



Pacific Petroleum Geology



NEWSLETTER

Pacific Section • American Association of Petroleum Geologists

November & December 2017



2018 PSAAPG-PSSEPM-PCSSEG Annual Meeting
Marriott Hotel, Bakersfield, CA
April 22-25, 2018

THANK-YOU

California Resources Corporation.

For your continued support of local students.
Your sponsorship funded many student dinners
at SJGS scientific talks in 2016-2017.



PAYZONE INC.

Geological, Geophysical, and Petrophysical Consulting Services for the Petroleum Industry 661-387-1715

- Accurate, consistent fieldwide reservoir properties for modeling, OIP, and improved heat management in thermal projects
- Old E-Log interpretation

- Image log interpretation and integration with petrophysical analysis
- 2D/3D seismic interpretation, expertise in old 2D data
- "Mystery logs" and other difficult log problems

Our petrophysical models for siliceous shales and California sands are based on over 30 years of experience with these rocks, including core, log, and lithology data from every basin in the state

Deborah Olson, President
dmolson@payzoneinc.com
661-747-0375

Have a log question? Give us a call!

www.payzoneinc.com

Tom Howard, Image Analyst
tomh@payzoneinc.com
832-407-2862

ROCK SOLID EXPERIENCE



Core Lab
RESERVOIR OPTIMIZATION

www.corelab.com
661-325-5657

© 2013 Core Laboratories.
All rights reserved.

2017-2018 Officers

President Mike Nelson
805-535-2058
mnelson@dcorllc.com
president@psaapg.org

President-Elect Richard Behl
562-985-5850
Richard.Behl@csulb.edu
president-elect@psaapg.org

Vice President Mike Clark
661-378-8134
rocksniffer@aol.com
vicepresident@psaapg.org

Secretary Timothy Gross
562-624-3581
Timothy.Gross@crc.com
secretary@psaapg.org

Treasurer 2017-2018 Simmie Chehal
661- 665-5738
SKChehal@aeraenergy.com
treasurer@psaapg.org

Treasurer Elect 2017-2018 Lisa A. Alpert
661- 665-5557
laalpert@aeraenergy.com
treasurer@psaapg.org

Past President Robert Horton
661-599-7380
rhorton@csulb.edu

Editor-in-Chief 2017-2018 Vaughn G. Thompson
661-633-4748
vaughn.thompson@crc.com
editor@psaapg.org

Staff

Web Master Taylor Carrasco
562-624-3259
Taylor.Carrasco@crc.com

Membership Chair Greg Thompson
661-364-3052
greg.thompsn@gmail.com

Publications Chair Larry Knauer
661-205-4463
laknauer@aol.com

Advisory Council Representative 2015-2018 Tony Reid
661-412-5467
Tony.Reid@crc.com

5	President's Message •	<i>Mike Nelson</i>
6	In Memoriam •	<i>George John Yurkas</i>
7	In Memoriam •	<i>Russ Robinson</i>
8	Special Events •	<i>PSAAPG Student Expo</i>
9-12	Member Article •	<i>Stephen P. Mulqueen</i>
16-18	Member Society News •	

COVER PHOTO: This photo depicts towering outcrops of the Point of Rocks Sandstone at the Carneros Rocks locality along the Westside of the San Joaquin basin. This locality lies along the route of El Camino Viejo, which was a cart/wagon trail that connected Los Angeles to missions in the San Francisco Bay Area as far back as 1780.

- CONTACT THE EDITOR at editor@PSAAPG.org
- Images (graphics, photos, and scans) must be at least 300 dpi resolution. Text should be at least 600 dpi.
- Scanned photos, illustrations (line art) or logos should preferably be submitted as a .tif, .gif, or .bmp; jpeg is OK.

Advertising Rates

<i>Members</i>	<i>Single Issue</i>	<i>Year (6 issues)</i>
<i>Full Page</i>	\$200.00	\$800.00
<i>Half Page</i>	\$125.00	\$525.00
<i>Quarter Page</i>	\$75.00	\$325.00
<i>Business Card</i>		\$125.00

2017 Advertisements reduced price by 50%
due to drastic drop in oil prices

Societies Free Advertising:

Convention: Unlimited Space in PSAAPG Newsletter
Societies: 1/4 Page in AAPG Explorer

2018 PSAAPG-PSSEPM-PCSSEG Annual Meeting
Marriott Hotel, Bakersfield, CA



EMBRACING GEOLOGIC FUNDAMENTALS- FUELING YOUR PASSION

CALL FOR PAPERS

General Themes:

- ✓ California Geological Breakthroughs: Past, Present, and Future
- ✓ Pacific Exploration: Mature Basins and Prolific Reservoirs
- ✓ Sedimentology and Stratigraphy: From Lacustrine to Deep-water Reservoirs
- ✓ Structure and Tectonics: Micro-fractures to Plate Boundary Faults
- ✓ Petrophysics and Geophysics: From Borehole to Basin
- ✓ Geology and Data: Leveraging old data, new data, smart data, and big data
- ✓ Geologic Insights Learned from Regulatory Project Collaborations
- ✓ Sacramento Basin Exploration and Development

Additional Themes will be considered based on submissions!

(250-word abstract limit)

SUBMISSION DEADLINE:

February 1, 2018

For additional information contact:

Plamen Ganev

PSAAPG Technical Program Chair

(661) 665-5459

pnganev@aeraenergy.com

www.psaapg2018.org

Dear Pacific Section AAPG Members,

The 2018 PSAAPG Convention will be held next April 22-25 in Bakersfield. Plan to attend so you can get an update on the latest work and activity in petroleum geology on the West Coast and in Alaska. There is no better opportunity to see current research in the geosciences and hear about recent advances in petroleum exploration and development. The annual convention always renews my enthusiasm for this profession and my appreciation for the great people who work in it. We are blessed to have the opportunity to work in a vital and challenging industry. We get paid to do something we love!

Five years into my career as a petroleum geologist with Union Oil Company in Ventura, I was assigned to the development of the only offshore gas field in coastal California – the Pitas Point Field in the Santa Barbara Channel. It is quite an anomaly – a dry gas field in the deepest part of the basin, surrounded by oil fields. It was a great money maker in the 1980s because of an excellent contract price with the gas company. After the oil crash of 1985, it became one of the primary revenue sources for the company in its California operations. Geologically, it was a large east-west-trending isolated anticline in the Santa Barbara Channel basin center. Exploratory drilling had found stacked gas sands in a 6000-foot vertical section of Pliocene Pico Formation turbidite sands below 5600 feet VD. Above this depth, another 3000 feet of Pico sands were present but wet on electric logs. Anticlinal closure was present in this shallower section as well as deeper, but gas pay on logs was absent above 5600 feet. We noticed in looking at the electric logs was that the gas columns in each successively shallower sand became progressively thinner. The gas fill-up disappeared at 5600 feet but the sands did not. The 2D seismic showed significant gas sag on the structure and this obscured the crestal areas of the anticline at all levels on the seismic. It was assumed that the section above 5600 feet VD was wet.

