



SAN DIEGO ASSOCIATION OF GEOLOGISTS

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MEETING ANNOUNCEMENT:

Wednesday, June 16, 1999

Place: Pinnacle Peak Restaurant
7927 Mission Gorge Road, Santee
Phone: (619) 448-8882

Time: 6:00 - Social Hour
7:00 - Dinner
8:00 - Program

Directions: Hwy 52 in San Diego, take Mission Gorge Road exit. Turn right onto Mission Gorge Road, go ¾ mile. The restaurant is on the left, across from K-Mart.

Dinner: Choice of "Cowboy Steak" (T-bone) or Chicken breast (boneless, skinless), potato or corn, large salad, ice cream for dessert. Coffee, tea, and soft drinks are also included.

Cost: \$ 20.00 per person (Children under 12 & Students with ID: \$ 10.00)

Reservations: Call the SDAG Reservation Line at Hargis + Associates, Inc.: (619) 454-0165, Ext. 190, before 5:00 pm Monday, June 14. Or, make your reservation online through the SDAG website (see above). Contact Barbara Birnbaum (SDAG Secretary) with any questions.

Program: The Camisea Project in Peru: Field mapping for a natural gas pipeline in the southeastern Peruvian rainforest. **Speaker: Barbara Birnbaum**

The Camisea Project is a natural gas and condensate project in Peru. The Camisea area is approximately 310 miles (500 kilometers) due east of the Peruvian capital, Lima, on the eastern side of the Andes mountains, in the Peruvian rainforest. The Camisea hydrocarbon reserves were first discovered by Shell in the mid-1980s. The deposits contain some 11 trillion cubic feet of natural gas and 600 trillion barrels of natural gas liquids. This is enough to serve Peru's current energy needs for over 100 years. The development of the reserves would convert Peru's annual hydrocarbon deficit to a positive figure and it is estimated that Peru would become a net exporter within five to ten years. Major customers would include electric power plants, the mining sector, and energy-intensive industries. Worth \$3 billion dollars, the Camisea Project would be one of the biggest foreign investments in the history of Peru.

On May 17, 1996, Shell Prospecting and Development Peru (SPDP) and its partner, Mobil Exploration and Producing Peru Inc., signed a License Agreement with PeruPetro, a state agency, to undertake appraisal drilling activities and to study options for the future development of the Camisea reserves. With a 57.5 percent interest, SPDP was responsible for operating the venture. However, after two years, Shell and Mobil announced on July 15, 1998 that they were unable to proceed with the Camisea Project at the current time. At the time of project closure, the contractor alliance of Bechtel - Cosapi - Odebrecht (BCO Alliance) was undertaking detailed pipeline routing surveys in three main areas. Each of these three areas consisted of a remote camp operation, consisting of 25-30 Peruvian and Argentinean personnel and one American field geologist (from Bechtel).

Barbara Birnbaum was the field geologist in one of the three camps for the final 5 weeks, until field operations were terminated for the Camisea Project in early August 1998. Barbara will provide an overview of the field operations of her group, including camp logistics, surveying, geologic mapping, etc. Although Camisea is in the middle of the jungle, the project was treated as an 'offshore' operation. This meant that no access roads were built into the region from outside and all equipment were brought in by boat, plane, or helicopter. It also means that any contact between employees and the local population was avoided as far as possible. Only local employees were allowed to leave the camp. The primary purpose of the field operations during this phase was to survey and document a detailed alignment for the proposed pipeline, by way of a shoulder-wide footpath through the jungle. The proposed pipeline alignment will go from the Camisea area in eastern Peru, over the Andes, and all the way to the western coast, just south of Lima.

Background: Barbara Birnbaum worked for Steffen, Robertson, and Kirsten in mining geology for 1.5 years in Reno, NV, then for Bechtel for 6 years in Southern California, and is currently an independent consultant in San Diego.

