PACIFIC SECTION AAPG'S DISTINGUISHED EDUCATOR AWARD FOR 1997

Citation given by Dr. Robert Negrini (California State University, Bakersfield) on behalf of Dr. Robert A. Horton, Jr. (California State University, Bakersfield) on the occasion of Dr. Horton's receiving the Pacific Section AAPG's Distinguished Educator Award for 1997

I have been a colleague of Bob Horton's during all but one year of his 12-year career at California State University of Bakersfield. In this short time he has amassed an impressive record of service, scholarly activity and teaching.

His prodigious service to the community, university, and department is exemplified by any number of contributions ranging from societal offices, his support of the California Well Sample Repository (CWSR), and his thankless work as Chair of the Department of Geology at CSUB. For example, he is currently serving as a delegate to the Pacific Section of the AAPG and has served in the past as the President, Vice-President, and Secretary of the San Joaquin Geological Society. His official support of the CWSR is as a member of the board of directors, but his unofficial support as represented by his arm twisting of CSUB officials during countless numbers of back room meetings to keep this vital facility open and viable, is perhaps even more important. Many hours in such meetings have also been spent in convincing our administration that a high quality geology program is vital to any well-balanced university, especially one such as CSUB which operates in a service region with an economic base so dependent on the responsible search for and utilization of natural resources.

Bob is an accomplished scholar as epitomized by several high quality publications, an enviable list of grants, and the receipt of prestigious awards. G.G., he has several publications in the very best of journals which are reviewed by extremely critical, so-called "peers" who actually operate in an environment much more conductive to research than is available to Dr. Horton at CSUB. His research contributions include work on the classic problem of dolomitization, first as related to carbonate ores in the Colorado Rockies, then to the formation of modern carbonates in the Bahama Platform. This body of work appears as two articles each in GSA Special Paper #300 and in Monograph #7 published by Economic Geology and in an article in Geophysical Research Letters.

More firmly committed to CSUB and to his students rather than to beautiful field areas in the Colorado Rockies, Bob has recently turned his focus to fundamental problems of more local interest, that is the development and destruction of porosity, both anthropogenic and natural, in clastic rocks of the San Joaquin Valley. Specifically, he and his students have worked on the lithology-dependent effect of steam flooding on porosity and on a study of diagenesis which elucidates the importance of understanding porosity as a dynamic balance between the creation and subsequent destruction of secondary porosity. These works have been published in more local, but nevertheless rigorously peer-reviewed venues such as SEPM Publication #64, AAPG-SEPM 1996 Guidebook, and SJGS Selected Papers #7.

Bob's high quality scholarly works are not limited to written contributions. He also has a gift for public speaking as evidenced by his receipt of the prestigious Levorsen Award for the best paper presented at the 1993 meeting of the Pacific Section of the AAPG and by his recent nomination to be an AAPG Distinquished Lecturer.

His most important contribution to us all, however, is befitting of a term found in the name of the award we're giving him today. Bob is truly and "Educator". He demands of his beleaguered (but eventually, always grateful) graduate students the same adherence to quality that he puts forth in his own work. In today's world of runaway grade inflation at the university level, it's refreshing to see such a stance on maintaining high standards.

AAPG, as usual, has made an outstanding choice for this award. Because Bob is still at an early stage of his career, I'm sure I join the rest of you in looking forward to working with him for several years to come.

Dr. Robert Horton (r) of California State University, Bakersfield was honored as Pacific Section AAPG Distinguished Educator for 1997. Dr. Rob Negrini (l) presented the citation.

ELECTION RESULTS

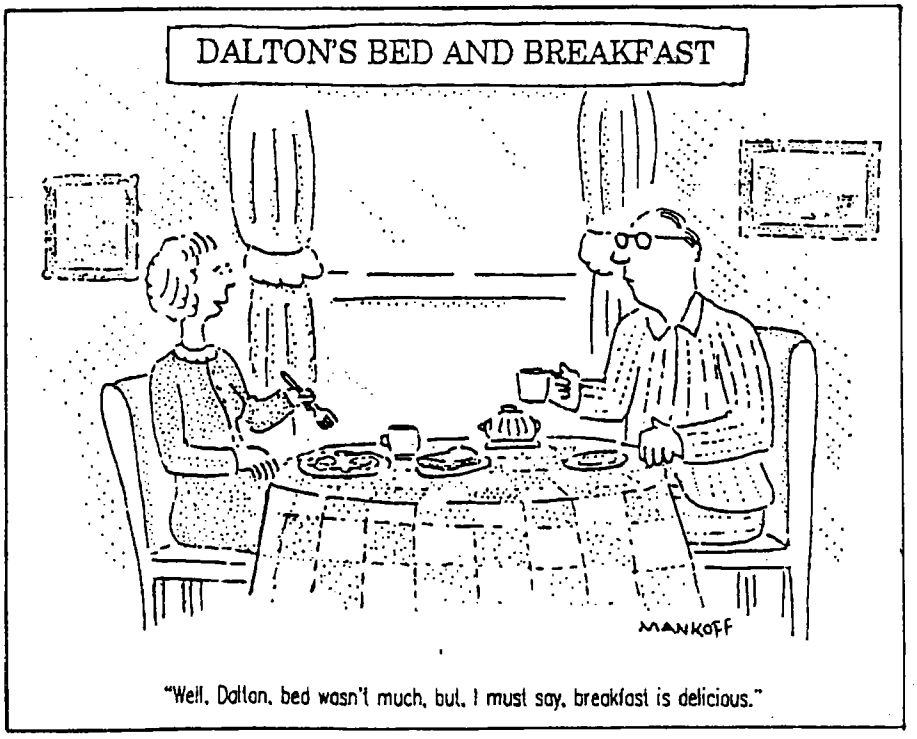
Pacific Section AAPG Officers for 1997-1998

President	Dalton Lockman	Exxon
Vice President	Terry Thompson	Texaco
Secretary	Kay Pitts	Bechtel Petroleum
Treasurer	Joan Barminski	Minerals Management Services
President Elect	Mel Erskine	Consultant
Past President	Larry Knauer	Bechtel Petroleum

National AAPG Officers for 1997-1998

President Elect	Richard S. Bishop
Vice-President	Roy D. Nurmi
Secretary	Elizabeth B. Campen
Editor	Neil F. Hurley

These people will take office on July 1, 1997, joining President Edward K. David; Treasurer, Steve Veal; and the incoming Chairman of the House of Delegates, Dan L. Smith.



"Well, Dalton, bed wasn't much, but, I must say, breakfast is delicious."

Best of Luck to Dalton Lockman on his upcoming year as President of PS-AAPG

K-12 ACTIVITIES

by Paul Henshaw

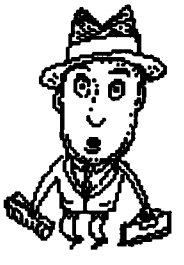
The school year is over!! Thank you to all who contributed your time and effort working on school, county and regional Science Fairs. Also thanks for helping on programs such as National Engineering week, Math Counts, Science Bowls, and presentations to individual classes. We'd like to hear about some of your best moments and breakthroughs.

The Pacific Section started a scholarship program for teachers taking Earth Science classes at Cal State, Bakersfield. This years recipients were: Patricia D. Miller, Kern County Superintendent of Schools Office; Rosann Wattonville, Rosedale Middle School; and Ana M. Williams, Standard Middle School. We'd like to consider providing support for teachers in other areas taking classes in other Cal State campuses. Let us know about your local programs.

Summer is a good time to start planning your involvement for the 1997-98 school year. Caltech Precollege Science Initiative (CAPSI) program is expanding throughout California. They need Science Partners in Bakersfield, Baldwin Park, Desert Sands, El Centro, Hacienda-La Puents, Lennox, Lynwood, Stockton and Tulare school districts.

Send a note to phns@chevron.com

Oops! Again



The May issue contained several typos the most glaring of which was the photo of Larry Knauer and Jack West. Jack West, of Epoch Well Logging, was mis-identified as Jack Clare. No small mistake and I regret the error. Besides, we have a much better photo of Jack in this issue.

— Editor

1995 A.I. Levorsen Award

The A. I. Levorsen Award is an award given each year by the National AAPG to the author of the best paper presented at each of the Sectional meetings. The recipient of the A. I. Levorsen Award for the best paper presented at the 1995 Pacific Section Meeting is Ron Crane a consultant from Danville, California. (Ron also won this award for the paper he presented at the 1985 Pacific Section Meeting. We look forward to seeing Ron at the 2005 Pacific Section Meeting). The abstract of the paper Mr. Crane presented at the 1995 meeting follows:

Geology of the Mount Diablo Region

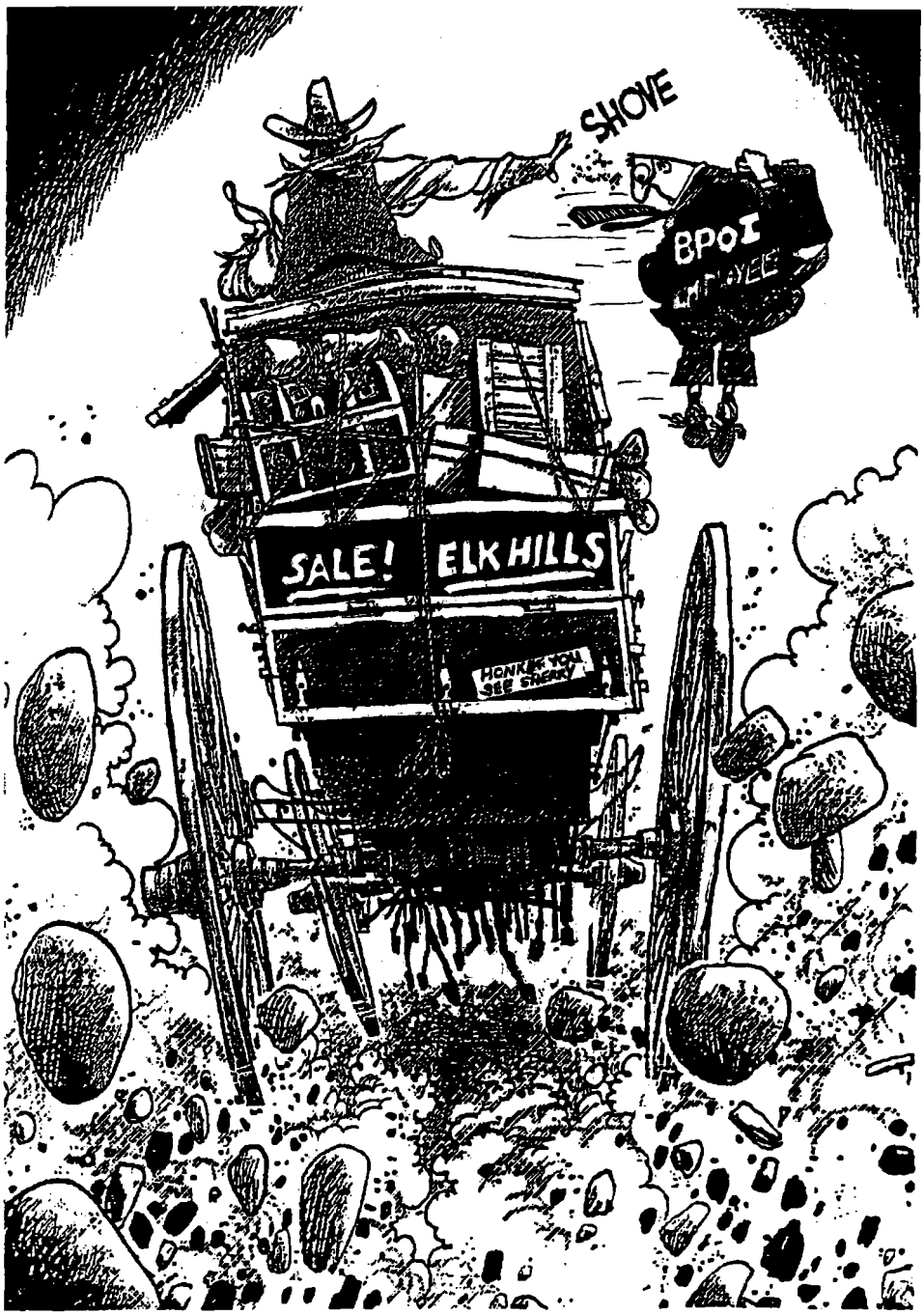
Mount Diablo is a late Pleistocene-Holocene backthrust structure, formed by a deep, underlying wedge of unknown composition, which is driving to the northeast on a blind thrust at basement level. The eastern flank of Mt. Diablo has been detached and passively tilted at a 45-degree angle, exposing a section of Jurassic to Holocene rocks.

The tilt of the flank exposes a stratigraphic and structural cross-section of the southern Sacramento Basin, including listric normal faults, grabens, submarine canyons, and reservoir sands. One of the major grabens includes the eastward-bounding master Midland Fault, the Brushy Creek sole, and the western bounding Kirby Hills-Kirker Pass Fault. The wedge-backthrust reoccupies the same fault plane over part of its length.

The Jurassic ophiolite and Franciscan lithologies originated as a massive gravity slide in early Cretaceous time and formed a subsea tog graphic high in a deep through. Cretaceous and early Tertiary prograding fans from the N&E thinned and lapped out on the high. The high was buried in Miocene time, but remained a shelf edge, with deeper water to the west. Stratigraphy on either side is fundamentally different.

In Late Pleistocene, the Mt. Diablo structure started growing passively as a response to the NE moving wedge and a series of westerly directed backthrusts formed. The N&E structural boundaries of the Mount Diablo Region are at the axis of a syncline, which extends around the structure under the Great Valley. Tears and thrusts subdivide the structural domain, including faults such as the Concord, Diablo, Riggs Canyon, Morgan Territory, Kirker Pass, Kellogg Creek, Brushy Creek and Greenville Faults. The frontal boundary is a subsurface tear following Highway 242 which turns into a exposed high-angle thrust, placing west-vergent Castle Hill against the east-vergent East Bay Hills domain at Tice Valley. A buried blind thrust follows the east side of the San Ramon Valley, the base of the Dougherty hills and forms the north flank of the Livermore Valley. The Green Valley Tear divides this plate into 2 domains.

David Umali, Phil Rarey, Mike Minner and Larry Woodford gear up for the Dibblee Field Trip!



A sense of humor will get you through the tough times.