Development drilling of the field began in 1981 from Platform Habitat. In the process of building cross sections through each development well it became apparent that the axial plane of the anticline had a subtle southward dip. This meant that the crest of the anticline shifted gradually northward moving up-section. Building more north-south cross sections suggested that the Pico sands above 5600 feet had never been penetrated in a crestal position. The implication was that gas sands could be found above 5600 feet by drilling further north to a crestal position. A test well was drilled in 1985 to the north of Platform Habitat and encountered gas-filled sands in the shallow section. These new gas zones ended up being a significant addition to the company reserves over the next few years.

Subtle clues had pointed to an alternate explanation for the steadily shrinking gas columns on well logs moving up-section. A vertical well drilled on the hading anticlinal axis was only in a crestal position for a limited interval of the drilled section;

this section showed gas pay on the logs. But the upper part of the well-bore was off-crest on the flank of structure because of the southward dip of the axial plane. This section was wet on the well logs but later found to be gas-bearing in a crestal position.

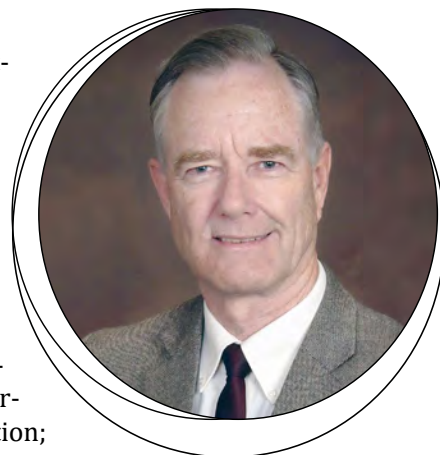
This shows the value of multiple working hypotheses to explain the typically limited dataset available in subsurface geologic work. The multiple hypothesis approach was championed by the great American geologist T. C. Chamberlain who wrote a classic paper in 1890 called "The Method of Multiple Working Hypotheses." It is still worth reading.

You have probably noticed that our industry receives little positive media coverage in California (is that an understatement?). One way to counter this is through community volunteerism. There are many service organizations that offer opportunities for involvement, like Rotary, Kiwanis, Optimists, and Lions. Other organizations target support and assistance to specific groups, like Boys & Girls Clubs, Habitat for Humanity, and Scouts. Churches offer opportunities for service in various ministries. Coaching sports teams for youth or playing in adult leagues are effective ways to become involved. The idea is to put a human face on the oil industry in settings outside the oil industry. The upstream part of our business tends to be isolated from public contact so few people in California know someone in the oil field. The more of us that can connect with the public at the local level through service, the more the public will see us positively. "All politics is local," as Speaker of the House Tip O'Neil used to say. People form their opinions first based on who they know personally.

Best wishes to all of you this Christmas and in the New Year!

Mike Nelson

PSAAPG President, 2017-2018



George John Yurkas

October 11, 1930 - September 26, 2017

This good man with his quiet sense of humor was greatly loved by his family and friends. He worked his way through Indiana University as a pipe fitter at U.S. Steel, Gary, Indiana, in order to get his Master's degree in geology from Indiana University. He was in the Army during the Korean War.

An avid philatelist since age 14, he corresponded with stamp collectors around the world. George loved browsing through thrift shops for his beloved books and had a good time working at the book sales for the Friends of the Library. He was a collector of all things that had to do with Charles Dickens, which began his life-long friendship with Brits Herbie and Betty, Joanna and Brian, and adopted grandson Dominic. He is survived by his wife, Carol; his sister, Helen Benich; nephews, Fred and John Benich and their families; and his cherished children, Michael Yurkas, his wife Carol Ruth; Susan and her husband Titus Gay; and those treasured grandchildren, Alexander and Jennifer Gay and Brian and Steven Yurkas.



Published in Bakersfield Californian from Oct. 1 to Oct. 2, 2017

2018 PSAAPG is going DIGITAL!

In a continual effort to reduce overhead and provide meaningful programs to our membership and the community, PSAAPG have decided to go DIGITAL. For those members still wanting hard copies of the newsletter, please email greg.thompsn@gmail.com or write to us at Pacific Section AAPG, P.O. Box 1072, Bakersfield, CA, 93302.

PSAAPG Membership Directory

The PSAAPG website will have a members-only password-protected membership directory available on March 1, 2018. Please email greg.thompsn@gmail.com if you do not want your name listed. There will also be a checkbox for this on the PSAAPG membership renewal form that goes out before the end of this year.

Marty Hall
Program Development Manager
Multi-Client Services

7765 Windwood Way
P.O. Box 549
Parker, CO 80134
USA

P: 720 851.6152
C: 303 885.8860

geokinetics.com

marty.hall@geokinetics.com





DAVID BURROUGHS
President

GEOLOGICAL LOGGING INC.
9229 Beatty Drive, Suite B
Sacramento, CA 95826
(916) 452-9570 Tel
(408) 307-4653 Cell
(916) 452-9573 Fax
david@geologinc.net

www.geologinc.net

Russ Robinson

October 30, 1938 - October 26, 2017

Russ was born October 30, 1938 and passed four days shy of his 79th birthday on October 26, 2017.

Our hearts go out to those close to our friend Russ Robinson. Russ was a great geologist that many of us got to know through his many activities and involvement in PSAAPG.

Russ's father was working at the gold mine in Mojave when he was born, and his family was there for a couple of years more until his father got a wartime job at the Lockheed plant in LA, when they moved into the city (Russ's father was an electrician). He went to Fairfax High School, and while he was there he ran cross-country as his sport. When he got out he acquired a Korean-war Jeep ambulance which he converted into a field vehicle. He and friends spent a lot of weekends camping in the desert and going down to Baja California, which probably got him interested in geology.

In 1963 or 1964, he and friends did a rafting trip down Glen Canyon on the Colorado, just before the dam was finished and the canyon was flooded. He started college around that time, graduating with his BS in 1967 from California State University of Los Angeles. Russ joined a very small group with Southern California Edison in 1967. He looked after their energy assets (at the time, Edison had non-op interests in gas fields, as a way of getting a stake in the gas that they were selling as a utility). So he traveled to Wyoming and other places checking on gas fields. When geothermal started up in the 70's, Edison took interests in Imperial Valley projects and Russ was their geothermal guy. He was going down to Brawley a lot in the late 70's and early 80's. He worked for Gulf from 1981 into 1983 and then became a consultant. Russ also did guest lectures at geology classes at Orange Coast College, and led power plant tours for the students. Later, here in Bakersfield, he taught at least one semester of beginning geology at Bakersfield College. He did some mudlogging for Epoch starting in 1989.

From 1990 into 2001, he was the Curator of the California Well Sample Repository at California State University of Bakersfield and was always great at helping his colleagues and students finding needed well cores, paleo and other data to be analyzed.

In 2001, Russ and his wife, Mary moved to Hawaii and taught one year of high school chemistry and then worked at Walmart and Lowes until 2007 when he officially retired. During his retirement he stayed very active in local civics including the geology community by writing newspaper articles and being involved educating the public about geology and power.