UPCOMING 1999 MEETINGS:

- Wed., July 21: Joint meeting with Inland Geological Society, meeting in Temecula. Kathleen Springer, *Paleontology of the Eastside Reservoir Project*.
- Wed., August 18: John Peterson, County Hydrologist, *San Diego Water Resources Update*, Bali Hai restaurant, Shelter Island
- Sat., September 18: Annual Picnic – SDAG / ASCE / SDSU Geology Alumni – Mission Bay
- October 9-10: SDAG Field Trip: *Water Resources Development in Southern California* (contact Greg Cranham, 1999 SDAG Field Trip Chairman, for more info, or to submit a paper)
- Wed., November 17: Dr. Pat Abbott will talk from his new book on the geology of San Diego County: "The Rise & Fall of San Diego." New book release and signing, location TBA
- Wed., December 15: Tom Deméré, *San Diego Natural History Museum Paleontology Update*, Scholarship announcements and SDAG officer elections for year 2000

1999 CORPORATE SPONSORS:

We are pleased to be able to extend our most sincere **thanks** to our Corporate Sponsors for 1999! Their generosity allows us to plan the annual field trip and produce field guides, to host the SDAG/SDSU picnic on Mission Bay, support student participation at a greatly reduced price, produce this monthly newsletter, and to provide scholarship funds to local geology students. Our 1999 Corporate Sponsors are:

- AGRA Earth & Environmental
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Please consider becoming a Corporate Sponsor of SDAG. In addition to monthly recognition for your contribution, you will be entitled to a free internet "link" from the SDAG Website, as well as a business-card size ad in an upcoming 1999 newsletter. We hope to list our sponsors at the front of the 1999 SDAG Field Trip Volume, and may consider small ads in that volume for an additional contribution.

POSITIONS AVAILABLE:

- STAFF GEOLOGISTS, ENGINEERS & SOIL TECHNICIANS – Southern California Soil & Testing, Inc. (SCST) has positions available for experienced staff geologists, engineers and soil technicians. SCST is trying to fill 2-3 positions with geologic and geotechnical professionals with several years experience towards registration and certification. SCST offers a comprehensive compensation and benefit package, and the opportunity to work on a wide range of projects. Resumes should be forwarded in confidence to SCST, 6280 Riverdale Street, San Diego, CA 92160-0627, Attention: Steve Jensen, or fax to (619) 280-4717.
 - SOIL TECHNICIAN – Est. San Diego geotechnical firm has immediate openings for technicians with 5 years minimum experience in Earthwork Operations. \$16-\$22/hr. commensurate with experience. Send resume to: Robert Prater Associates, 10505 Roselle Street, San Diego, CA 92121. (619) 453-5605.
 - GEOLOGISTS & ENVIRONMENTAL SCIENTISTS – Excellent career opportunity for geologists and environmental scientists in our San Diego Office. Ideal candidates will have 1-6 years of experience in environmental consulting and excellent communication skills. Duties will include overseeing groundwater monitoring activities and supporting storm water reporting activities for nationwide clients. ENVIRONMENTAL SCIENTIST – A minimum of 5 years experience in environmental assessment and compliance. At least 3 years conducting NEPA studies, CEQA experience a plus. Please fax resumes in confidence to Burns & McDonnell at (619) 547-9869 attention: Kim Hendershott. No phone calls please.
 - GEOLOGISTS & ENGINEERS – Ogden Environmental and Energy Services Co., Inc. currently has openings for entry-level to mid-level geologists and engineers. Applicants must have 1 to 5 years experience in the environmental consulting field and must possess strong writing and interpersonal communication skills. Site characterization and remediation experience are desired, along with knowledge of the local regulatory environment. Applicants are encouraged to call Maya Galchenko at (619) 458-9044 or send resume to 5510 Morehouse Drive, San Diego, CA 92121; Fax (619) 458-0943. EOE/AA.
 - Geocon Incorporated is searching for talented people to help handle their ever-increasing workload. Currently openings:
 - ◇ Senior Staff Geotechnical Engineer with 2-4 years experience. BSCE required, MSCE preferred. Registration desirable. Previous experience in land development a plus.
 - ◇ Project Geotechnical Engineer with 3-5 years experience. BSCE required, MSCE preferred. Registration required. Experience in land development a plus.
 - ◇ Engineering Field Technician with 2+ years experience desired but not mandatory. Land development and/or hillside experience a plus.
- Please send resumes to: James E. Likins, President. Geocon Incorporated, 6960 Flanders Drive, San Diego, CA 92121-2974. Fax (619) 558-6159. No phone calls please. Geocon is an equal opportunity employer. **(Geocon, Inc. is an SDAG Corporate Sponsor)**
- GEOTECHNICAL ENGINEERS – Three positions available (listed below). Pay scale commensurate with experience. Contact the headhunter, Fern Thomson, at Apogee (818) 655-9940.
 - ◇ Geotechnical Engineer (Project Manager) for public works projects, land development experience, grading, slope stability, settlement analysis, liquefaction analysis, 5-7 years experience. Los Angeles – Ventura area.
 - ◇ Engineer with 3 years experience, drilling, chain-of-custody, soil samples for underground storage tank projects. Los Angeles area.
 - ◇ Geotechnical Engineer entry level. Need following experience: working in a lab, log borings assist with preparation of geotechnical reports, stability analysis, sediment analysis. Los Angeles area; other locations available.