GEOLOGISTS ON THE MOVE

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NCGS Notes by Dan Day

Sierran Uplift Scrutinized at May NCGS Meeting

It has been several years now, but the NCGS finally booked a return engagement of popular Bay Area regional geologist Dr. David L. "Davey" Jones, Professor Emeritus at U.C. Berkeley. An audience of about 30 crowded into a meeting room at the Concord Holiday Inn on the evening of May 15th to hear Davey expound on on the night's topic: "Uplift of the Sierra Nevada: Fact or Fancy?"

Dr. Jones began his informal presentation with a discussion of uplift tectonics, generally associated with crustal thickening and crustal dynamics; and its counterpart exhumation, the exposure of formerly deep-seated rock types that is normally affiliated with crustal stretching. He pointed out two contrasting types of uplift: rock uplift, involving the exposure of deep-seated rocks; and topographic uplift, which is quite difficult to document. The Sierras are an excellent example of topographic uplift that occurred in two phases—the uplift of the plutonic (batholith)-metamorphic complex in the late Mesozoic, and the Tertiary uplift addressed so well by renowned geologist Waldemar Lindgren at the turn of the Century. The main focus of Davey's talk was the commonly held notion that the topographic asymmetry of the Sierras—a gently sloping western flank rising to nearly 8000 feet in the north and to over 14000 feet in the south, only to plunge steeply several thousand feet over tens of miles on the east—was caused by block tilting of the range, with its east side up.

The Sierras have an interesting history, beginning with syntectonic intrusion of mafic plutons into metamorphosed turbidite sediments in the north at ~130 to 140 m.y. ago, followed by undeformed granodiorite intrusion comprising the main body of the batholith ~80 to 100 m.y. ago. A small cluster of plutons in the easternmost part of the complex date back to Triassic times. The eroded surface of these crystalline rocks can be contoured, and traced by drilling and aeromagnetic/gravity surveys into the subsurface of the Sacramento Valley. This surface suddenly changes to a steeper slope where the range meets the Great Valley sediments. This "hingeline" is exposed at Folsom, and is a depositional contact that has remained within 100 meters of sea level since the Mesozoic. The sudden slope change in the basement erosional contact west of the hingeline indicates the Great Valley subsided.

The presentation shifted to mineral geobarometer studies conducted by George Brimhall on various plutonic rocks from the northern Sierra Batholith. Brimhall's studies of mineral suites from the intrusives give the depths at which the plutons crystallized. The pattern that emerges reveals greater uplift (deeper intrusion) for intrusives on the western margin of the Sierras than in the younger undeformed granitoid terrains to the east. Independent studies by Jason Saleeby of Caltech yielded emplacement depths of 24 km. for plutons exposed in the southern Sierras. The northern Sierras experienced greater uplift on the west during late Mesozoic times. Uplift ended in pre-Eocene times.

The crust in Nevada was ~70 km. thick by the end of the Cretaceous, and was at an elevation higher than the Sierran terrain. Basin and Range crustal thinning commenced ~15 m.y. ago, preceded by Oligocene crustal heating and rhyolite eruptions that formed the tuffs of the Valley Springs Formation unconformably overlying the Eocene Auriferous Gravels. The andesitic volcaniclastic deposits of the Mehrten Formation were in turn laid unconformably onto the Valley Springs Formation ~4 to 10 m.y. ago. A projection of the basal contact of the Mehrten eastward intersects the Sierran crest at about 7000 feet, consistent with its interpretation as an ancient erosional surface with a gentle dip of 1 to 1.7° westward. The subsequent deep canyon-cutting that has occurred along the western flanks of the Sierras post-dates the Mehrten, and is a key feature used to support the block tilting theory of Sierran uplift. Dr. Jones dismissed this argument by suggesting that the water released by melting Sierran glaciers during the Ice Age was sufficient to erode deep canyons without calling upon major uplift to supply the energy gradient. Davey interprets the steep eastern slope of the batholith as an artifact of Basin and Range crustal extension, with the eastern block down-dropped relative to the Sierras.

Davey's theory meets strong opposition from two camps that favor major Sierran uplift in the late Tertiary. One is paleobotanical evidence provided by Daniel Axelrod's exhaustive studies of plant fossils in Nevada, which indicate low elevations and a wetter subtropical climate there in the early Tertiary, a con-clusion that prohibits any significant mountain barriers to the west at that time. The late Cordell Durrell argued a Nevadan source for chert cobbles in the Auriferous Gravels, which similarly requires a lower Sierran terrain to transport the cobbles to their current location. Davey's personal examination of Nevadan cherts has thus far failed to find a match with those in the Auriferous Gravels.

Dr. Jones' talk on Sierran uplift is a reminder that there can often be more than one interpretation of what might seem to be straightforward geological features. His theory proposes major Sierran uplift in pre-Eocene times, with minor localized Tertiary block faulting, and shaping of the steep eastern Sierran scarp by mid-Cenozoic Basin and Range extension. The late Tertiary deep canyon-cutting was accomplished by post-Mehrten glacial meltwaters on a gently sloping fossil erosional surface topographically similar to the Valley Springs-Mehrten unconformity.

Continued on page 15

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Nominations for 1997-1998 Executive Committee

President:	*John Karachewski*
President-Elect:	*Dan Day*
Vice President:	*Don Hill* (Field Trip Chair)
Secretary:	*Clark Fenton*
Treasurer:	*Ed Simonis*
Program Chair:	*Don Lewis*
Scholarship Chair:	*Roger Greensfelder*
Couselors:	*Dieter Letsch* (Programs)
	Bob Horwath (Field trips)
	William Bailey (Programs)
	Greg Bartow (Field trips)
	Tim Ault (Field Trips)
	Frank Picha (Programs)

Don Clarke (l) President LABGS, Larry Knauer (m) President Pac Sec AAPG and Mark Wilson (r) Past-President Pac Sec AAPG, laugh it up at the post-convention party.

Mel Erskine, Tom Hampton and Tor Nilsen

DELEGATES COLUMN

Robert L. Countryman (San Joaquin Geological Society)

This issues column has a "guest author", Ms Jeanne E. Harris, the outgoing HOD recording Secretary and a delegate from the RMAG. Jeanne wrote the below report for the next issue of the House of Delegates Newsletter and, since it so succinctly covered the events of the annual HOD meeting, I felt it should be reprinted here to keep all of the Pacific Section members informed of the activities at the HOD. Several other things that are occurring at the HOD include efforts to streamline the membership process for AAPG and efforts to get the HOD onto the internet. These activities will be covered in more detail in future columns.

REPORT FROM THE HOD ANNUAL MEETING IN DALLAS
By Jeanne E. Harris, Recording Secretary

The Dallas Meeting was a very busy and successful meeting. The changes in HOD Officers to Chairman, Chairman-Elect, and Secretary/Editor easily passed, and Daniel L. Smith, Tom Mairs, and Jeffery C. Greenawalt, respectively, were elected. I want to particularly thank E. Gerald Rolf, John R. Hogg, and M. C. "Mel" Erskine for being candidates and to encourage them to run again.

A Newsletter Committee, an Honors and Awards Committee, and the Future of Earth Scientists Committee were all made standing committees of the HOD. The report of the Ad Hoc Future of Earth Scientists Committee is excellent, and I would encourage you to read it (included in HOD meeting packet). Tom Ahlbrandt and his committee provided some very thoughtful recommendations that were passed by the HOD and referred on to the Executive Committee and other committees. Herb Davis, Chairman of the ad-hoc History Committee, compiled an extensive history of the HOD, and we will be sharing this history in future Newsletters.

The Ad Hoc International Representation Committee, chaired by John Hogg, recommended to (1) develop International Regions and continue US Sections, (2) allow election of delegates by Regions/Sections, and (3) modify the Advisory Council to better represent Regions/Sections. The report was accepted and referred to the Constitution and Bylaws Committee, the Rules and Procedures Committee, the AAPG Executive Committee, and then to the HOD Meeting in Salt Lake City, Utah, next year. I would encourage each of you to review this report and discuss it in upcoming Newsletters.

We approved and welcomed two new Affiliated Societies, the Asociacion Geologica Argentina and the Associacao Brasileira de Geologos de Petroleo. It was a pleasure to greet their representatives, Carlos Urien (Argentina) and Raul Mosman (Brazil), and welcome them to AAPG.

The recommendations of the Ad Hoc Campaign Practices Committee, chaired by Charles "Chuck" Noll, were to have candidates receive more exposure through (1) candidate videos at meetings, (2) encouraging President-Elect candidates to attend Affiliated Society meetings, and, if both invited, address the membership, (3) profile HOD Chairman-Elect in the *Explorer*, (4) profile all officer candidates in HOD *Newsletter*, (5) provide up to $1000 for travel expenses of candidates, (6) change language in the current policy to expand communications between candidates and members. The report was accepted and referred to the Executive Committee. Recommendations will be brought to the HOD next year in Salt Lake City.

Two other changes to Constitutions and Bylaws were passed at the meeting. Active members may hold a Master's or Doctor's degree, not just a Bachelor's as previously. We also passed a provision that an HOD officer who is not otherwise a voting Delegate shall be a voting At-Large Delegate. Under New Business, it was recommended to the Constitutions and Bylaws Committee to change Active members from those who practice or teach just geology to those who practice or teach the geosciences. Another motion under New Business was to eliminate the requirement that an Active Member have three recommendations failed to pass (see Membership Committee Report on page 5). The HOD adopted a RMAG Delegation's resolution to commend the Executive Committee and the Continuing Education Committee on their efforts to lower costs for education courses and to encourage them to continue.

(Only 20 copies available)

"Geology of the Midway-Sunset Oil Field and Adjacent Temblor Range

San Joaquin Basin, Kern County, California"

Pacific Section AAPG Guidebook (GB 75).
Price is $200.00 (includes shipping & handling).

This special volume was assembled for field trips run during the 1996 National Convention and the 1997 Pacific Section convention. It contains over 400 pages of text, maps, cross sections, core photographs and logs (many color and oversized displays). This is a terrific look at the geology of the largest producing field (160,000 BOPD) in the lower 48 states.

Another new publication for 1997 is

"Geology of the Northern San Joaquin Basin Gas Province"

Pacific Section AAPG Miscellaneous Publication (MP 43).
Price is $20.00 (includes shipping & handling)

If you are interested in the Sacramento Basin and the Northern San Joaquin Basin, this 100-page publication is an excellent Source of information on the geology and production of the area. It contains an extensive bibliography.

Make check payable to PS-AAPG.
Mail to: PS-AAPG Publications
P.O. Box 1072, Bakersfield, CA 93302

If you have any questions send them to the same address in care of the Publications Chairman, or call Larry Knauer at Bechtel Petroleum (805) 763-6280.

BILL RINTOUL

A resolution adopted by unanimous consent of the board of governors of the California Well Sample Repository has conferred upon H. Victor Church the title of Director Emeritus No. 2.

The resolution honors Church for his instrumental role in establishing the Repository in 1976 and service as director from its founding.

"Through his efforts and dedication to geology and the value of well samples, he provided invaluable guidance over two decades of the operations of the facility," said Chairman Jim Weddle. "He brought recognition to the Repository by organizing open house displays of cores of major California oil producing formations".

A native of Berwyn, Illinois, a suburb of Chicago. Vic Church has been an active geologist for more than 50 years, during most of that time in Kern County. He is credited with geologic work that let to discovery of the North Antelope Hills field and new pools in the Midway-Sunset and Antelope Hills fields as well as major development of the Semitropic field. Along with exploratory work in Kern County, he is credited with gas discoveries at Millar and elsewhere in the Sacramento Valley.

Church came to geology as a second choice after starting his higher education at Carleton College, Minnesota, as chemistry major.

"Dr. Laurence Gould, second in command of the Byrd Antarctic Expedition of 1929, came to Carleton to teach geology," Church recalled in an interview. "He influenced me to major in geology." Church earned membership in Phi Beta Kappa before graduating magna cum laude from Carleton in 1936 with honors and distinction in geology.

He received a scholarship to Cal Tech and earned a master's degree in geology in 1937 as well as membership in Sigma Xi, the national scientific honor society. He went to the University of Chicago on a fellowship and in 1940 earned a doctor's degree in geology.

From Chicago he went to Logan, Utah, where he taught geology for four years at Utah State before moving on the Deep Springs Junior College east of Big Pine, where he taught for one more year.

"I decided I'd been in school all my life," Church said, "so I sent my resume around to three oil companies." All three offered him employment. He joined Shell Oil Co. and continued with the company six years, spending most of that time in Bakersfield with some work in Wyoming, where he had done field work for his doctoral dissertation.

He joined Oceanic Oil Co. in 1951 as chief geologist, later becoming exploration manager. During five years with the company, he participated in development of more than 3,000 barrels a day of new production on the West Side.

In 1956, he joined the late Jack Beach and Ainslie Bell in forming Beach, Church & Bell. He left the partnership in 1961 to become a consultant. In the early 1970's he became associated with Ed Green and Max Eastman in G.E.C. Oil & Gas Operations and continued as a consultant.

Church served as president of the San Joaquin Geological Society in 1952 and has had a long association with the national organization, serving as chairman of AAPG's House of Delegates and later on AAPG's national advisory council. In 1987, AAPG recognized his service to the science of geology with honorary membership in the organization.

Along the way he has written numerous papers, worked on field trips and guidebooks and served often as judge for papers at national conventions.

He and his wife of 57 years, Virginia, have found time to travel the world, not on business but "purely for our own interest". They have visited over 110 countries and enjoyed membership in the Travelers Century Club and the Explorer's Club.

For Church, one of the highlights of extensive travel was a swim in 1986 in the waters of Antarctica. He hastens to add that hot springs emptying into the Atlantic heated the water off Deception Island.

(Editor's note: Vic Church passed away on May 30th. Donations to the California Well Sample Repository in memory of Vic would be greatly appreciated. The address is: CWSR, California State University, Bakersfild, Bakersfield, CA 93311.)

Bob Timmer (l), convention chairman, and Dalton Lockman (r), incoming Pacific Section AAPG President deserve contratulations for a convention well done!

Inside this issue . . .

Deadline for next issue August 15, 1997

NEWSLETTER of the Pacific Section–American Association of Petroleum Geologists is published bi-monthly (except in summer) by the Pacific Section. Material for publication, requests for previous copies, and communications about advertising costs should be addressed to ALLEN BRITTON, Core Lab, 3430 Unicorn Rd., Bakersfield, CA 93308. CHANGE OF ADDRESS, subscription, and membership inquiries should be directed to: MEMBERSHIP CHAIRMAN, PACIFIC SECTION AAPG, P.O. Box 1072, Bakersfield, CA 93302. To order publications, write to:PUBLICATIONS COMM.: Pacific Section–AAPG, P.O. Box 1072, Bakersfield, CA 93302.