Rest in Peace Russ.



MUNGER MAP BOOKS

The CA Well Sample Repository is seeking donations of MUNGER MAP BOOKS. The collection is incomplete, so any donations would be kindly appreciated!!!
Please contact Larry Knauer at laknauer@aol.com



EarthQuest Technical Services, LLC

David R. Walter

drwalter@eqtservices.com
www.eqtservices.com

RESERVOIR CHARACTERIZATION
GEOLOGY
PETROPHYSICS
DATABASE MANAGEMENT
DIGITIZING & SCANNING

P.O. Box 1697
Bakersfield, CA 93302
661•321•3136

GREGORY GEOLOGICAL SERVICES

Glenn J. Gregory

Calif. Prof. Geol. #3676

8804 O'Meara Ct.
Bakersfield, CA 93311

(661) 747-5065

glenng@bak.rr.com

SUMMARY: 2017 PSAAPG West Coast Student Expo

by Dr. Kathleen Marsaglia.

The Ninth Annual Pacific Section AAPG West Coast Student Expo took place at California State University, Northridge on 6 to 7 October 2017. Three companies sponsored the event: California Resources Corporation at the Platinum Level, Aera Energy at the Gold Level, and Chevron at the Silver Level. The Pacific Section of the American Association of Petroleum Geologists (AAPG) was a sponsoring organization.

There were 55 students who registered to participate in the Expo: 12 Bachelor-level, 35 Master-level and 8 Doctoral students. Registered students hailed from 26 institutions including: Brigham Young University, Cal Poly Pomona, CSU Fullerton, CSU Fresno, CSU Long Beach, CSU Northridge, CSU Sacramento, Imperial College London, Mississippi State University, Northern Arizona University, Portland State University, Queen's University (Canada), San Diego State University, Scripps Institution of Oceanography, Southern Illinois University Carbondale, UC San Diego, UT Dallas, UCLA, UC Santa Barbara, UC San Diego, University of Southern California, University of Alaska Fairbanks, University of Arizona, and the University of Oregon.

Twenty-seven students registered for the poster session held the morning of October 6th. The posters were judged by a crew of company representatives, headed by Cynthia Huggins Schwartz of Aera Energy. Aera Energy sponsored poster refreshments. Awards included books donated by Pacific Section AAPG. Students and company representatives attended a luncheon and round-table discussion from 12:00-2:30pm hosted by California Resources Corporation where the following poster awards were made.

PhD

First Place: Tarryn Cawood, USC
 Second Place: William Schmidt, USC
 Third Place: Emily Wei, Scripps Institution of Oceanography

MS

First Place: Leo Gianetta, CSU Long Beach
 Second Place: Lonnie Hufford, CSU Northridge
 Third Place: James McNeil, CSU Northridge

BS

First Place: Michael Flowers, CSU Northridge
 Second Place: Evelyn Gutierrez, CSU Fullerton

Luncheon seating around large round tables facilitated company representative interaction with students. Company representatives addressed the students to highlight their companies hiring needs. At set intervals, company recruiters switched tables to maximize interaction with students. Afterwards, from 3:00 to 6:00pm, students and representatives continued to interact at the Company Booth Exposition in the Grand Salon. Saturday October 7th was dedicated to student interviews with the companies from 8:00 am-5:00 pm. The companies made all of the arrangements for interview times with students prior to Saturday. All interviews occurred in rooms at the CSUN University Student Union.



From left to right:

*Leo Gianetta, CSU Long Beach (First Place MS);
 Emily Wei, Scripps Institution of Oceanography (Third Place PhD);
 Tarryn Cawood, USC (First Place PhD);
 William Schmidt, USC (Second Place PhD);
 Evelyn Gutierrez, CSU Fullerton (Second Place BS);
 Lonnie Hufford, CSU Northridge (Second Place MS);
 Michael Flowers, CSU Northridge (First Place BS);
 James McNeil, CSU Northridge (Third Place MS, Not pictured)*

ERNEST O. ESTWING AND HIS FAMOUS GEOLOGY PICK

Written by Stephen P. Mulqueen.



Rock Pick - Pointed Tip, Leather
Item No. E30

Estwing rock pick with leather handle, similar in design to the original pick first developed in 1934.

The Estwing Brand of Hand Tools

The Estwing brand, a trademark of the Estwing Manufacturing Company, Inc. (Estwing), is the most popular source of quality striking tools applied to the sampling and gathering of rocks, minerals, crystals, metallic ores, industrial minerals, fossils and archeological artifacts. Estwing Geological Tools include rock picks, crack hammers, engineer's hammers, drilling hammers, chisels, geo/paleo picks and treasure scoops. The hand tools are popular due to their durable steel compositions and well-balanced designs. Estwing Geological Tools are used extensively by geologists, paleontologists, engineers, surveyors, miners, prospectors, archeologists, soil scientists and rockhounds.

Estwing also produces carpenter's claw hammers, roofing hammers, axes, hatchets, knives, machetes, gad pry bars, hacksaws and a variety of specialty tools. Related equipment supplied by Estwing include safety goggles, gloves, daypacks and sheaths. All of their hand tools are fabricated at their manufacturing facility in Rockford, Illinois.

Ernest O. Estwing (1884 - 1982)

Ernest Otto Estwing, the founder of Estwing Manufacturing Company, was born on the Island of Oland, Sweden on December 24, 1884 with the name Ernest O. Johnson. Estwing had a curiosity about rocks and minerals that dates back to his early childhood. During the 1890s, little Ernest had an interest in collecting beach pebbles while walking on the shore of the Island of Oland along the Baltic Sea. Oland is located immediately east of the southern tip of Sweden. It is not known what types of rocks he was collecting, but they were probably beach-rounded agates and other varieties of colorful rocks. He was known as "Rock Boy" by the local island residents where he lived. This was based on his bulging trouser pockets that were often full of colorful beach-rounded stones.

As a 16 year old, during the year 1900, he immigrated to the United States through the Ellis Island Immigrant Inspection Station in New Jersey. After settling in Illinois, he found that the name "Johnson" was very common in Rockford due to the large community of Swedes who were living in the area. As a direct result, he officially changed his name to Ernest O. Estwing. "Estwing" means East Island in his native language, referring to the Island of Oland along the Baltic Coast where he was born. Later in life, Estwing married and had a family of 5 children. Mr. Estwing passed away at the age of 97 on June 3, 1982 after a great life with a successful career.

Estwing's Early Patents

Mr. Estwing's first patent application involved a design for a rear-loading shotgun. His second patent application, filed on July 29, 1926, detailed the design of a one-piece carpenter claw hammer with inset wooden grips. The patent application for this first hammer was approved on April 2, 1929, and issued as Patent # 1,578,502, granted from the U. S. Patent Office. This was only the beginning of his unique designs in an extensive array of hand tools. Estwing Manufacturing Company, Inc. continues to apply for patents as new products are designed and improved.