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PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section

American Association of Petroleum Geologists

SEPTEMBER 1997 NO. 1

A MESSAGE FROM THE PRESIDENT

It's the beginning of September and 1997 is moving at full speed. New Pacific Section officers began their duties in mid July with myself, Dalton Lockman taking over the President's position. I am very excited about the upcoming year and am truly pleased to have the opportunity to serve you, the members of PSAAPG.

I would like to welcome and introduce the officers for 1997 - 1998. **Mel Erskine, a consultant** form the North Coast Geologic Society will start his three year commitment serving as *President Elect*. **Terry Thompson, with Texaco** from the San Joaquin Geological Society takes over the *Vice President* position. **Kay Pitts, from Bechtel Petroleum** and the San Joaquin Geological Society is our new *Secretary*. **Joan Barminski, with the Minerals Management Service** from the Coast Geological Society who just completed a two year term as *Treasurer*, was re-elected to her second two year term as *Treasurer* (congratulations, I think?). **Larry Knauer, from Bechtel Petroleum** slides over and assumes the *Past President's* office. Larry, as he has demonstrated repeatedly, is a good and faithful servant to the Pacific Section, and I thank him for his ongoing leadership.

In the same breath, I would like to congratulate and thank the outgoing PSAAPG officers, Larry Knauer (*Pres*), Paul Henshaw (*VP*), Terry Thompson (*Sec*), Joan Barminski (*Tres*), and Mark Wilson (*Past Pres*) and the rest of the executive committee for performing a job well done.

Goals set for the upcoming year include a continued focus, started by Mark Wilson, on providing you, the members of PSAAPG, a greater understanding of the relationship between the Pacific Section AAPG and the various local geological societies. Hopefully, we can continue to provide valuable information to the professional and student and sustain our recent membership growth into the next millennium. In the mean time, we plan to bring the Pac Section into this century by introducing a Pacific Section Web Site. We recently launched a **1998 convention** ***Web Page***, and plan to load the site with useful "stuff" for the Pac Section geologist. If you haven't visited it yet, I urge you to take a look. How do I gain access to it you ask? First find a working computer terminal with phone modem and software for accessing the internet, turn it on, place the cursor in the address box or search box, and type ***http://www.west.net/~psaapg***. The computer will take a few minutes as it searches the "web" to find the site. Once there, the "*Ventura 98*" convention home page will welcome you. From this page, you may access the "Call for Papers" as well as other convention information. We will be upgrading the site soon and our goal is to have several areas on the site to visit including the complete listing of PSAAPG publications, the newsletter, the calendar, and other information, you, the members desire.

As I take hold of my new office, I want to thank everyone who volunteers time to PSAAPG and their local societies. As you know, it's your volunteer effort in our activities that makes us successful. Therefore, I encourage everyone to continue their involvement keeping us on track as we move forward at full speed.

— Dalton Lockman, President '97-'98

Inside this issue . . .

PACIFIC SECTION AAPG STUDENTS SUPPORTED AT REGIONAL CONVENTION

By Mark Wilson

The Executive Committee of the Pacific Section AAPG is very pleased to announce a significant enhancement to our program of supporting students at our local conventions. Until now that support has been limited to interest earnings on an emergency convention fund of $10,000 established a number of years ago. The earnings on this fund are used to pay registration, a luncheon and about $50 spending money for area university students selected to attend our convention. In 1997 the Executive Committee supported one student from Fresno, three from Northridge and two from Bakersfield.

The Committee has decided that about half the proceeds from our 1997 Bakersfield convention will be set aside to enhance not only the emergency convention fund, but triple our support of local university students attending our conventions. This will allow either more students to attend or allow us to expand our support to enrollment in short courses or field trips.

In addition to the grant program, the Convention Committee was able to extend convention privileges to local students through a volunteer program. Students were able to receive registration and a $20 certificate for Pacific Section AAPG or SEPM bookstores for a half-day of volunteer work at the convention. About a dozen students took advantage of this opportunity.

As an important part of the Pacific Section's mission to disseminate geologic information and to grow involvement in our professional societies, it was very gratifying to the Executive Committee to be able to enhance these programs for the future.

1997 PRICE LIST
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MISCELLANEOUS PAPERS		
MP 8 A Symposium of Papers Presented at the 40th Pacific Section AAPG Convention, Bakersfield, CA: AAPG, 1965, E. W. Rennie, Jr. (ed.) (Alphalto, Dutch Slough, Semitropic-Trico, Traps in Stevens Sand	2.00	1.00
MP 11 Preceedings of the North Slope Seminar, Palo Alto, CA: AAPG/NCGS W. L. Adkinson and M.M. Brosge', USGS (ed.)	2.00	1.00
MP 14 Selected Papers Presented to the San Joaquin Geological Society, Vol. 4: SJGS, 1972, (Ground Water Hydrology in Southern San Joaquin Valley, Meganos Gorge, Sherman Island, Sacramento Valley), H. E. Sugden (ed.)	2.00	1.00
MP 20 Contours on Top Miocene, So. L. A. Basin: AAPG/SEPM/SEG, 1973, D. S. McMurdie, J. C. Taylor & J. N. Truex (eds.)	2.00	1.00
MP 21 Geologic Map of the San Emigdio and West Tehachapi Mountains, Kern County, CA, 1973	2.00	1.00
MP 29 Criteria in Correlation: Relevant Principles of Science: AAPG, SEPM, 1979, R. M. Kleinpell	2.00	1.00
MP 30 Selected Papers Presented to the San Joaquin Geological Society, Vol. 5: SJGS, 1980 (Cal Canal, Pacoima, Kettleman City, Sacramento Valley)	2.00	1.00
MP 33 Preprints, 1980 Annual Meeting: AAPG/SEPM/SEG Pacific Section: AAPG, 1980 (Mist Gas Field, Winter Fm. Pedregosa Basin Trap Springfield Pine Valley, Nevada, Northern Fallon Basin, Nevada)	2.00	1.00
MP 34 Forty Years, The education of a Geologist, Thomas A. Baldwin: LABGS/AAPG, 1982	2.00	1.00
MP 35 Selected Papers Presented to the San Joaquin Geological Society, Vol. 6: SJGS/AAPG, 1984 (Yowlumne, East Brentwood, Edison, Lost Hills) G. W. Kendall and S. C. Kiser (eds.)	2.00	1.00

MP 36 62 Years: History of the Pacific Section AAPG: 1985, C. F. Green (ed.)	2.00	1.00
MP 37A Organic Geochemistry in Oil Exploration: AAPG, R. W. Jones and R. P. Phillip, 1987	2.00	1.00
MP 37B Tectonics, Sedimentation and Evolution of the Eel River and other Coastal Basins of Northern California: SJGS/AAPG, 1987, H. Schymiczek and R. Suchsland (eds.)	8.00	6.00
MP 38 Selected Papers Presented to the San Joaquin Geological Society, Vol. 7: SJGS/AAPG, 1988 (Landslide Oil Field, Upper Miocene Turbidites, Depositional Environments of the Eocene Domengine Fm.	4.00	2.00
MP 40 Environmental Field Trip Guidebook, 1991 Pacific Section Annual Convention, Bakersfield, CA: SJGS/AAPG, 1992, R. J. Menzie and H. B. Schymiczek (eds.)	2.00	1.00
MP 41 Structural Geology of the Sacramento Basin: Symposium Presented at the 1992 Pacific Section Convention, AAPG, 1992, V. B. Chevron and W. F. Edmonson (eds.)	18.00	16.00
MP 43 Geology of the Northern San Joaquin Basin Gas Province: AAPG, 1997, F. B. Cressy and M. L. Simmons (eds.)	20.00	18.00
<u>CROSS SECTIONS</u> CS 6 Sacramento Valley North from T23N/R1W to T16N/R1E: 1954 (2 sheets)	2.00	1.00
CS 7 Ventura Basin-Central from T5N/R23W to T1SR21W: 1956 (Santa Ynez Fault North of Ojai to Western Santa Monica Mountains)	2.00	1.00
CS 9 San Joaquin Valley Central from T21S/R12E to T15S/R23E: 1957 (San Andreas Fault to Sierra Nevada Foothills)	2.00	1.00
CS 10N San Joaquin Valley Central from T4N/R3E to T18S/R20E: 1958 (Rio Vista through Riverdale)	2.00	1.00
CS 10S San Joaquin Valley Central from T18S/R20E to T10N/R19W: 1958 (Riverdale through Tejon Ranch Area)	2.00	1.00
CS 11 San Joaquin Valley, West Side from T19S/R15E, MD B&M, to T8N/R23W, SB B&M: 1959 (Coalinga to Midway Sunset and across San Andreas Fault into Southeast Cuyama Valley)	2.00	1.00
CS 12 Santa Maria Basin from T11N/R34W to T5N/R34W: 1957 (from Cretaceous outcrop in Santa Ynez Mountains to Franciscan Outcrop north of Santa Maria River)	2.00	1.00
CS 13 Sacramento Valley, North-South from T29N/R2W to T3N/R2E: 1960 (Red Bluff to Rio Vista)	3.00	2.00
CS 14 L. A. Basin from T15S/R15W to T8S/R10W: 1962 (Beverly Hills to Newport)	3.00	2.00
CS 15 Sacramento Valley Central from T4N/R1W to T4N/R7E: 1967 (Suisun Bay to Lodi)	3.00	2.00
CS 16 Southern Sacramento-Northern San Joaquin Valleys from T3S/R10E to T8N/R1E: 1967 (Winters to Modesto)	3.00	2.00
CS 17 San Joaquin Valley, from T16S/R10E to T8N/R1E:1969 (Kingsburg to Tejon Hills)	3.00	2.00
CS 24 Correlation Section of NW Oregon (Astoria to Eugene)	3.00	2.00
CS 8R Revised Southern San Joaquin Valley from the San Andreas Fault to the Sierra Nevada Foothills: 1986	4.00	3.00

CS 25 San Joaquin Valley from T16S/R21E to T11N/R18W: 1987	4.00	3.00
CS 14RL. A. Basin: (2 sheets) (Santa Monica Mountains to Seal Beach; Seal Beach to Newport-San Joaquin Hills) 1987	4.00	3.00
CS 26 Cuyama Valley: 1987	4.00	3.00
CS 3R L. A. Basin, (Palos Verdes to the San Gabriel Mtns.): 1988	4.00	3.00
CS 27 San Joaquin Valley, Cantua Creek to Transverse Ranges, T11N/R21W t 17S/15E: 1989 (Fresno, King & Kern Counties) D. Sprouse (ed.)	4.00	3.00
CS 28 Northern L. A. Basin: 1990 (From Santa Monica Bay to Prado Flood Control Basin) J. C. West and T. W. Redin (eds.)	4.00	3.00
CS 29 Eastern L. A. Basin: 1991 (from San Pedro Bay to San Gabriel Mts.) J. C. West and T. W. Redin (eds.)	4.00	3.00
CS 30 Central Ventura Basin: 1995 (T5N/R19W to TIN/R18W); T. E. Hopps, H. E. Stark, R. J. Hindle, J. H. Thompson & G. C. Brown (eds.)	4.00	3.00
CS 31 Sacramento Valley: 1995 (T13N/R5W to T15N/R4E); R. Suchsland, J. Clare, W. F. Edmondson, R. Boyd & F. B. Cressy (eds.)	4.00	3.00
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CALL FOR PAPERS:

CONTRIBUTIONS TO THE GEOLOGY OF THE NORTHERN CHANNEL ISLANDS

THE PROJECT:
A volume of papers providing up-to-date information on the many new studies and understanding of the geology of the northern Channel Islands, co-sponsored by the Coast Geological Society and the Pacific Section AAPG. As such, it will update much of the information in Weaver et al.'s (1969) classic "Geology of the Northern Channel Islands" and Howell's (1976) "Aspects of the Geologic History of the California Continental Borderland". This publication will contain Dibblee and Ehrenspeck's new geologic map of Santa Rosa Island and will be issued in conjunction with a field trip to Santa Rosa during the May, 1998 Pacific Section convention in Ventura.

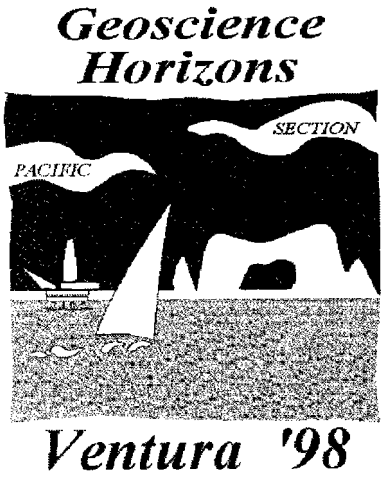
SOME TOPICS:
General geology of Santa Rosa Island
Sespe and Vaqueros Formations, Santa Rosa Island
Beecher's Bay Formation, Santa Rosa Island
The Cretaceous section, Santa Rosa Island
Volcanics on San Miguel, Santa Rosa, and Santa Cruz Islands
Marine terraces and faulting, Santa Rosa and Santa Cruz Islands
Evidence for extensional tectonics
Seismicity of the Channel Islands
Pygmy mammoth on Santa Rosa Island
Block slide on Santa Rosa Island
Poway clasts on Santa Cruz, Santa Rosa, and San Miguel Islands

THE FORMAT:
Similar to the Pacific Section SEPM paleogeography volumes.

THE TIMING:
Commitment from authors - Oct. 1, 1997
Final manuscript to editors - Feb. 15, 1998
Publication date - April 29, 1998

THE EDITORS:
John Woolley, Venoco, 805-966-6596, Fax 805-966-1425
Peter W. Weigand, Cal State Northridge, 818-677-2564, Fax 805-677-2820

CALL FOR PAPERS



The *Coast Geological Society* invites you to the 1998 AAPG-SEPM-SEG-SPWLA Pacific Section Meeting in Ventura, California, April 29 through May 1, 1998. We are inviting papers for both general and special sessions covering a wide range of topics. The two-day technical program will consist of oral presentations and half-day poster sessions. Short courses and field trips will be held before and after the technical sessions.

The theme for this year's convention, "Geoscience Horizons", should encourage us to look forward to the application of new technologies and new ideas in geology. The convention will feature field trips to Santa Rosa Island, the Ridge Basin and other nearby areas. A symposia on new developments in the Santa Barbara Channel is being organized to take a new look at the geology and development of this area. A special session for primary and secondary educators is planned.

The convention will be held at the Doubletree Hotel, Ventura. This facility is located adjacent to San Buenaventura State Beach Park and near the Ventura Harbor shopping district. Additional information about the convention, and an on-line Call For Papers can be found on our website at http://www.west.net/~psaapg

You are invited to submit abstracts for presentations on the following topics:

- Continuing Developments in Offshore California
- San Joaquin and Sacramento Basin Studies
- Marine Geology of the Californias
- West Coast Tectonics, Sedimentation and Stratigraphy
- Geology of the Gualala area, Northern California
- Reservoir Geology and Development Applications
- Horizontal Drilling
- Environmental Geology / Hydrogeology
- Earthquake Hazard Assessment and Prediction
- Sequence Stratigraphy in Active Tectonic Settings
- Utilizing New Technologies in Exploration and Development
- Computer Applications / Geologic Modeling / Visualization
- General presentations in Geology, Geophysics and Petrophysics

Additional suggestions are welcome for theme sessions, short courses and field trips.

❖ General Chair: Jon Schwalbach, Exxon Co., USA , P.O. Box 5025, Thousand Oaks, CA 91359, (805) 494-2249 ❖
❖ Vice Chair: Dalton Lockman, Exxon Co., USA P.O. Box 5025, Thousand Oaks, CA 91359, (805) 494-2205 ❖
❖ Technical Program Chair: Douglas Goff, CPTC, P.O. Box 446, La Habra, CA 90633, (562) 694-7689 ❖

NEWS FROM THE AFFILIATED GEOLOGICAL SOCIETIES

Alaska

Alaska Geological Society
P.O. Box 101288
Anchorage, AK 99510
Contact: Sue Karl
(907) 786-7428

Coast

Joe Schaaf (Applied Environ. Tech.) has been elected president of the Coast Geological Society. The next regularly scheduled meeting of the society will be September 16, 1997.

AMERICAN LEGION HALL - 83 S. PALM STREET, VENTURA, CA.
NORTHBOUND Highway 101 - Take California Street Exit.
SOUTHBOUND Highway 101 - Take Ventura Avenue Exit, West (left) on Thompson Blvd, North (right) on Palm St. East (right) on Thompson Blvd., North (left) on Palm St.

Social Hour - 6:00 p.m.;
Dinner - 7:00 p.m.

$12 - With Reservation*
$17 - Without Reservation
$ 5 - For Students/Teachers

Reservations: Please phone the receptionist at Fluor-Daniel GTI (805) 644-9811 by 10 a.m. on the Friday before the meeting date.
*RESERVATIONS ARE REQUIRED TO GUARANTEE DINNER

Coast Geological Society
P.O. Box 3055
Ventura, CA 93006
Contact: Imelda Cragin
(805) 681-4052

San Joaquin

The San Joaquin Geological Society kicks off its 1997-98 season with the annual Fall Barbeque and Golf Scramble at the Kern River Golf Course and Picnic Area on Friday, September 12, 1997.

The Golf Tourney is headed up this year by Dale Julander at Chevron (805) 395-6416 and will tee off at 8:00 AM. Cost is $40.00 per person and includes green fees, golf cart, lunch and prizes.

The Barbeque starts at 5:00 PM with an attitude adjustment period followed by dinner at 6:30 PM. Dan Fargo of Core Lab (805) 392-8600 will be doing the cooking again this year. Prepaid cost is $15.00 per adult and $7.50 per child. Tickets at the gate will be $18.00 for adults and $15.00 for children. Prepaid orders can be sent with a check to: San Joaquin Geological Society P.O. Box 1056 Bakersfield, CA 93302.

The regularly scheduled dinner meetings will resume on the 2nd Tuesday in October.

San Joaquin Geological Society
P.O. Box 1056
Bakersfield, CA 93302
Contact: Mike Simmons
(805) 321-4113

Sacramento

Noon luncheon meetings are held at the HUNGRY HUNTER RESTAURANT, 450 Bercut Drive, Sacramento For luncheon reservations, please call Jennifer at Delta Environmental Consultants, Inc. at (916)638-2085.

NEWSLETTER: If you wish to have something published in the SPA Newsletter, send it to PetroData (Jim Fossum) by the 20th of the preceeding month (916-488-1984) (FAX 916-488-5650)

Sacramento Petroleum Association
P.O. Box 254443
Sacramento, CA 95865-4443
Contact: Owen Kittredge
(916)638-2085

Northern California

The highly successful NCGS summer field trip to the gold deposits of the Sierra Nevada was held June 7-8, 1997. Led by David Lawler (FarWest Geoscience Foundation) and Dr. Greg Wilkerson (BLM), the over-subscribed trip visited several active placer and lode gold mines in Nevada and Sierra Counties.

The society's monthly meetings will resume in September.

Northern California Geological Society
9 Bramblewood Court
Danville, CA 94506-1130
Contact: Dan Day (510)294-7530

Los Angeles

UPCOMING SPEAKERS

Dr. John Minch will speak on "What are we going to do with all of the fossils?" on September 18, 1997. Dr. Minch has been running his multi-faceted paleontological business for many years. Prior that he taught geology at Saddleback College.

Dr. Thomas Henyey will speak on the Southern California Earthquake Center on Thursday Ocober 23, 1997. Professor Henyey teaches at the University of Southern California and is the Director of the Southern California Earthquake Center.

1998 LABGS Officers

The LABGS is looking for professionals interested in becoming officers. If you would like to volunteer or would like to nominate someone, please contact Curtis Henderson (562) 570-3937. Curtis is currently compiling a list of candidates for the election.

RESERVATIONS

The next luncheon meeting will be held at the Long Beach Petroleum Club, located at 3636 Linden Ave. in Long Beach on Thursday, September 18, 1997 at 11:30 a.m. The Petroleum Club is located is located just north of the San Diego Freeway (405) between Atlantic Ave. and Long Beach Blvd. Please make your reservations with Curtis Henderson at (562) 570-3937 by September 16, 1997. The cost is $17 for professionals and $6 for students.

Los Angeles Geological Society
c/o Don Clarke
Dept. of Oil Properties
211 E. Ocean Blvd., Ste. 500
Long Beach, CA 90802
Contact: Don Clarke
(562) 570-3915

STUDENT MEMBERSHIP SPECIAL!!!

Join the Pacific Section AAPG for $12.00 and receive membership to the world's largest geological society, the National AAPG, FREE !!

Benefits of membership include:

- Pacific Section AAPG bi-monthly newsletter
- Local geological society affiliation
- The AAPG *Bulletin*
- The AAPG *Explorer*
- The DEG Journal, *Environmental Geosciences*
- Special opportunities to attend professional meetings and short courses
- Student Job Search Internet Database
- Plus ...
- Each new Student member receives a FREE BOOK (select from a variety of quality AAPG publications up to $15.00 in value)

Membership for both Pacific Section and National AAPG are for one year. Student renewal rates after the first year are $12.00 and $10.00, respectively.

WHAT YOU NEED TO DO ...

1. Obtain membership application package from Pacific Section AAPG or Local Geological Society representative.

2. Complete Pacific Section AAPG Membership application card. Enclose check for $12.00, made payable to PS AAPG.

3. Complete National AAPG Membership application form.
You will need a sponsor's signature. An Active AAPG member is preferred as a sponsor, but endorsement by a faculty sponsor is acceptable.

Leave the payment section blank. National AAPG Student Membership will be paid on your behalf by the Pacific Section AAPG.

Make sure you select your **free book** on the last page.

4. Return all of the above to:
Pacific Section AAPG
Attn: Robert Countryman
Post Office Box 1072
Bakersfield, CA 93302

Well I'll be @%*#!*!

Shock and dismay! Once again an error has been perpetrated upon our membership! The photo on the bottom of page 15 in the July newsletter contained Tom Wright, not Tom Hampton! Hang the scoundrel responsible! Our apologies to the two Toms.

DELEGATE'S COLUMN

By Robert L. Countryman (San Joaquin Geological Society)

I've just returned from an Advisory Council meeting in Tulsa where we were brought up to date on the condition of AAPG and where we submitted an excellent slate of candidates for Honors & Awards to be given out at next years convention at Salt Lake City. Once these recommendations are confirmed by the Executive Committee, they will be released for publication.

The State of AAPG is very good. The final Membership tally was 29,904, which is down only 43 members for the year. Losses from deaths and retirements were almost offset by new members and a large increase in student membership. The membership decline appears to be arrested and perhaps 1997-8 will see our first membership increase in a number of years. If you know of any geologists who would like to join (or rejoin), contact any of your local society delegates for information on how to do this or call AAPG directly.

Profits from the Dallas Convention were on the order of $400K driven principally by the large turnout of attendees and exhibits. Efforts to recycle the profits into membership benefits are underway. One of these is to lower the cost of AAPG short courses to be offered at regional conventions. Other benefits and cost reductions should be forthcoming.

The incoming Div. Of Environmental Geologists (DEG) President is former Pac Sec member Sue Kiser, now living in Colorado. She reports the DEG is 5 years old this year and doing well. It's the second largest division in AAPG. They are very active and have sponsored sessions at all National and many regional conventions over the past 4 years. The DEG journal is now being offered to new students as part of their membership package to encourage them to join the division. If you would like to join DEG, or just to say Hi to Sue, give her a call at (970) 248-6937.

The largest division of AAPG is the Division of Professional Affairs, the certification arm of AAPG. Incoming President Bob Sellars is working with the various committees of DPA to further their goals this year. One of their major disappointments was the failure, once again, of the enactment of a geologist's registration bill in the State of Texas. They'll try again in 2 years. DPA membership stands at 3498 (down 81 since last year) and they're conducting an active drive for new membership. Many of you have already received information in the mail. Pac Sec reps John Howe and Jack West are the folks to contact for more information.

ECOLOGY FIELD TRIPS
Sponsored by
BUREAU OF LAND MANAGEMENT
And
BUENA VISTA MUSEUM OF NATURAL HISTORY

Submitted by Bob Michael
July, 1997

The Bureau of Land Management and Buena Vista Museum of Natural History have initiated a program of monthly earth science field trips to points of ecologic, geologic, paleontologic and historic interest throughout central California. These trips are designed for persons of high school age and older. It is not necessary to have a technical background to attend or benefit from the trips. These field trips are recommended for teachers and many of them can be taken for in-service continuing education credit through California State University Bakersfield. Each trip includes a full spectrum of environmental and land management topics. Some field trips are conducted using buses or vans. Private vehicles may also be used. A field guide is prepared for most of the field trips, which include maps, and directions which can be used by anyone for self-guided investigation of the ecology along the field trip route. Field guides are not included in the registration fee. They can be purchased separately on the day of the field trip. To register for trips, call the Museum at 805-324-6350 or send the registration form below.

Mother Lode '97 Part III

Central and East Belt Gold Mines: Jackson-Coloma-Auburn — Oct. 4-7, 1997

This field conference and symposia examines the mines east of Placerville and between Placerville and Auburn. Mining history and ecology at Coloma, Garden Valley, Georgetown, Volcanoville, Kelsey, and Cool are investigated. This field trip program is being conducted in conjunction with the 1997 North American Gold Panning Championships at Marshall Gold Discovery State Park. Field trips are Friday October 4 and Monday October 7. The "Ecology of the Gold Discovery Symposium" is held concurrently with the Gold Panning Championships on Saturday October 5 and Sunday October 6, 1997. This program is co-sponsored by Marshall Gold Discovery State Park and the American River Conservancy.

Bakersfield to Mojave and Red Rock Canyon — Nov. 1, 1997

Mercury mines near Keeler and the Cactus and Solidad Mountain gold mines near Mojave are visited. Then we go to Red Rock Canyon by way of the old salt mines at Saltdale. On the way we examine the Garlock Fault. The day ends with a tour down the Kern Canyon on our way back to Bakersfield. Management practices for the Mojave ground squirrel, Desert tortoise and Tehachapi salamander are discussed. Dr. Dave Wissler from L.A. County Museum will give a lecture on the paleontology of Red Rock Canyon.

Kern Canyon-Lake Isabella-Walker Pass — Dec. 21, 1997

The geology and ecology of the Kern Canyon, Kern River and Lake Isabella is investigated. Stops are made at the Keysville, Kernville and Weldon Mining Districts. Processes for recovery of tungsten and gold are discussed. Archaeology sites in the Walker Pass area (Solstice Rock and Birthing Stone) are also visited. This year we start at sunrise at the Solstice Rock.

San Andreas Fault: Coalinga to Pinnacles — Jan. 10, 1998

The Coalinga Sulfur Springs, San Andreas Fault and Pinnacles National Monument are the main stops on this trip. The history of earthquake activity including the Coalinga and 1992 Parkfield earthquakes are discussed.

Mother Lode '98

Part I: Southern Mines — April 3-5,1998

This 3-day field conference examines the mines, geology and mining history between Maricopa and Jackson. There will be a Friday Evening Lecture Series in Jamestown at the Community Hall 6:00-9:00 p.m. Saturday's trip will be from Jamestown through Columbia and then to the Hidden Treasure Mine and hence to the Westpoint Mining District via the Chaw Se Historic Park (petroglyphs, grinding stones). This tour ends at the Kennedy Wheels in Jackson. Sunday's Field trip starts in Coulterville and examines the mining areas of La Grange, Hornitos, Bear Valley and Mt. Bullion. The Sunday field trip ends with a stamp-mill demonstration in Mariposa and a visit to the State Mining and Mineral Museum. This trip is co-sponsored by the Far West Geoscience Foundation.

Mother Lode '98 Part II: Northern Mines

June 12-14, 1998

This 3-day field conference looks at the structure, stratigraphy and ecology of the Northern Mines of the Mother Lode in Sierra and Plumas Counties. Friday's trip will be from Camptonville to Taylorsville by way of La Porte. Saturday's trip will be from Taylorsville to Downieville by way of the Walker

Mine. Sunday's trip will be from Downieville to Grass Valley. There will be a Friday Evening Lecture at the Taylorsville Town Hall, 6:00 to 9:00 p.m.

TO PAY FOR YOUR RESERVATIONS
Make your check payable to "Buena Vista Museum of Natural History" and mail to Dave Schutzer, BVMNH, 1201 20th St. Bakersfield, CA 93301. For most programs, the registration fee for those riding in the BLM or BVMNH vans is $25.00 per person per day. For persons taking their own vehicles, registration is $25.00 per person or $40.00 per vehicle per day. If you have any questions about these field trip programs call Dr. Gregg Wilkerson at (805) 391-6177.

CALL FOR MOST RECENT DATES AND SCHEDULE, SOMETIMES WE NEED TO CHANGE FIELD TRIP DATES.