(Continued on next page)

Estwing Manufacturing Company

Estwing Manufacturing Company was founded in 1923 by Ernest O. Estwing. Mr. Estwing's first tool was the one-piece steel carpenter claw hammer that he designed and began manufacturing in the basement at his home in Rockford, Illinois. The claw hammer was constructed of forged high-carbon steel with tapered wood grips that were inlaid into the steel shank and fastened with two inset rivets.

Estwing's carpenter hammer sold in the mid-1920s for \$2.00, twice as much as a commonly available carpenter hammer manufactured with a standard solid wood handle. This early superior design of his hammer was not enough to make the product a huge success with the higher price. In 1925, Estwing advertised his hammer by placing a full-page ad in "The Carpenter Magazine", which first appeared in the July issue. The immediate response was overwhelming and he was faced with the inability to keep pace with demand, while continuing to manufacture the hammers by himself in his basement.

Estwing saw the need to expand his operations and to build a machine shop. The early machine shop was constructed on property he purchased in Rockford, Illinois. The property is still owned and operated by Estwing Manufacturing Company, Inc., located at 2647 8th St. in Rockford. With the building, he equipped the machine shop with drop-forge presses, grinding machines and ovens.

He also began hiring employees and trained them with special attention to fabricating a quality product. Mr. Estwing realized that he was only able to compete in the striking-tool market with products that were superior to that of other suppliers. During the late 1920s, sales of hammers declined drastically due to the Depression Era economic downturn. Estwing was able to keep the machine shop from going under during this difficult time in American history.



Estwing's advertisement for the first carpenter hammer, The Carpenter's Magazine, 1925.

The Estwing Geology Pick, A Legend Was Born, 1934

In 1934, Estwing received a note attached to an order for carpenter hammers sent by a mining engineer from Arizona:

"My blacksmith has been welding pick points to the claws of your hammers, but that still doesn't do the job where busting rocks is concerned. Have you ever considered manufacturing a special hammer-pick for prospectors and mining men? There might be a market for such a product."



Ernest Estwing during the mid-1950s.

It didn't take very long for Mr. Estwing to see the opportunity for an entirely new line of tools. He immediately began designing the new product, experimenting with methods of manufacturing the tool and the legendary Estwing geology pick was born during 1934. His initial design featured the familiar short blunt square head, long sharp four-sided pick end, one-piece forged steel, thin shank between the head and the handle and the distinguished laminated-leather grip. After finalizing his design and manufacturing method for the geology pick, Estwing applied for a patent to protect his interests. His initial design has not changed very much since those early years of the mid-1930s.

To introduce his new product, Estwing sent complimentary rock hammers to the geology departments of several leading colleges during the mid-1930s. Geology students armed with these new "rock smashers" demonstrated the new tool's abilities while in the field. Word of the tools' durability began spreading like wildfire.

(Continued on next page)

After the Depression Era economic downturn and the War Years had passed, the Golden Age of Rockhounding began emerging and the demand for the geology hammers increased. The sale of Estwing rock picks really took off during the Uranium Rush beginning in the early 1950s. Uranium prospectors throughout the Western States included Estwing geology picks in their list of essential prospecting equipment. The rock hammer was also a very important survival tool and could be relied upon for everything from digging holes and pounding tent stakes to splitting firewood.

High Quality Carbon Steel

Estwing's steel, applied to the manufacturing of all of the company's hammers, axes, knives, chisels, pry bars and wood splitting tools, is supplied by Nucor Steel Nebraska and is delivered to Rockford, Illinois from Nucor's plant in Norfolk, Nebraska. The steel billets are composed of high-quality carbon-steel with trace amounts of chemicals added to make the metal malleable during hot-forging operations as well as to enhance strength and durability. The steel is free of non-metallic inclusions, which insures that the solid one-piece tool will be very hard, but not brittle.

When fabricating a hammer in Estwing's machine shop, a steel billet is heated to a high-temperature and then subjected to several strokes on the drop-forge equipment, set with the proper dies (based on the tool's general form and design). The forged steel is then annealed in an oven for a brief period and allowed to cool slowly. The steel is finally heat-treated for an extended length of time and quenched in oil. Some variations to this process are applied to certain tools, depending on the mass of steel being formed and the tools' design applications. Details of the metallurgical chemistry, as well as manufacturing temperatures are proprietary.

After forging, annealing and heat-treating, the steel is allowed to finish cooling to room temperature. The tool is then machined into its final shape. For the manufacturing of hammers and axes, the leather or vinyl grip is formed, and the tool is then machined and polished for the removal of any burrs or upsets where the grip meets the steel. The Estwing insignia is then applied to the grip. The tool is given a final polish, coated with a clear finish and applied with an adhesive decal.

The Innovations and Improvements Never Stopped

In 1960, after years of applying laminated leather for the hammer grips, Estwing Manufacturing Company introduced a blue molded nylon grip. Over 40 years later, the chemistry of the nylon grip was improved, allowing for the absorption of 50% more of the vibration shock generated from a blow of the hammer on a hard surface.

Estwing Manufacturing Company's building in Rockford, Illinois has expanded numerous times since those early years of the mid-1920s to address the increase demand for tools, to house new machinery, to upgrade new electric power requirements, to modernize the office space and to produce new product lines. Estwing Manufacturing Company, Inc. is still a family-owned and family-managed business enterprise. Today, the company has over 200 employees. Over fifty of their employees have been with the company for more than 25 years.

The Company's dominant product line continues to be their hammers, including geology picks, carpenter hammers, engineer hammers, crack hammers and drilling hammers. Their greatest markets include the United States, Canada, Great Britain, Germany, Norway, New Zealand and Australia. In Germany, Estwing supplies the "Latthammers", specially designed roofing hammers made to exact German specifications.

Conclusion

Ernest O. Estwing had no idea that his legendary geology pick would remain as an essential tool for so many professional scientists, engineers and hobbyists. Hand tools fabricated by Estwing Manufacturing Company, Inc. are still made to the quality standards specified by Mr. Estwing beginning in those early years of the mid-1920s. After numerous patents, the Estwing Manufacturing Co. continues to develop new product lines and improve existing tool designs, never deviating from the high standards that made the company successful.

(Continued on next page)

Estwing Manufacturing Company, Inc. still operates just as Mr. Estwing envisioned, remaining as a family-owned and family operated business-enterprise staffed with dedicated employees. Estwing's company website states: *"The history of Estwing Manufacturing Company reflects the promise of the free enterprise system, that success comes to anyone who can 'build a better mousetrap' "*.

List of References

Desert Magazine, 1959, October, pages 29 - 32, article titled: Estwing's First Field Trip.

Other data source: Bob Youngren, CEO, Estwing Manufacturing Company, Inc., provided historic data and photos.

Special thanks to: Gregory T. Cranham, geologist, for providing a copy of the 1959 article from Desert Magazine.



Early photo of Estwing Manufacturing Company's facility in Rockford, Illinois during the early 1960s.