Name: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **#Persons in own vehicle:** _____

Field Trip Name: _____ **Dates:** _____

#Person in BLM vehicle: _____ **AMOUNT ENCLOSED:** _____

Bring a sack lunch, plenty of waterbring and a CB radio. (CB day rental $5.00)

BUENA VISTA
MUSEUM OF NATURAL HISTORY

Presents

A PALEONTOLOGY WORKSHOP

September 13, 1997, 9:00 am to 3:00 pm

1201 20th St at M

Learn about:

- California and Kern County Geology
- Former Kern county residents – Sharks, Whales, Camels and more
- How fossils are formed

The workshop will include 3 hours of classroom and 3 hours of "hands-on" training in fossil restoration. A fossil restoration certificate* will be issued upon completion of the workshop.

COST: $25.00
$20.00 for 2nd family member
$15.00 per family member 3 or more
$20.00 Students/Seniors

The workshop is limited to 20 people.

To guarantee your place, please fill out the form and remit with your payment.
For additional information call 324-6350

*This certificate is required to work as a volunteer in the Buena Vista Museum's fossil restoration laboratory.

Paleontology Workshop—September 13, 1997

Name_____ Address _____

City _____ State _____ Zip _____

Phone_____

Adult-General Admission ($25.00) _____
2nd family member ($20.00) _____
3rd family member ($15.00) _____
Student/Senior ($20.00) _____
Total _____

Make checks payable to:
Buena Vista Museum of Natural History
1201 20th St., Bakersfield, CA 93301

Payment by Visa/MC Card #_____ Expiration Date _____

Name on card _____ Signature _____

OTHER SOCIETIES

SPE

The San Joaquin Valley Section of the Society of Professional Engineers will hold its general lunch meeting on Thursday, September 11, 1997 at Hodel's in Bakersfield. The speakers will be Mel Blevins and John Broussard of Chevron U.S.A. Production Co. Their topic will be "Multi-Frac'ed Horizontal Wells Targeting Thin-pay, Flank Reserves at Lost Hills Field, CA." Fore more information, contact Joyce Holtzclaw at 392-3435.

The SPE's Drilling & Production Study Group will hold its meeting on Wednesday, September 24, 1997 at the Rice Bowl in Bakersfield. Klaus Keuter will speak on "Asphaltene Precipitation - Cause & Effects." Contact Frank Piccolo for more information at 321-6053.

SIPES

The Society of Independent Professional Earth Scientists is trying to establish a chapter in California. This organization certifies for "Professional Earth Scientist". The society serves the independent professional exclusively. It is cross-disciplinary, professional comprehensive and provides expertise in the major service areas. They will be holding the SIPES National Board of Directors meeting at the Marina Beach Marriott Hotel, Marina Del Rey, California on Saturday, September 13, 1997 from 11:30 a.m. until 2:00 p.m. For more information, contact Perry O. Roehl at 210-496-3940.

AADE

The American Association of DrillingEngineers will hold their dinner meeting on Thursday, September 18, 1997 at the Rice Bowl in Bakersfield. Dave Tickens of Torch and Mark Lombardi of Monterey will speak on "Horizontal Well Case Histories in the San Joaquin Valley." Contact Bob French at 325-5919 for details.

THE 1997 ANNUAL OIL AND GAS CONFERENCE

OCTOBER 23, 1997

DOUBLETREE INN—BAKERSFIELD, CA

"LOOKING INTO THE FUTURE"

FOR QUESTIONS PLEASE CONTACT
HAL BOPP AT (805) 322-4031
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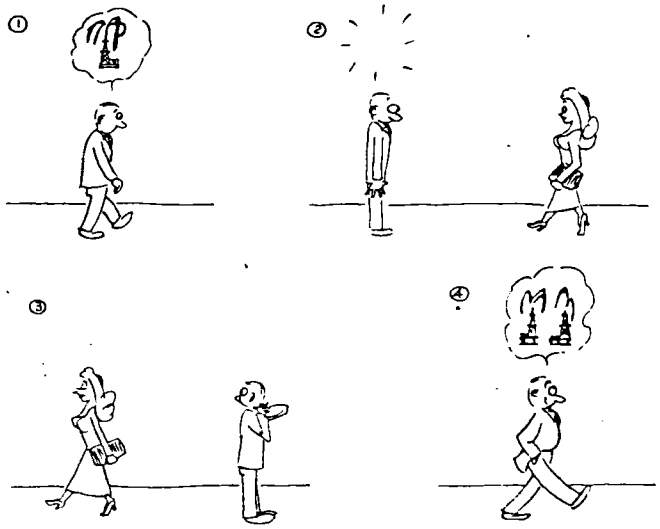
ANDY CLINE

BY sullwold

SEPTEMBER 1949



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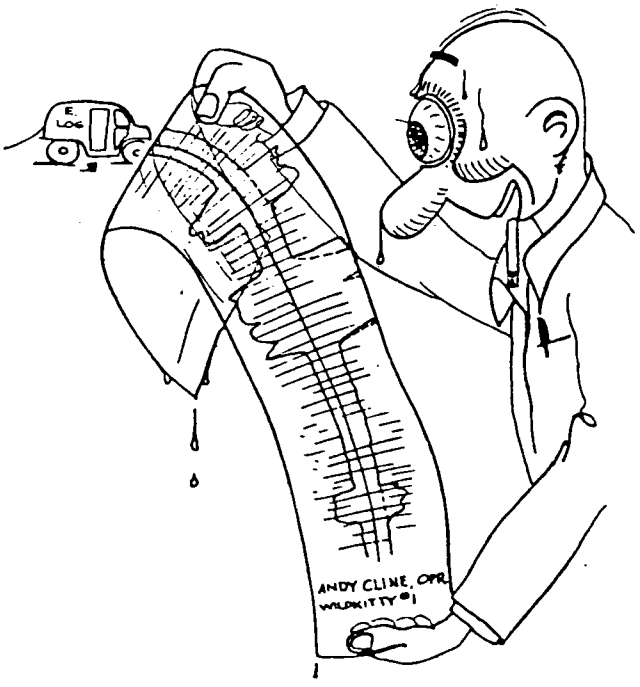

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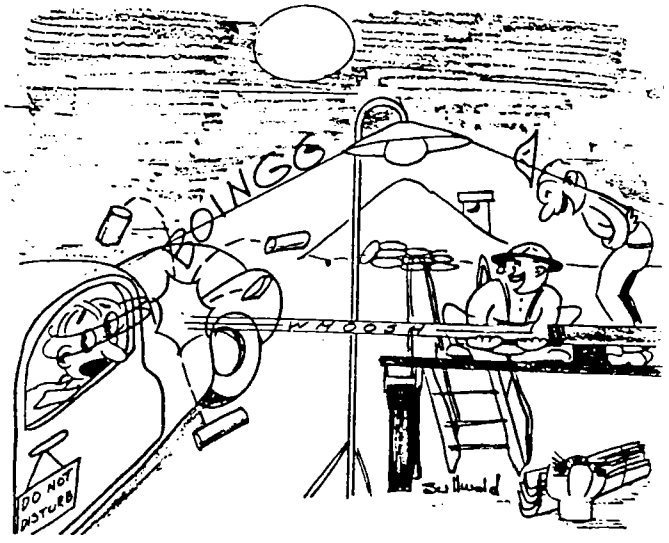
THANK TO GIL WILSON

AUGUST 1951



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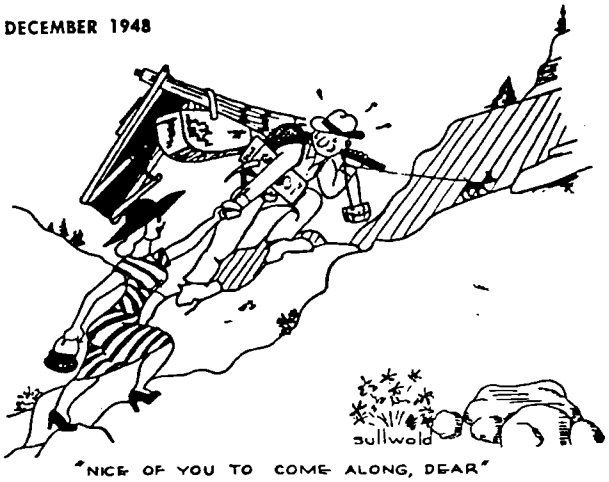
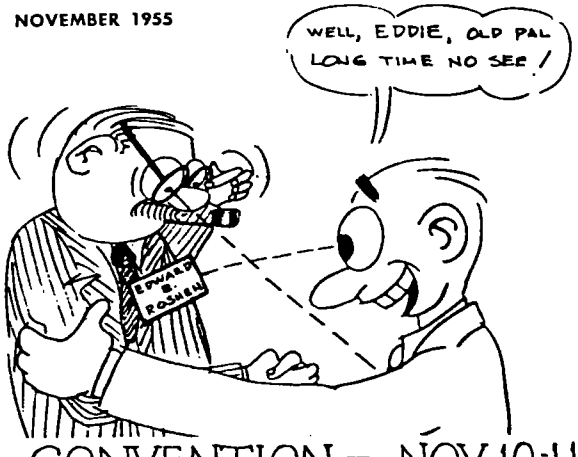


"NICE OF YOU TO COME ALONG, DEAR"

NOVEMBER 1955



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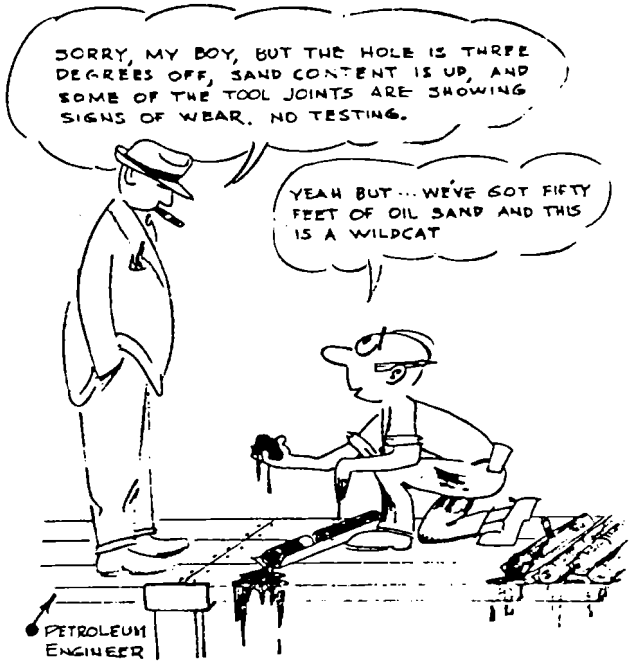
THANK GOD FOR THE NAME TAGS (THANKS TO MARY HUGHES, TOO)

ANDY CLINE by Sullwold

DECEMBER 1951



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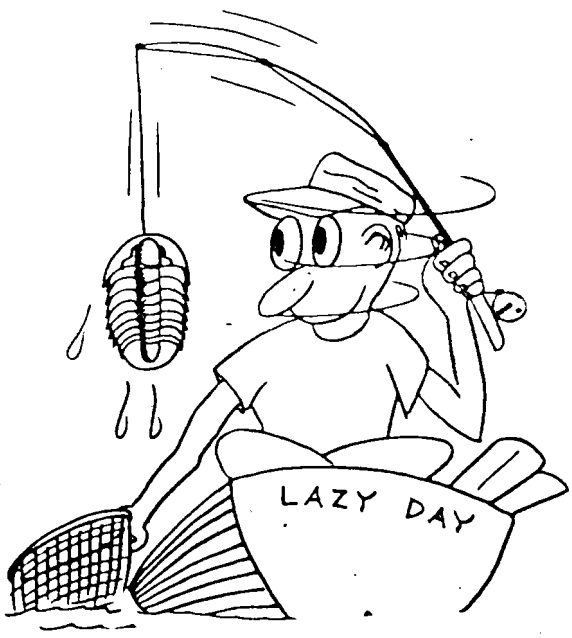

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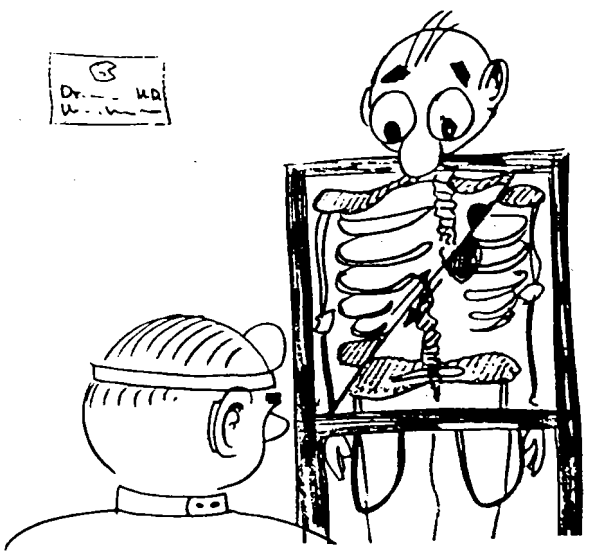

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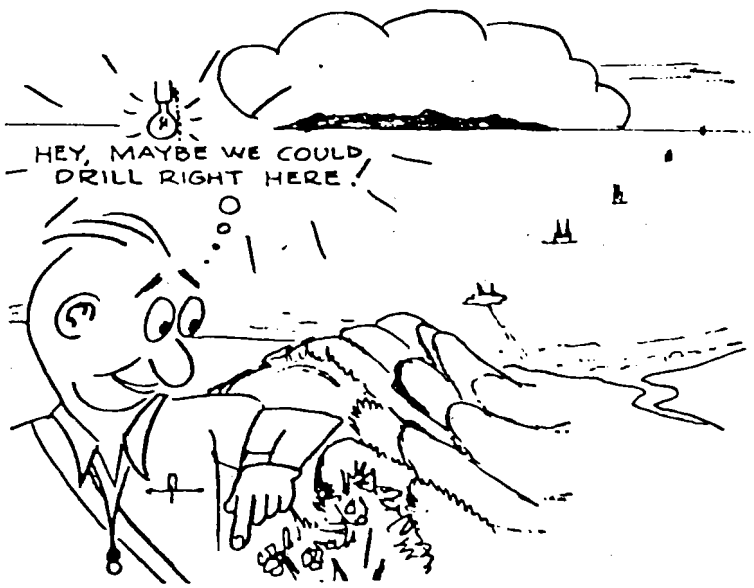

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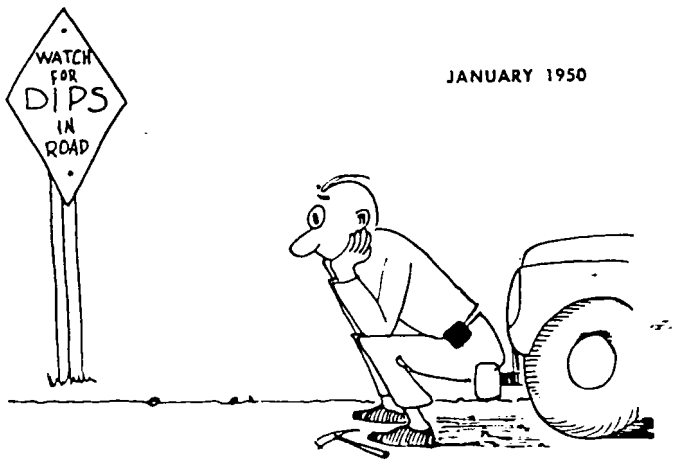

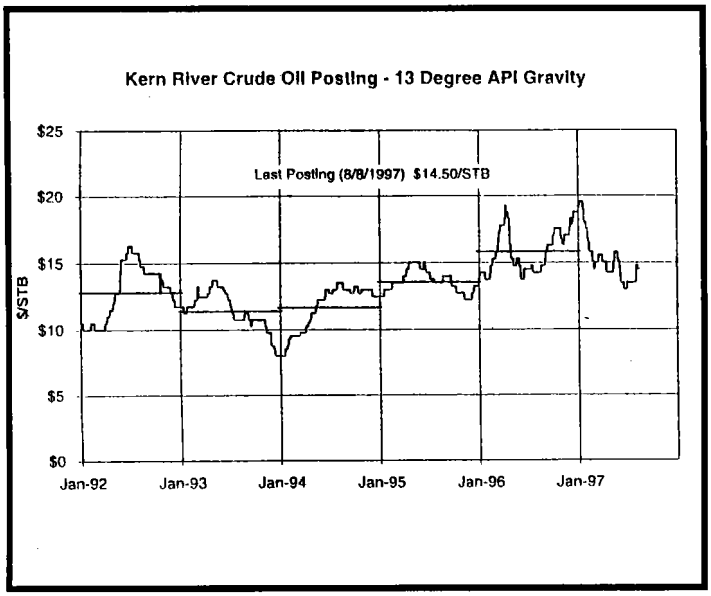

Deadline for next issue October 15, 1997

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PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section
American Association of Petroleum Geologists

NOVEMBER 1997 NO.2

A MESSAGE FROM THE PRESIDENT

The "Call for Papers" has been distributed for the 1998 annual convention to be held at the Ventura Double Tree Hotel. If you haven't received your copy and would like one, please contact a member of the convention committee or see our web site at **http://www.west.net~psaapg.** I encourage all professionals and students to think about sharing your experience, knowledge and research for the benefit of furthering the geologic profession. Abstracts are due by November 15, 1997. At that point we will start reviewing them and formalizing technical sessions. If you're like me and running a bit behind schedule, don't give up if you think you will have a hard time making the deadline, give Doug Goff, our Technical Program Chair, a call (562-694-7689) and see if you can buy a couple extra days. If we know your abstract is about to arrive, we will try to hold a spot for you.

One of the greatest things the Pacific Section does with the money we raise during events like our convention is to distribute needed funds to worthy geologic causes. 1997 has been a banner year for us, thanks to the hard working members (SJGS) of this year's convention committee. The Executive Committee recently approved the distribution of $9,000 to support organizations that are vital in educating, documenting, and extending the science of geology and the petroleum industry. The distribution includes $3,000 to set up a new Teacher Scholarship Fund. This fund will provide assistance for K - 12 teachers to attend continuing education activities involved with geology. The Dibblee Foundation will receive 2,500 to help them publish a seemingly endless list of Tom Dibblee Maps. $2,000 will be donated to the Kern County Museum for a new exhibit on the petroleum industry of California. The John Kilkenny Memorial Grant that was set up by the Pacific Section last year, and stewarded by the AAPG Foundation will receive $1,500. This grant supplies an annual cash award to a graduate student enrolled at a college or university in the Pacific Section AAPG region.

Finally, I want to encourage all students to take advantage of our membership special. If you haven't heard, students who join the Pacific Section AAPG for our low fee of $12.00 receive a complementary 1-year membership in the National AAPG, the world's largest geological society. This is a great way for students to get connected into the geologic community at an incredibly low cost. Not only do students get a copy of the PPG Newsletter, they also receive the AAPG Bulletin, Explorer, a free AAPG bookstore publication, and job search database access. So if you know any students out there who have an interest in geology, encourage them to take advantage of this special offer and help the section grow.

--- Dalton Lockman, President

Inside this issue...

AAPG STRIKE SLIP AND EXTENSIONAL BASIN FIELD SEMINAR CARRIES AN INTERNATIONAL FLAVOR

Mark Milliken

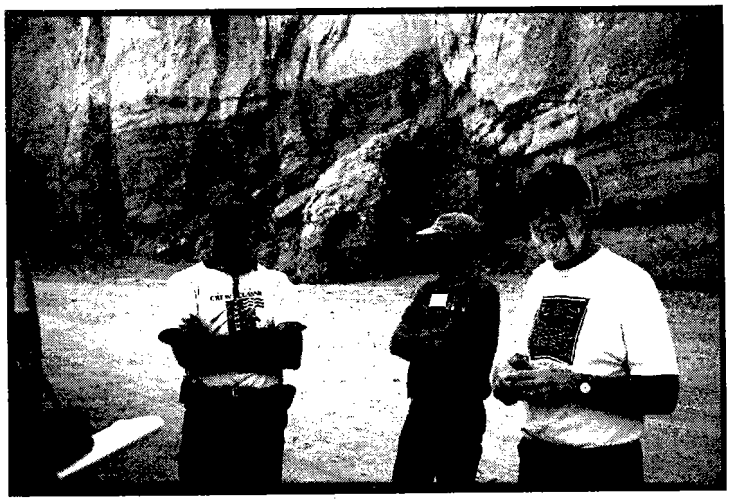
In perfect April weather, 14 petroleum geologists from all over the world took advantage of the knowledge and insights of Art Sylvester (UCSB) and Tor Nilsen on a tour of extensional basins in southern and eastern California. In addition to the U. S., countries represented included Indonesia, United Kingdom, Germany, Canada, and Argentina. Art and Tor have led this trip annually for many years, making it one of AAPG's premier field seminars.

The trip began in the Imperial Valley, where the San Andreas fault zone terminates against a series of mid-ocean ridges of the East Pacific Rise offset along transform faults in the Gulf of California. The northernmost segment of the East Pacific Rise is marked by volcanic centers and a geothermal field along the southern margin of the Salton Sea testifying to the underlying spreading center. CO_2, used primarily for dry ice, was produced here from 54 wells during 1934-1954. Gas is formed at shallow depths by low-grade metamorphism of detrital carbonate rocks carried into the basin from the Colorado River drainage basin. Mud volcanos testify to ongoing CO_2 generation.

The Mecca Hills are located on a transpressional segment of the San Andreas fault on the northeast margin of the Salton Sea. Art Sylvester originally coined the term "palm tree" structure (flower structure) at this location. Thrust faulting and associated folding results from rocks being squeezed up and out of the fault zone along segments oriented obliquely to the plate slip vector. The group risked life and limb to see firsthand the Painted Canyon thrust fault, which dips 70° in canyon bottoms and flattens upward to nearly horizontal. Are "palm tree" structures analogous to much larger and deeper structures responsible for folding in the San Joaquin Basin?

The group moved northwestward along the San Andreas fault to the Ridge Basin. After spending a day looking at measured sections and geologic maps, the group broke into "consultant" teams to solve an exploration problem posed by the "Sylvester-Nilsen Oil Company." Each team then made a formal exploration proposal to company "executives." Although the Canadian-American team had the most promising play, no winner was announced. The company went bankrupt due to the high costs of exploration consultants.

En route to Death Valley, the group paused at the famous Highway 14 road cut south of Palmdale. Art feels the folding here is orderly and related to shear coupling along the San Andreas fault. Traveling northward from Ridgecrest, the group saw the first evidence of crustal extension features while viewing the western flank of the Panamint Range. A playa crowds up against the base of the Panamints, suggesting eastward tilting of the range and basin. The first stop in Death Valley was Aguereberry Point, named after a local miner. A panoramic view is afforded of central Death Valley, and group photos were taken here . The rocks at Aguereberry Point consist of Lower Cambrian Zabriskie Quartzite that fractures very sharply. Wishing to get a closer view of the rocks, an Indonesian member tripped and fell spread-eagled onto an outcrop. Adding insult to injury, Tor's van had a flat tire on the way



Art Sylvester (L) and Tor Nilsen (R) in Split Mountain Gorge. Student in the background is Bob Young of Anadarko.

Art Sylvester discusses a mud volcano at the south end of the Salton Sea.

Group picture at Auguerberry Point overlooking Death Valley.

"Sylvester Death March" underway at Natural Bridge in Death Valley. Fan gravels perched on the turtleback surface are slightly tilted eastward.

back to the main highway. When Tor failed to arrive at Stovepipe Wells, Art dispatched a rescue party. Tor's van was found, limping along on a tiny spare tire.

Death Valley was described by Burchfiel and Stewart (1966) as a "pull-apart" basin related to extension along the Furnace Creek and Death Valley fault zones. In the 1980s, Wernicke and others (1989) proposed a revolutionary theory that had the Cottonwood and Panamint Ranges at one time on top of the Black Mountains based on rock ages. Crustal extension related to Pacific Plate movement over the past 5-6 million years has resulted in a huge "landslide" dominated by eastward-tilted blocks of the Basin and Range Province. The Cottonwood and Panamint Range blocks broke away and moved northwestward as isostatic rebound allowed older rocks of the Black Mountains to rise. Many of the Tertiary volcanic and sedimentary rocks exposed in Death Valley were deposited during this period of extension.

With an ambient temperature in the high 90s, the group embarked upon the "Sylvester Death March" at Natural Bridge across an alluvial fan to view close up the oblique-slip surface of a Black Mountains turtleback. Turtlebacks are named for their rounded shapes. Highly deformed Tertiary volcanic rocks rest in fault contact on the turtlebacks. Mega-scale fault slickensides oriented obliquely across the turtleback surfaces can be seen if the light is right. As in the Panamint Range, rocks comprising the core of the Black Mountains dip generally eastward. Alluvial fan remnants stranded high on the turtlebacks also show evidence of eastward tilting .

After eight non-stop days in the field, the group said their farewells and disbanded at the Las Vegas airport. Overall, the field seminar was highly rated by the participants, and is recommended for anyone dealing with extensional or strike-slip tectonics.

References:

Burchfiel, B. C., and Stewart, J. H., 1966, **"pull-apart" origin of the central segment of Death Valley, California**: Geological Society of America Bulletin, v. 77, p. 439-442, 4/66.

Wernicke, B. P., J. K. Snow, G. J. Axen, B. C. Burchfiel, K. V. Hodges, J. D. Walker, and P. L. Guth, 1989, **Extensional tectonics in the Basin and Range province between the Sierra Nevada and the Colorado Plateau**: International Geological Congress Field Trip Guidebook T138, American Geophysical Union, Washington D. C., 80 p.

The Pacific Section would like to thank the following members for their donations to our Contributory Funds during the 1996-97 fiscal year. Their generosity is greatly appreciated by the beneficiaries of these programs.

Bob Hacker Memorial Publication Fund	**$ 479.00**
Martin Van Couvering Fund	**$ 164.00**
Dibblee Map Foundation	**$ 718.00**
California Well Sample Repository	**$ 921.00**
John E. Kilkenny Memorial Scholarship Fund	**$ 2691.00**
Total Contributions	**$ 4973.00**

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Van Couvering Award Fund Expanded

The Martin Van Couvering Award is an annual scholarship given to Geoscience students for attending Pacific Section Conventions, field trips and short courses. The source for this scholarship is from the interest generated from the AAPG/SEPM/SEG Emergency Convention Fund, which was set up in 1972 to protect the Pacific Sections from a financially devastating convention. At the last PSAAPG executive committee meeting, the executive board voted to expand the Emergency Convention Fund from $10,000 to $30,000. The result of expanding this fund will be a significant increase in the amount of dollars available for student support.

Looking for Information on Pacific Section Publications?

You may still write to:

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Pacific Section AAPG
P.O. Box 1072
Bakersfield, CA 93302

or →

Contact Larry Knauer at Texaco in Bakersfield, CA. Larry is still the publications chairman. After eight years at Elk Hills with Bechtel, Larry has moved on to Texaco at their Kern River office. His new numbers are:

(805) 392-2471 (office)
(805) 392-2905 (fax)
knauelc@texaco.com

USGS Announces Plans to Relocate Menlo Park Office

Citing the high cost of rent in the San Francisco Bay area, Interior Secretary Babbitt has ordered the USGS to leave its western headquarters in Menlo Park, California. The Survey must vacate two privately owned buildings that house much of the Survey's seismological facilities by September 1998 when its current lease runs out. The other buildings on the 16-acre campus are federally owned, including a $40 million building dedicated just last year. Just over 800 employees are currently located at Menlo Park, down from 1,200 four years ago. Although relocation sites are speculative, many of the offices could move to Sacramento where the USGS Water Resources Division and a number of other Interior bureaus are already located. Babbitt stated that the earthquake group would not leave California. Supporters of the move cite a growing difficulty in attracting scientists to Menlo Park due to the high cost of housing but detractors fear that the move will severely damage the symbiotic relationship the USGS has had with Stanford University and UC Berkeley.

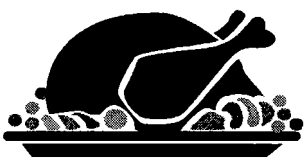
WANTED: CERTIFIED PETROLEUM GEOLOGISTS

Michael Clayton – Texaco, P.O. Box 197X, Bakersfield, CA 93308 (805) 391-4330

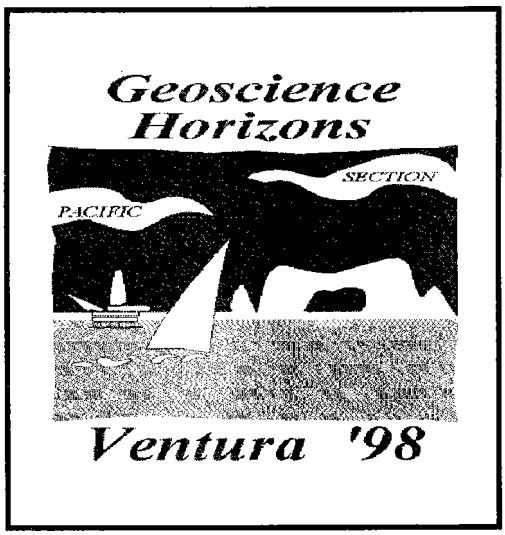
Petroleum geologists who have demonstrated capable, conscientious, and trustworthy professionalism are always in demand. While experience and capability are necessary for licensure as a State Registered Geologist, establishing yourself as a professional is another matter. The AAPG has a certification program for petroleum geologists through membership in the Division of Professional Affairs. The DPA is currently seeking qualified candidates who wish to certify their credentials through vetting by your professional peers; a process that is neither difficult nor costly.