Debbie Charpentier

Comprehensive Financial Planning

661-322-5204

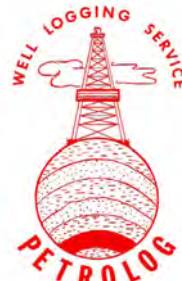
Debbie.Charpentier@LFG.com

Debbie Charpentier is a registered representative of Lincoln Financial Advisors Corp.

Securities and investment advisory services offered through Lincoln Financial Advisors, a broker-dealer (member SIPC) and registered investment advisor. Insurance offered through Lincoln Marketing and Insurance Agency, LLC and Lincoln Associates Insurance Agency, Inc. and other fine companies. Charpentier Wealth Strategies is not an affiliate of Lincoln Financial Advisors Corp. CRN1387451-010816

www.CharpentierWealth.com

CA Insurance License #0763281



PETROLOG

PETROLOG, INC.

JOHN T. WILLIAMS
Geologist, P.G.#5899, President

Geological Well Logging

P.O. BOX 7028
VENTURA, CA 93006
jtw@petrolog-geological.com

(805) 642-2847 • Fax(805) 980-5569 • Cell(805) 231-3793

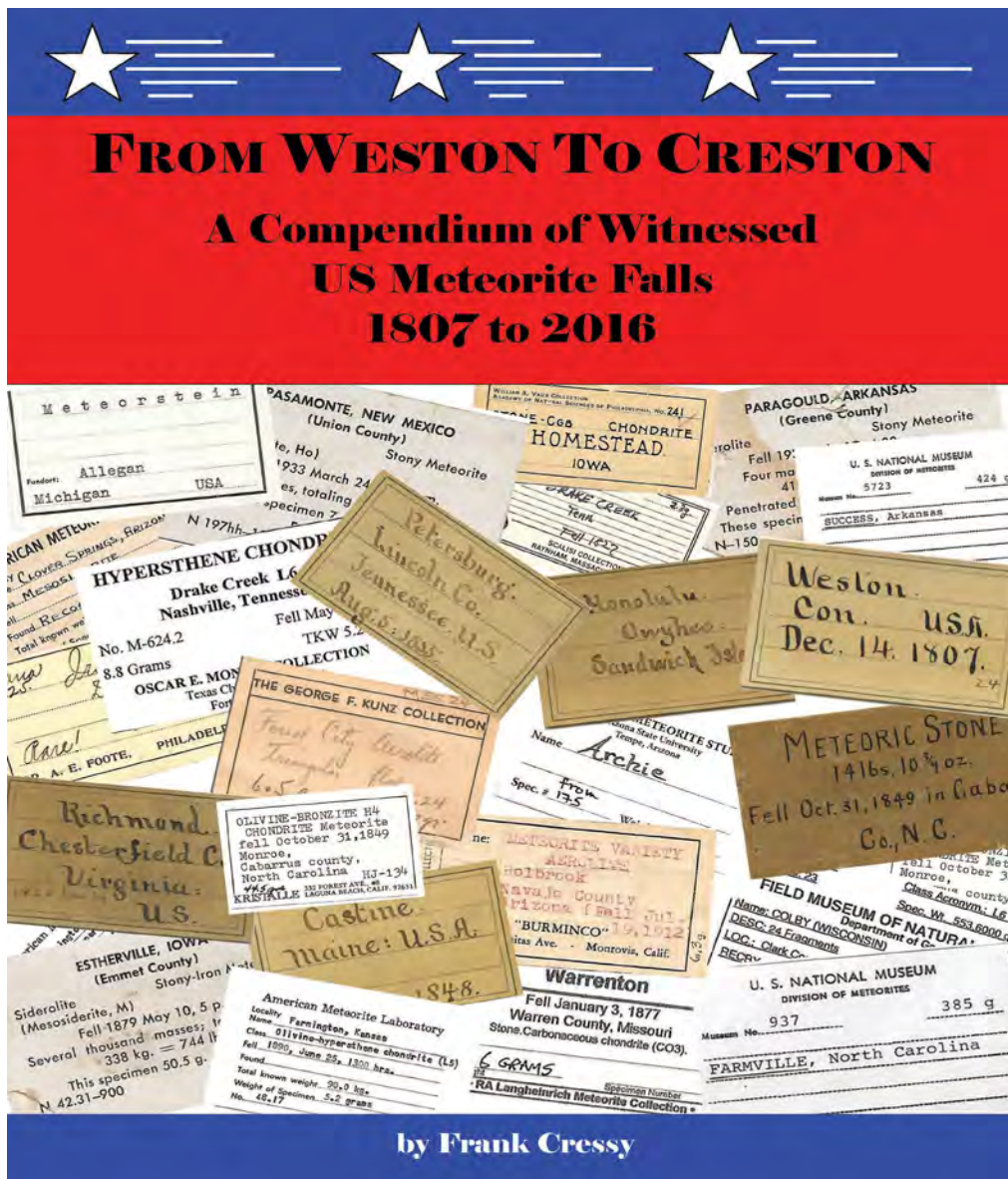
New Publication

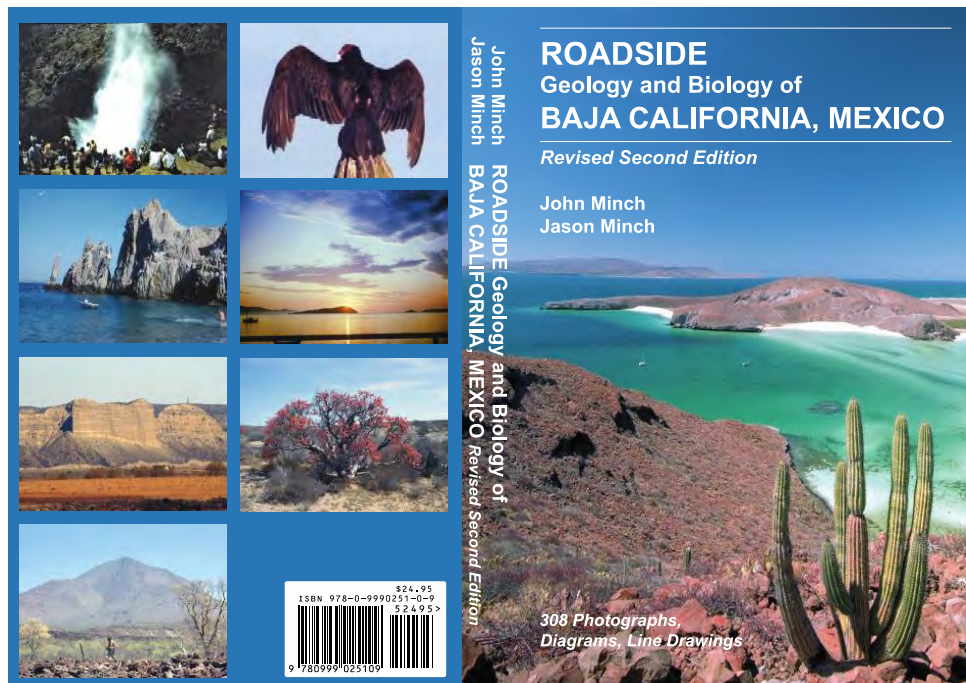
"FROM WESTON TO CRESTON – A Compendium of Witnessed US Meteorite Falls – 1807 to 2016"

by Frank Cressy

The violent display of blazing light and explosive sounds ending with meteorites crashing to the ground is an unforgettable event to those who witness it firsthand. This book summarizes the fall histories of nearly 170 witnessed meteorite falls that have occurred in the United States since the first documented fall at Weston, Connecticut in 1807. It is written not only for the collector of these rare objects, but also for those interested in the history and the growth of the branch of science known as Meteoritics. The accounts of the fall phenomena and recoveries associated with these extraordinary events are the focus of the book. However, the book is more. The reader will learn about those individuals responsible for the growth of the science and their contributions, together with interesting facts and coincidences about these visitors from space; 257 pages with over 300 color photos plus maps, figures and illustrations.