With a strong and listened-to voice in National and State government, the DPA closely monitors and analyzes the legislation and rule-making that affect our profession. In addition, DPA takes an active role in supporting life-long continued professional education, sets high ethical standards, enforces ethical behavior and mentors geologists just starting out in their career. DPA publications keep members informed on a variety of timely issues pertaining to their professional careers.

If you have at least 8 years professional experience as a petroleum geologist, are a member of the national AAPG, and desire to be recognized and certified as a member of the Division of Professional Affairs, please contact me or any Certified Professional Geologist (as designated in the AAPG Membership Directory) for application materials.



Happy Thanksgiving



CALL FOR PAPERS

The *Coast Geological Society* invites you to the 1998 AAPG-SEPM-SEG-SPWLA Pacific Section Meeting in Ventura, California, April 29 through May 1, 1998. We are inviting papers for both general and special sessions covering a wide range of topics. The two-day technical program will consist of oral presentations and half-day poster sessions. Short courses and field trips will be held before and after the technical sessions.

The theme for this year's convention, "Geoscience Horizons", should encourage us to look forward to the application of new technologies and new ideas in geology. The convention will feature field trips to Santa Rosa Island, the Ridge Basin and other nearby areas. A symposia on new developments in the Santa Barbara Channel is being organized to take a new look at the geology and development of this area. A special session for primary and secondary educators is planned.

The convention will be held at the Doubletree Hotel, Ventura. This facility is located adjacent to San Buenaventura State Beach Park and near the Ventura Harbor shopping district. Additional information about the convention, and an on-line Call For Papers can be found on our website at http://www.west.net/ ~ psaapg

You are invited to submit abstracts for presentations on the following topics:

- Continuing Developments in Offshore California
- San Joaquin and Sacramento Basin Studies
- Marine Geology of the Californias
- West Coast Tectonics, Sedimentation and Stratigraphy
- Geology of the Gualala area, Northern California
- Reservoir Geology and Development Applications
- Horizontal Drilling
- Environmental Geology / Hydrogeology
- Earthquake Hazard Assessment and Prediction
- Sequence Stratigraphy in Active Tectonic Settings
- Utilizing New Technologies in Exploration and Development
- Computer Applications / Geologic Modeling / Visualization
- General presentations in Geology, Geophysics and Petrophysics

Additional suggestions are welcome for theme sessions, short courses and field trips.

❖ General Chair: Jon Schwalbach, Exxon Co., USA , P.O. Box 5025, Thousand Oaks, CA 91359, (805) 494-2249 ❖
❖ Vice Chair: Dalton Lockman, Exxon Co., USA P.O. Box 5025, Thousand Oaks, CA 91359, (805) 494-2205 ❖
❖ Technical Program Chair: Douglas Goff, CPTC, P.O. Box 446, La Habra, CA 90633, (562) 694-7689 ❖

Memorial to *John T. (Jack) Isberg*

1915 – 1997

Jack Isberg was born in Laramie, Wyoming where he spent his childhood years and where he graduated from the University of Wyoming, earning a Masters Degree in Geology in 1937. The following year he married his college sweetheart, Margaret "Peg" Lee.

Jack had an outstanding career as a Petroleum Geologist, first, (1937 - 1945) with Ohio Oil Co. in the Rocky Mts. and California. Then, (1945 - 1973) with Superior Oil Co. in Bakersfield, Los Angeles, Denver and Houston, being involved in exploration undertakings in almost every "hot spot" on the earth during this time period. Jack returned to California in Sept. 1973 and until October 1979 consulted and was affiliated with C.F. Braun and McFarland Energy. Jack became a member of the AAPG and Pacific Section in 1938. He was president of the Pacific Section in 1959 and was selected to be an honorary life member in 1985.

On Sept. 28, 1997, Jack passed away at his home in Luguna Hills due to recurrence of cancer. He is survived by Margaret, his wife of 59 years, three daughters, one son, six grandchildren and four great grandchildren, each of whom can be and is, justifiably proud of one of the outstanding petroleum Geologists and human beings of his generation.

Peter H. Gardett, Luguna Beach

GEOLOGY BOARD STEPS UP ENFORCEMENT ACTIVITIES

SACRAMENTO – California's Board of Registration for Geologists and Geophysicists is increasing its enforcement and outreach activities by hiring a Certified Engineering Geologist to proactively monitor the geology and geophysics professions. The Board realized that due to the highly precise and technical nature of these professions, the current consumer complaint process is not adequately bringing violations of the law to its attention. It is necessary to perform additional public awareness and technical information programs and to conduct proactive investigations and monitoring. This will include issuing citations and fines and is aimed at increasing the protection of the public from both licensed and unlicensed violators.

Donald L. Fife of Tustin will fill this newly created position. Fife, who will be headquartered in the Board's Sacramento office, earned Bachelor and Master degrees of Science in Paleontology-Stratigraphy and Geology from San Diego State University. He holds California Registered Geologist and Certified Engineering Geologist licenses, as well as a California Lifetime Earth Science Teaching Credential. Fife has authored several dozen published scientific and technical papers, performed government research, and taught geology-related subjects in various universities, including San Diego State University, California State University, Fullerton, and others.

Complaints or questions regarding geologists, geophysicists, engineering geologists, or hydrogeologists should be directed to the Board of Registration for Geologists and Geophysicists, 2535 Capitol Oaks Drive, Suite 300A, Sacramento, California 95833, (916) 263-2113.

PTTC West Coast Resource Center and
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Present:

"TURBIDITE RESERVOIRS IN CALIFORNIA"

A Short Course and Field Trip

November 24, 1997
Double Tree Inn, Ventura, California

The course is highly recommended for Reservoir Engineers, Asset Managers and Geologists

Short course instructor: **Prof. Roger Slatt**, Colorado School of Mines

Field Trip Leaders: **Tom Norton and George Otott**, THUMS Long Beach Company

Cosponsored by: *U.S. Department of Energy; Department of Oil Properties, City of Long Beach; Tidelands Oil Production Company; Pacific Operators Offshore, Inc.; California Energy Commission; California State Lands Commission; Minerals Management Service, Department of Interior; California Independent Petroleum Association; Conservation Committee of California Oil and Gas Producers; California Division of Oil, Gas & Geothermal Resources; Independent Oil Producers Agency; Western States Petroleum Association; SPE LA Basin Section; Dynamic Graphics, Inc.*

Sunday November 23, 1997 (Optional)

7:30 p.m.	**Computer Aided 3-D Geologic Modeling Demo,** Dynamic Graphics, Inc.

Monday November 24, 1997

8:00 a.m.	*Check-In*
8:30 a.m.	**Descriptive Architectural Elements in Subsurface and Outcrop** **Mutti** **Reading and Richards** **Mahaffie** **Channel, Lobes (sheets) and Levees**
9:30 a.m.	**Transport and Depositional Processes and Concepts** **Lowe** **Mutti** **Shanmugam and Moiola and Rebuttals** **Kneller**
10:30 a.m.	*Break*
11:00 a.m.	**Recognition Criteria for Architectural Elements in Subsurface** **Convention Well Logs** **Seismic** **Borehole Imaging and Core**
12:00 p.m.	**Sedimentary Controls on Reservoir Quality and Architecture** **General Permeability versus Facies Relationships** **Continuity, Discontinuity and Connectivity**
1:00 p.m.	*Lunch*
2:00 p.m.	**Field Trip to San Miguelito Oil Field to See Turbidite Exposures**
6:00 p.m.	**Field Trip Ends**

Registration fee is $50, which includes refreshments, lunch, bus transportation and published notes.

Space is limited: Deadline to register is *November 10, 1997*

To reserve a place, call The PTTC West Coast Resource Center at (213) 740-8076 and leave your name and telephone number.

Please remit your checks to: Petroleum Engineering Program
Department of Chemical Engineering
University of Southern California
Los Angeles, California 90089-1211

BILL RINTOUL

STORY OF AN ELK HILLS ROUGHNECK

From an office in a tall downtown building that offered a view of San Francisco Bay and the Bay Bridge, Gwin Follis on a sunny October afternoon in 1978 reminisced about his first job in the California oil fields.

It had been 59 years before when Follis, then a 17-year old youth from the Bay area, had gone to work for Standard Oil Co. of California, now Chevron, as a roughneck in the Elk Hills field.

Standard had discovered the field in January 1919, bringing in the discovery well for 200 barrels a day, which given the times was hardly spectacular but had created interest because it proved up a new oil field.

By that summer when Follis reported for work, the oil company had completed several more wells, including one that flowed 850 barrels a day. If there had been any doubt about the field's capability, it was settled that same summer. In late July, the Hay No. 7 blew in with a thunderous roar that could be heard clearly in Taft, nine miles away.

"I didn't work on that well," Follis said that October afternoon in San Francisco. "We were drilling on the Tupman property." He recalled the spectacle created when the well, within an hour after blowing in, caught fire, burning in a torch that at night could be seen from fifty miles away. It would take 26 days and fearless and innovative efforts on the part of Ford Alexander, a Taft dynamiter, and his crew before the well was tamed.

Along with Hay No. 7, Follis had vivid memories of the ride from Elk Hills back to the bunkhouse in Taft when the drilling crew's tour ended. The ride out on his motorcycle was largely downhill. Coming back was another matter.

The Taft-Bakersfield highway then crossed 36 Hill on the outskirts of Taft instead of going around the hill as it does now. The slope was gradual north bound to Elk Hills. It was steep returning to Taft.

"It was hard to get the motorcycle up the hill," Follis said. "I had to wheel it up sometimes."

Of the Elk Hills drilling work, Follis said, "We were using rotaries. They were new and looked on with considerable suspicion. We set up combination rigs—rotary with a cable tool bullwheel. We would spud with rotary and drill to 100 to 200 feet above the pay zone. Cable tools would finish the well. The theory was that mud from rotary would plug the sand." The 12-hour workday had just gone out. "We worked a 7-day week, 8-hour shift."

From those days at Elk Hills, Gwin Follis, a native San Franciscan, moved on to college. He graduated from Princeton in 1924 with a degree in physics and geology and went to work for Standard Oil at the company's Richmond refinery.

By the time he retired from the company in 1966, he had risen through the ranks to become president and a director in 1945, vice chairman in 1948 and chairman in 1950. At the time of his retirement, Standard had become the ninth-largest U.S. corporation with $3 billion in sales.

It was the major role that Follis played in those years of tremendous growth that brought him to that afternoon in October 1978 and the interview that relived his days as a roughneck at Elk Hills. Standard of California was about to celebrate its 100th year as an oil producer in California. Follis' recollections were to be part of a commemorative book.

The years at the Richmond refinery stood him in good stead when Standard found oil on Bahrain Island in 1932. "We couldn't find a place farther away" Follis said. "It was 180 degrees around the world." There was, of course, no refining capability. Follis managed to buy a refinery in Germany that helped start Bahrain on its productive way.

From Bahrain the search led to Saudi Arabia. When Standard was on its seventh well in the unsuccessful campaign, the order came from San Francisco "to give up and get out." "They kept on drilling" Follis said. The Damman No. 7 was completed in March 1938, opening the door to the world's largest oil reserves.

Of Standard/Chevron's success, Follis said the most important thing a company has is the relationship with the employees. "The basic relation with the employees goes all the way back to the Rockefellers. We have enjoyed through the years a remarkable cohesion in terms of loyalty and general relationship with personnel."

Gwin Follis died of cancer May 8 at his home in San Francisco. He was 93 years old.

NEWS FROM THE AFFILIATED GEOLOGICAL SOCIETIES

Alaska

Upcoming Luncheon Calendar

Date:	November 20, 1997
Title:	Alaskan Geologic Sur vey Program
Speaker:	Milton Wiltse, State Geologist, AGS
Date:	December 18, 1997 To Be Announced
Date:	January 15, 1998
Title:	Petroleum Filling His tory of Prudhoe Bay, Kuparuk, and West Sak fields
Speaker:	Dallam Masterson, ARCO

Alaska Geological Society Board

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Alaska Geological Society
P.O. Box 101288
Anchorage, AK 99510
Contact: Bob Swenson
(907) 265-6808

Coast

Tuesday, November 18, 1997, Matt Glombebek, Ph.D., Jet Propulsion Laboratory, Caltech, Pasadena, California, will be speaking on *"Mars Pathfinder Mission Scientific Results".*

AMERICAN LEGION HALL
83 S. PALM STREET,VENTURA, CA

NORTHBOUND Highway 101 – Take California Street Exit, West (Left) on Thompson Blvd, North (Right) on Palm.

SOUTHBOUND Highway 101 – Take Ventura Ave. Exit, East (Right) on Thompson Blvd., North (Left) on Palm.

RESERVATIONS ARE REQUIRED TO GUARANTEE DINNER!!

Social Hour – 6:00 p.m.
Dinner – 7:00 p.m.
$12 – With Reservation
$17 – Without Reservation
$ 5 – For Students and K-12 Teachers

Reservations: Please phone the receptionist at : APPLIED ENVIRONMENTAL TECHNOLOGIES 650-1400 by 10 a.m. on the Friday Before the meeting date with your menu selection (Chicken or Beef).

Coastal Geological Society
P.O. Box 3055
Ventura, CA 93006
Contact: Joe Scaaf
(805) 650-1400

Los Angeles

Los Angeles Geological Society
c/o Don Clarke
Dept. of Oil Properties
211 E. Ocean Blvd. Ste. 500
Long Beach, CA 90802
(562) 570-3915

Northern California

Upcoming Meetings:

Thursday, November 20, 1997

Speaker:Tim Rose, Lawrence Livermore National Labora tory.
Title: Isotope Hydrogeology of Fracture Flow Systems in an Active Volcanic Region, Southern Cascade Range.

Concord Holiday Inn
6:30 p.m. Social
7:00 p.m. Talk
$ 5.00 per person

The December meeting and speaker to be announced.