Soft Cover books \$36.00; for ordering, contact: fcressy@prodigy.net





Roadside Geology and Biology of Baja California

John Minch and Jason Minch

Second Edition, completely updated and revised - Over 300 color photos, sketches, and drawings, 6x9, full color, 288 pages, Includes Rock charts, Geologic time scale, References, Glossary, Index

**Introductory Meeting Sale Price
\$20 cash**

or check made out to "John Minch Publishing"

**To order additional copies remit \$25+\$2 CA tax+\$3 shipping to:
John Minch Publishing, 27441 Betanzos. Mission Viejo CA 92692
jmainc@earthlink.net**

HOME MOVIES TO DVD,
PHOTO GIFTS, RESTORATIONS
& MORE

digital creations

1705 20th St.
(661) 322-5552
digitalcr1@gmail.com

 like us on facebook
digitalcreations.bakersfield

Retirement Planning
College Savings Plans
Financial Planning

Morgan Stanley

The Hopps Group Lydia Hopps & Benjamin Hopps CFP®

Investment Management Consultant
Senior Vice President
Financial Advisor
300 Esplanade Dr., 10th Floor
Oxnard, CA 93036
1 805 278-3609

www.morganstanleyfa.com/thehoppsgroup/

© 2014 Morgan Stanley Smith Barney LLC. Member SIPC.
CRC897562 03/14



California Well Sample Repository

Our 60+ Volunteers



Our Volunteers curate material from Superior Oil Company's collection from the early 1930's.



Step 1



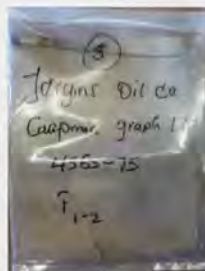
Wooden Crates with Samples

Step 2



Samples in Paper Bags from 1920's

Step 3



Samples Transferred into Plastic Bags

Step 4



Plastic Bags Placed into Boxes

Step 5



Boxes Placed on Shelf



Dr. Victor Church Memorial

The only facility in California providing permanent storage and public use of cores, sidewall samples, drill cuttings, outcrop samples, microfaunal slides, foundation borings, and mineral suites.



**The Repository is open on
Mondays 7am-2pm
Tuesdays 7am-9am
Wednesdays 7am-2pm
Thursdays 7am-9am.**

Visit us on the web at www.wellsample.com or call (661) 654-2324 for more information.

Alaska Geological Society

November 21st, 2017.

Speaker: Tom Homza, Shell Exploration and Production.

Talk: "A geologic interpretation of the Chukchi Sea Petroleum Province: Offshore Alaska, USA".

Coast Geological Society

November 21st, 2017.

Speaker: Yannick Wirtz

Talk: "Variation in Strain and Deformational Style Between the Monterey and Sisquoc Formations, Santa Maria Basin, California".

December 19th, 2017.

Speaker: Brenna Quigley. Talk: "The Geology of Wine".

January 16th, 2017.

Speaker: Matt Jackson.

Talk: "Mantle Plumes and Volcanic Hotspots: Plumbing the Composition of the Earth's Deep Interior".

L.A. Basin Geological Society

No talks remaining talks for 2017 due to holiday conflicts.

Northern California Geological Society

November 29th, 2017.

Speaker: Dr. Marjorie Schulz, USGS.

Talk: "Marine Terraces of California: Landscapes from the Waves"

No Dec Meeting.

Northwest Energy Association

November 16th, 2017.

Speaker: To be announced.

Talk: A talk from a tribal member on creative energy issues.

Sacramento Petroleum Association

November 15th, 2017

Speaker: Scott Hector. Talk: "Lucky S" Gold Mine in Plumas County

December 20th, 2017:

Speaker: Rich Boyd. Talk: "Kirby Hill Gas Storage".

January 17th, 2017.

Speaker: Dutra Group. Talk: "Saving the Powerhouse at Oroville Dam"

San Joaquin Geological Society

November 14th, 2017.

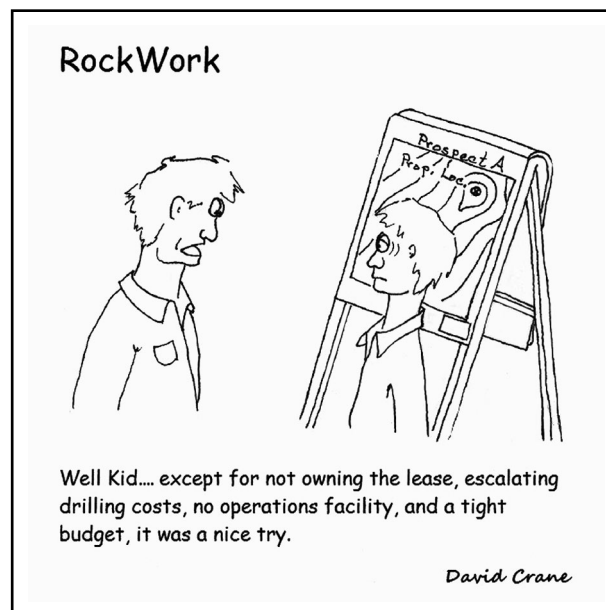
Speaker: Thom Davis, consultant.

Talk: "Fault displacement hazards at Aliso Canyon and Honor Rancho natural gas storage fields, southern California".

December 12th, 2017.

Speaker: Zane Jobe, Colorado School of Mines.

Talk: "Applying scaling relationships to enable better reservoir prediction in submarine depositional systems: Bridging the gap between geomorphology and the stratigraphic record".



Alaska Geological Society
www.alaskageology.org

P. O. Box 101288
Anchorage, AK 99510

Contact: Dave Buthman
dbuthman@hilcorp.com



Geology meetings/talks are held monthly September through May, usually on the third Thursday of the month, at the BP Energy Center (1014 Energy Court) from 11:30 am to 1:00 pm. Open To The Public. No Charge to Attend.

President:	Larry Smith	ljsmith@gci.net
President-Elect:	Greg DuBois	
Vice-President:	Keith Torrance	keith.torrance@uicurniaq.com
Secretary:	David Buthman	dbuthman@hilcorp.com
Treasurer:	Carla Sanchez Phelps	carlasphelps@gmail.com
Past-President:	Chad Hults	chadcph@gmail.com

Coast Geological Society
www.coastgeologicalsociety.org

P. O. Box 3055
Ventura, CA 93006

Contact: Theresa Heirshberg
805-443-7641



Dinner meetings are held monthly September through May, on the third Tuesday of the month, at Poinsettia Pavilion, 3451 Foothill Road in Ventura. Social hour starts at 6:00 p.m., dinner is served at 7:00 p.m., and the talk starts at 8:00 p.m. The cost of dinner with reservations is \$20 (members), \$25 (non-members), or \$10 (students and K-12 teachers). For reservations, please email Shelby Fredrickson (secretary@coastgeologicalsociety.org), and should be made by 4:00 p.m. on the Friday before the meeting.

President:	Theresa Heirshberg	president@coastgeologicalsociety.org
Past President:	Alastair Haddow	pastpresident@coastgeologicalsociety.org
Vice President:	Eric White	vicepresident@coastgeologicalsociety.org
Secretary:	Shelby Fredrickson	secretary@coastgeologicalsociety.org
Treasurer:	Stacey Zeck-Boles	treasurer@coastgeologicalsociety.org
Membership chair:	Bonnie Walters	membership@coastgeologicalsociety.org
Webmaster/Tech Support:	John Rice	webmaster@coastgeologicalsociety.org

Los Angeles Basin Geological Society
www.labgs.org

Contact: Bert Vogler
949-585-3103



Luncheon meetings are held monthly September and October; and January through June, usually on the fourth Thursday of the month, at The Grand at Willow Street Conference Centre (4101 E. Willow Street) in Long Beach. Lunch is served at 11:30 a.m., and the talk starts at 12:15 p.m. The cost is \$25 (with reservations), \$30 (without reservations), \$20 for retired members, and \$5 for students. Reservations can be made online at www.labgs.org or by contacting Ryan Weller at 562-637-6019 or ryweller@gmail.com Reservations must be made prior to Tuesday before the meeting.

President:	Bert Vogler	hvogler@kleinfelder.com
Vice President	Nate Busch	nbusch@eecenvironmental.com
Treasurer:	Nicky White	nwhite@geomechanicstech.com
Secretary:	Ryan Weller	ryweller@gmail.com
Scholarships:	Karla Tucker	ktkr2@aol.com
Webmaster	Ivan Aburto	Ivan.aburto@crc.com

Northern California Geological Society
www.ncgeolsoc.org

9 Bramblewood Court
Danville, CA 94506-1130

Contact: Mark Sorensen
msorensen64@earthlink.net



Evening meetings are held monthly September through May, usually on the last Wednesday of the month, at the Masonic Center (9 Altarinda Road) in Orinda. Social hour starts at 6:30 p.m., and the talk starts at 7:00 p.m. (no dinner). For reservations, contact Dan Day at danday94@pacbell.net before the meeting. Cost is \$5 per regular member; \$1 per student member; and \$1 per K-12 teachers.

(Continued on next page)

NCGS Officers:

President:	Greg Bartow	gregbartow@yahoo.com
President-elect:	open	open
Past President:	Will Schweller	willschweller@yahoo.com
Treasurer:	Barbara Matz	barbara.matz@cbifederalservices.com
Recording Secretary:	Crystal Replogle	ctreplogle@gmail.com
Membership Chair:	Tom Barry	tomasbarry@aol.com
Outreach Chair:	Mark Petrofsky	
Newsletter Editor:	Mark Sorensen	msorensen64@earthlink.net
Field Trip Coordinator:	Will Schweller	willschweller@yahoo.com
K - 12 & Geoscience Program Coordinator:	open	open
Scholarships:	Phil Garbutt	plgarbutt@comcast.net
Program chair:	John Karachewski	cageo@sbcglobal.net
Website Manager:	Mark Detterman	mdetter1@gmail.com

Northwest Energy Association

www.nwenergy.us

P. O. Box 6679

Portland, OR 97228-6679

Contact:

Jim Jackson or John Armentrout



Luncheon meetings are held monthly September through May, on the third Thursday of the month, at the Multnomah Athletic Club (1849 SW. Salmon Street) in Portland, Oregon. Meeting time is at 11:45 AM to 1:00 PM (speaker about 12:15 PM). The cost is \$25 for members and \$30 for non-members. For information or reservations email NWEnergyAssociation@gmail.com, or our Postal Box: Northwest Energy Association, P.O. Box 6679, Portland, Oregon 97228-6679.

President	Laird Thompson	lbtfracs@gmail.com
Vice-President	Steven Pappajohn	pappajohn@narpllc.com
Treasurer	Barb Portwood	bbportwood@gmail.com
Co-Treasurer	Jim Jackson	jackson.js@comcast.net
Secretary	Clark Niewendorp	clark.niewendorp@state.or.us

Sacramento Petroleum Association

P. O. Box 1844

Folsom, CA 95630

Contact: Pam Ceccarelli

916-439-0400



Luncheon meetings held monthly January through November, on the third Wednesday of the month. Location: Club Pheasant Restaurant in West Sacramento. The meetings starts at noon. The cost is \$16 - \$20. For information or reservations, contact Pam Ceccarelli.

President:	Jerry Reedy	JWR5532@aol.com
Vice-President:	Scott Hector	Scott.Hector@gmail.com
Secretary	Derek Jones	djones@gasbiz.com
Editor/Treasurer	Pam Ceccarelli	pc626@comcast.net

San Joaquin Geological Society

www.sanjoaquingeologicalsociety.org

P. O. Box 1056

Bakersfield, CA 93302

Contact: Lindsey Thompson

lthompson@envirotechteam.com



We have dinner meetings on the second Tuesday of the month, October through June, at the Eagle's Lodge at 1718 17th Street, Bakersfield, CA 93302. There is an icebreaker at 6:00 p.m., dinner at 7:00 p.m., and a talk at 8:00 p.m. Dinner is \$25 for members with reservations and \$30.00 for nonmembers and members without reservations. Students may attend for free.

President:	Cameron Campbell	cameron.campbell@conservation.ca.gov
Past President:	Greg Gordon	gsgordon@aeraenergy.com
President-Elect:	Jonathan Goodell	Jonathan.Goodell@crc.com
Vice-President:	Matt Andersen	MAndresen@aeraenergy.com
Secretary:	Lindsey Thompson	lthompson@envirotechteam.com
Treasurer:	Kathy Jennifer Prosser	jprosser@envirotechteam.com
Webmaster:	Ivan Aburto	Ivan.Aburto@crc.com



BRYAN BELL HAS OPENED
A NEW FULL SERVICE
CORE ANALYSIS FACILITY IN
BAKERSFIELD

VISIT US ON THE WEB
www.bestcoreservices.com

Or Stop by at

4031 Alken Street Suite A1
Bakersfield CA 93308
Phone: (661) 835-6001

WHERE BETTER BECAME BEST

Contact Bryan Directly

Cell: (661) 496-2654
bryan@bestcoreservices.com

NOW AVAILABLE

Anomalies

✚ Pioneering Women in Petroleum Geology: 1917-2017

To be released April 1, 2017, *Anomalies* represents a deep foraging into the unrealized and near lost history of women that began in 1917 their 100 year journey as petroleum geologists.