Northern California
Geological Society
9 Bramblewood Court
Danville, CA 94506-1130
Contact: Dan Day
(510) 294-7530

Northwest

Northwest Energy Association
P.O. Box 6679
Portland, OR 97228-6679
Contact: William Prehm
(503) 557-8432

Sacramento

Owen Kittredge of Delta Environmental Consultants, Inc. spoke on "Winter Backpacking in the Grand Canyon" on November 5th.

Noon luncheon meetings are held at the HUNGRY HUNTER RESTAURANT, 450 Bercut Drive, Sacramento. For luncheon information and reservations, please contact Jennifer at Delta Environmental Consultants Inc. at (916) 638-2085.

Sacramento Petroleum Association
P.O. Box 254443
Sacramento, CA 95865-4443
Contact: Owen Kittredge
(916) 638-2085

San Joaquin

This year's incoming officers for the SJGS are:

Tony Reid, President
Mike Clark, president-elect
Allen Waggoner, Vice President
Jaime Roig, Treasurer
Dan Steward, Secretary

The annual SJGS golf tournament and barbecue was held September 12 in Bakersfield. Over 130 people enjoyed a beautiful late summer day and evening, and the higher-than-usual attendance indicates the boom days of geology may be returning.

Coordinating the event planning were Chris Presmyk, Vikki Presmyk, Dan Steward and Dale Julander. Dan Fargo of Core Laboratories and the CSUB Geology Club served another excellent barbecue.

Numerous community sponsors provided raffle prizes, and the following corporate sponsors provided generous contributions: Texaco, Berry Petroleum, Aera Energy, ARCO, Landmark, Halliburton, Epoch Well Logging, System Technology Associates, Schlumberger, Western Geophysical, WZI, Goode Core Analysis, Res Tech/Delano Petrophysical, Petrolog, Core Laboratories, Horizon Well Logging, Bechtel, San Joaquin Energy Consultants, and Chevron USA.

I am grateful for the efforts of the volunteers and sponsors in making this year's events successful.

Mark your calendars for upcoming SJGS monthly meetings:

Speaker for November 11 is Jim Davis of ARCO, who will discuss the history and engineering of the Long Beach Unit.

Bill Rintoul will be our speaker on December 9 and will discuss the changes seen in the petroleum industry in California.

Tony Reid, President - SJGS

Dinner Meetings are held the second Tuesday of each month (except summer months) at the American Legion Hall , 2020 H street, Bakersfield. The social hour starts at 6:00 p.m., dinner is served at 7:00 p.m. and the talk begins at 8:00 p.m.

San Joaquin Geological Society
P.O. Box 1056
Bakersfield, CA 93302
Contact: Tony Reid
(805) 763-6323

Application of Geophysics to Environmental and Engineering Problems Symposium

The Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP) will be held March 22-26, 1998 at the Palmer House Hilton Hotel, Chicago Illinois. SAGEEP is the national meeting of the Environmental and Engineering Geophysical Society.

SAGEEP 98 will present three days of technical sessions and poster presentations in geophysical applications covering infrastructure (transportation), engineering hazards, environmental assessments, groundwater, remedial monitoring, surface water (wetlands) and expedited site characterization. Technical applications will include borehole geophysics, very shallow relection seismology, induced polarization, geostatistics and new methods of interpretation and imaging.

Additional focal points at this year's symposium include four short courses: Introduction to Near-Surface Geophysics; Nondestructive Testing; Three Dimensional GPR and Applications and Pitfalls of GPS Surveys.

For Additional info visit: www.sageep.com or contact Jayne Sturges at (303) 771-2000.

Washington State Department of Natural Resources

NOW ACCEPTING APPLICATIONS

For the 1998

OIL AND GAS LEASE AUCTION

Oil and Gas Potential in Washington State

Much of Washington State is underlain by folded and faulted Tertiary siliciclastic rocks varying in thickness from about 10,000 to 30,000 feet. This stratigraphic section includes sandstones that range from thick low-porosity sections similar to those associated with deep basin-centered gas accumulations to the "Ocean City sand", which is 700 feet thick, has 30 percent porosity, and permeability in excess of a darcy. Nearly 200 wells deeper than 4,000 feet have penetrated the area with the prospective stratigraphy, which is about half the size of Louisiana. While no wells currently produce, a stripper oil field and two low-volume gas fields have been developed statewide. Geochemical studies demonstrate wide-spread gas-generative source rocks and underplated oil-prone strata near the coast. In eastern Washington, the structure is complex, but includes untested regional anticlinoriums such as Horse Heaven Hills, which is 120 miles in length.

About the Auction

The 1998 sealed bid oil and gas lease auction is scheduled for Thursday, February 12, 1998, in Olympia, Washington. The current oil and gas lease has been revised and an option for a natural gas storage lease has been added. We invite interested parties to review and comment on these leases. Comments received prior to November 18, 1997 will be considered in the final construction of the leases. Please contact Ellis Vonheeder, as indicated below, to receive a draft copy of these documents.

The successful bidder will be determined by the highest one time bonus bid offered for each parcel. The minimum per acre bonus bid will be $2.00/acre for the oil and gas lease and $3.00/acre for the oil and gas lease with the natural gas storage option. Inclusion of the option for gas storage with the oil and gas lease will be determined by the DNR after consideration of the choice indicated on the application to lease.

Applications to nominate parcels for the auction must be received at the address indicated below by November 18, 1997 to guarantee inclusion in this auction. Applications submitted after that date may be considered only if sufficient time exists to complete the necessary field work and environmental review for the nominated parcels.

Each application to lease must be accompanied by a $25 application fee and a bid deposit of $150 per parcel, regardless of size. The bid deposit of the successful bidder will be credited against the first year's annual rental ($2.00/acre), and refunded if the applicant is not the successful bidder. The bid deposit will be forfeited if the successful bidder fails to execute the lease. An applicant is considered the successful bidder if there are no competing bids.

More Information

Ellis Vonheeder or Nancy Joseph
Department of Natural Resources-RPAM
P.O. Box 47014
Olympia, WA 98504-7014

Phone (360) 902-1600
Fax (360) 902-1789

Elk Hills Geologists Celebrate - Mark Wilson Turns 50!

Past President Mark Wilson (Bechtel), celebrates his 50th birthday in Bakersfield.

"I'm keeping certain other photos until Mark pays up."
- A Friend

TROPICAL FISH SWIM NORTH AS EL NINO WARMS OCEAN WATERS

SAN FRANCISCO - An exotic mix of tropical fish – from mahi-mahi to swordfish and albacore tuna – is swimming in the waters off the Golden Gate Bridge, thanks to El Nino. Marlin, sardines, and other tropical fishes have also made their way north as El Nino, a massive influx of warm weather from the equatorial Pacific, heats the waters off California. The ocean off Northern California – normally as cold as 50 degrees this time of year – is now a tepid 67 degrees.

"The surface water temperature off the Farallones is the warmest we've seen since we began keeping records in 1958," said Michelle Hester, a biologist with the Point Reyes Bird Observatory, which researches birds and marine mammals at the Farallon Islands. And while the weather change hints of what El Ninos can bring – devastating floods, storms and drought – mariner biologists and anglers are excited by the chance to see fish usually limited to equatorial waters.

Scientists say the tropical fish sightings are probably just a hint of what's to come. At the peak of the last major El Nino in 1982 and 1983, big schools of bonita – a small near-shore tuna seldom found north of Point Conception 0 swarmed into San Francisco Bay. "It's an incredibly exciting period, " said Peter Pyle, a Point Reyes Bird Observatory biologist. "We think we're going to learn a lot from this."

The Dibblee Foundation's publication program needs your year-end support:
An update from the editor

The Dibblee Foundation has embarked on an ambitious program to extend Tom Dibblee's mosaic of full-color geologic maps, mostly into the eastern Los Angeles basin region, and even offshore! Overall, nineteen (19) 7.5-minute quadrangles are included, to be printed mostly as double maps. Tom Dibblee did most of his fieldwork in the 1930's to 1950's, before major urbanization of many of these areas.

With El Nino permitting, we hope to finish up our field work and map preparations, and to be in print by the April 1998 AAPG Pacific Section meeting in Ventura.

The following 4 maps (listed here from northwest to southeast) will go to press first:

Santa Rosa Island (4 quads)
Mt. Wilson/Azusa
El Monte/Baldwin Park
Palos Verdes Peninsula (3 quads)

Those will be followed later in 1998-1999 by:

Venice/Inglewood
Whittier/La Habra
Yorba Linda
Prado Dam
Glendora/Mt. Baldy
San Dimas/Ontario

Proceeds from the sale of Mapelopes go directly towards the production of additional geologic maps by Tom Dibblee.

This ambitious program will really strap our limited financial resources! Please consider making a year's end corporate, business, or individual contribution to our non-profit, public-benefit, educational Dibblee Geological Foundation. Remember that your contribution is fully tax-deductible to you or your company, and is of major assistance to us. Our Federal tax-exempt ID number is **EIN 77-0012344.**

Contributors of $500 or more (corporate $1000) will be acknowledged on the maps(s) of their choice. Please send your support to the Dibblee Foundation, P.O. Box 60560, Santa Barbara, CA 93160, or call (805) 968-0481. A special index map is available from the address above. Visit our Web site at: **http://dibblee.geol.ucsb.edu.**

Announcing

You've seen those colorful, original, innovative **"Mapelopes"** produced only by the Dibblee Geological Foundation? They're now available by mail!

They make great Christmas presents, or use for spectacular reports/presentations!

These unique envelopes are made mostly from printer's test runs of actual Dibblee geological map sheets. We save these and have them converted into the 3 most popular envelope sizes, then have them randomized and packaged. No two packets are alike!

So here's the deal:
9"x12" document size: $10 per packet of 15
4"x9" business size: $5 per packet of 15
4"x6" personal size: $5 per packet of 20

Taxes are included, but please add $1.00 per packet for shipping and handling costs.

These Mapelopes are available from:
Helmut Ehrenspeck,
Dibblee Foundation,
7259 Del Norte Dr.,
Goleta, CA 93117
Phone or fax (805) 968-0481

Alaska National Wildlife Refuge Facts:

- Within the vast 19.3-million acre refuge, only the ANWR coastal plain, or 8 percent of the total area, is being considered for oil and gas leasing.
- Less than 1 percent of the coastal plain would be affected by development.
- U.S. Fish & Wildlife Service confirms development can be done in an environmentally safe manner.
- The environmental record of the oil industry at Prudhoe Bay shows development can take place here without damaging the environment.
- Experience and technological improvements made in North Slope oil fields means that there will be a much smaller footprint on the coastal plain than in the Prudhoe Bay fields.
- At Prudhoe Bay, the caribou population has increased six-fold since oil development began here; air quality is excellent and the area remains as one of the largest waterfowl nesting areas in the world.
- The Department of Interior estimates that there is at least a 19 percent chance - and perhaps as high as a 46 percent chance - of finding a commercial oil field on the ANWR coastal plain.
- There is a 95 percent probability of finding at least 4.8 billion barrels of oil here.
- The federal government estimates that the area could contain as much as 9.2 billion barrels of recoverable oil, making it the second largest field in North America. Prudhoe Bay, the largest oil strike in this part of the world, contained more than 10 billion barrels of recoverable oil.

... Testing

The federal government has permitted limited testing on the refuge, allowing Chevron to drill an exploratory oil well here in 1986. The results of that exploration have never been made public, and are considered proprietary. It remains one of the most tightly-guarded secrets within the oil industry.

No one knows precisely how large the oil reservoirs are underneath this area's coastal plain, but various estimates peg recoverable reserves at 600 million to 9.2 billion barrels.

... The Bottom Line

Alaska citizen's group Arctic Power, citing government statistics, says that opening up ANWR to oil drilling could create at least 250,000 jobs. Private sector studies place the total at 735,000 jobs. The Department of Interior has stated that the net national economic benefits from ANWR development could reach $325 billion.

"Senator Sets Wording Straight on Coastal Plain" - Frank H. Murkowski, U.S. Senator, Alaska

(as appeared in the June 20, 1995 issue of Anchorage Daily News)

"What's in a name? A great deal when a name can help convey the intent of Congress - especially when that intent has been deliberately blurred by environmentalists over the years.

In response to your editorial (June 15), the Alaska delegation has not tried to rename the Arctic National Wildlife Refuge. Its 8.5 million acres of wilderness and 9 million acres of refuge are alive and well, and off-limits to most any form of development - and that's in perpetuity.

We have this year, however, started to refer to the tiny sliver of the Arctic coastal plain, the so-called 1.5-million-acre Section "1002" area, as the likely site of Alaska's Arctic oil reserves. As you correctly observed, that is the area Congress specifically set aside in 1980 for a study to make sure it could be developed safely without harming the wildlife of the area.

By referring to the "1002 area" as a likely source of oil, rather than a wildlife refuge, we are simply trying to remind people that Congress set that area aside in the Alaska lands act because of its enormous oil potential - it being the most likely spot left for a major oil find in North America.

Many Americans mistakenly think the coastal plain was set aside for wildlife protection in 1980. It wasn't. It simply wasn't opened to oil development until the environmental studies were completed - to guarantee that oil leasing could be done safely. They since have been, and it is clear we can properly open the refuge - likely only disturbing 12,500 acres by using modern technology - without harming the environment.

You are right that this is an emotionally intense debate, but use of the proper terminology can help to cool some of the rhetoric and hopefully help Alaskans finally win support for opening of the plain to environmentally sensitive exploration and development."

Comments from Alaska Governor Tony Knowles

Opening the Arctic National Wildlife Refuge for responsible drilling is vital to the economic well-being of Alaska and the nation. Alaska has always been resource-dependent. We have the best cold-weather oil drilling and recovery technology in the world.

Alaskans understand better than anyone the importance of treating this land as our true permanent fund, paying dividends from generation to generation. We also do not fear harvesting or extracting the resources found within.

This is the attitude Alaska brings to the Arctic National Wildlife Refuge. There is no better time than now to open the refuge to oil production and to do it right.

Deadline for the next issue is: December 15, 1997

NEWSLETTER of the Pacific Section - American Association of Petroleum Geologists is published bi-monthly by the Pacific Section. Material for publication, requests for previous copies, and communications regarding advertising costs should be addressed to the editor - **ALLEN BRITTON, Core Laboratories, Inc., 3430 Unicorn Road, Bakersfield, CA 93308.**
E-mail: corebak@ix.netcom.com

CHANGE OF ADDRESS, subscription and membership inquiries should be directed to: **MEMBERSHIP CHAIRMAN, PACIFIC SECTION AAPG, P.O. Box 1072, Bakersfield, CA 93302.**

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