“Robbie Gries and her contributors have created a remarkable account of early women in petroleum geology. The book represents a “deep dive” into the lives, accomplishments, triumphs, and, even, terrors, of early women professionals. It displays impressive scholarship, and reflects four years’ efforts to source histories of these largely forgotten women professionals.

An astounding network of women professionals, formed by need, strengthened by time, constituting an amazing support system. Robbie has done an amazing, multi-year research effort in uncovering hundreds of early petroleum geologists, active in many countries, whose early efforts are now recorded for our belated appreciation.

A delightful, hopeful, sense of progress is conveyed by the book, as the intense survival stories of early women geologists, give way to a prideful modern acknowledgement of the importance of women petroleum geoscientists in our modern petroleum industry.

The book should be read by every petroleum geologist, geophysicist, and petroleum engineer; partly for the pleasure of the sprightly told adventures, partly for a sense of history, and, significantly, because it engenders a proper respect towards all women professionals, forging their unique way in a “man’s world”.

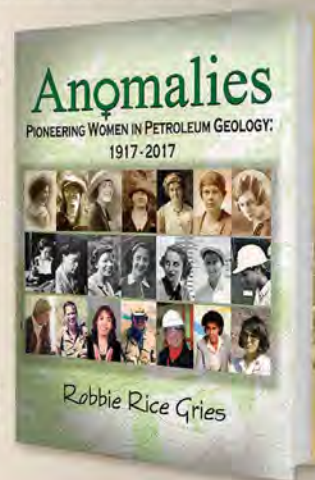
Buy this book! It will renew your pride in being a petroleum geologist, and it will enlighten you on the struggles of our wonderful women associates as they followed their professional dreams.”

– Marlan Downey, Past President of AAPG, CEO Roxanna Petroleum

“*Anomalies* celebrates the inspiring achievements of an intrepid group of pioneering women that have laid the groundwork for female geoscientists today. Robbie Gries provides an entertaining and informative narrative of 100 years of trailblazers that is enriched by excerpts from diaries, letters and interviews. The women in these pages were true scientific contributors and innovators at a time when women were just emerging into the growing field of petroleum geology. This is a must read for any historian of the oil patch, as it provides the only comprehensive record of the hidden history of these ground-breaking women.”

– Allyson Anderson Book,
Executive Director - American Geosciences
Institute

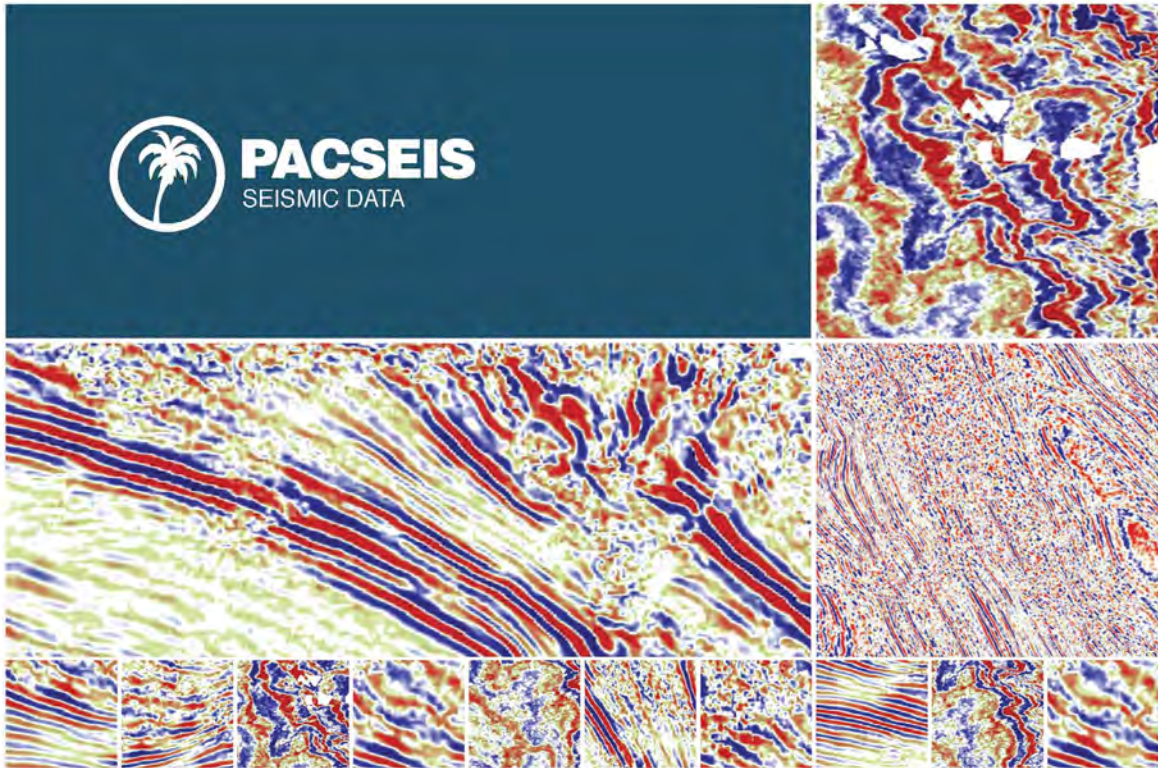
Once released, the book can be ordered from the AAPG Store for \$50 plus shipping and handling. Please e-mail publications@aapg.org expressing your interest and we will contact you as soon as the book is available. Don't want to wait? Visit the AAPG Center at the 2017 ACE meeting to purchase your copy.





PACIFIC SECTION AAPG
P. O. Box 1072
BAKERSFIELD, CA 93302

PRESORTED
STANDARD
U.S. POSTAGE PAID
BAKERSFIELD, CA
PERMIT NO. 1163



PACIFIC SEISMIC COMPANY

The leader in subsurface information

RESOURCES THAT DELIVER THE DIFFERENCE

- One of the largest seismic databases available for license
- Seismic available for immediate license
Over 500,000 line miles of 2D data located in domestic United States (onshore & offshore)
- 2,500 square miles of 3D surveys

RECENTLY ACQUIRED SEISMIC DATABASES BY PACIFIC SEISMIC CO.

- Chevron USA California, OXY USA Nationwide (including Arco & Enron)
- Santa Fe energy, TXO, Cities Service Oil & Gas Nationwide
- Southern Pacific, PG&E/ NGC, SOHIO

PACIFIC SEISMIC COMPANY | Your Full-Service Seismic Brokerage & Acquisition Company

EXPLORATION CONSULTING

PROJECT DEVELOPMENT

Tel (661) 322-1171 | Fax (661) 322-1181 • www.pacseis.com | Bakersfield | Houston