SDAG NEWSLETTER:

Please submit information, announcements, ads, geo-websites, geo-jokes or suggestions to Barbara Birnbaum (SDAG Secretary), for inclusion in the next newsletter. Any news regarding upcoming events that may be of interest to the Association or news of your business can be submitted. The submittal deadline for the next SDAG newsletter is Wednesday, June 30, 1999.

1999 SDAG FIELD TRIP: *Water Resources Development Projects in Southern California*

The annual SDAG field trip for 1999 is scheduled for the weekend of October 9-10. The trip will visit several major water resources development projects in southern California, with emphasis on the geologic setting of these projects and the engineering required to address geologic problems. Anticipated highlights of the field trip include:

- The Inland Feeder Tunnel along the southern slopes of the San Bernardino Mountains;
- The Seven Oaks Dam project on the Santa Ana River at the foot of the San Bernardino Mountains;
- The Eastside Reservoir project in the "Valley of the Mastodons" near Hemet, Riverside County; and
- The Olivenhain Dam project in the Mt. Israel area southwest of Escondido, San Diego County.

A reservation form for the field trip will be included in a future SDAG newsletter. For additional information, please contact the Field Trip Chairman, Greg Cranham, at (619) 454-0165 or by e-mail: gcranham@hargis.com.

ANNOUNCEMENTS:

Last month's joint meeting with the South Coast Geological Society (SCGS) at El Adobe restaurant in San Juan Capistrano had over 60 attendees and was a big success. Dr. Judith Sheridan, of Mobil Technology Company, gave an interesting talk on Using Microseismicity to Investigate Spatial Variations in Strain along the San Andreas fault Zone, primarily in Southern California.

The Gordon Gastil Endowed Scholarship Fund continues to seek donations of any amount. Gifts of \$ 500.00 or more will be recognized on a plaque to be placed in the remodeled Geology Building. Donations can be sent through SDAG, or contact Pia or Marie, Department of Geological Sciences, SDSU, at (619) 594-5586.

SDAG website: Carolyn Glockhoff continues to update and manage our ever-evolving website. If you haven't yet seen this excellent and useful resource, check it out at: www.znet.com/~sdag. Also, send the URLs of your favorite geology sites to Carolyn (carolion@aznet.net) for listing on the Geologic Links page.

Dinner meeting RSVPs: Thanks to everyone who has been using the website dinner reservation form for our monthly meetings, there are more and more each month! Also, we appreciate how much everyone calls in ahead for the meetings, which helps our planning and greatly reduces the number of walk-ins, thank you!

OTHER MEETINGS, FIELD TRIPS, SHORT COURSES & EVENTS:

South Coast Geological Society (SCGS): The SCGS usually meets on the first Monday of every month, in Orange County. The next meeting will be on Monday, June 14, at the Wind and Sea Restaurant in Dana Point. Gerald Kuhn and Mark Legg are the featured speakers, and the topic is: Neotectonics in the North Coastal Area of San Diego County, CA. To make a reservation for the meeting, contact Leighton & Assoc., Inc. at (949) 250-1421 x570, by noon, Friday June 11, 1999. For more SCGS information, visit their new website at: www.southcoastgeo.org, or contact this year's SCGS President, Gwen Sharp at (714) 378-3231. Additionally, the SCGS 1999 Fall field trip will be September 11-12, to the Bishop-Mammoth Lakes area, and papers are currently being requested for the guidebook.

Earth Science Week 1999: The annual celebration of Earth Science Week will be held October 10-16, 1999. (This is immediately following our SDAG annual field trip.) Check out the Earth Science Week website at www.earthsciweek.org for current information.

COOL WEBSITES OF THE MONTH:

The "cool" websites for this month are:

- A "clickable" faults map for Southern CA at: <http://www.scecdc.scec.org/faultmap.html> . Clicking on a region will take you to an enlarged relief map of the area, with local faults highlighted in a variety of colors, and linked to pages detailing information about these faults. In all of the maps, that segment of the San Andreas fault which is visible will be red, and scales for distances and elevations are given. A few city and highway labels will also appear on the smaller maps. This website is provided by CALTECH Seismological Laboratory, Southern California Earthquake Center, the Times Mirror Foundation, and the USGS.
- SanGis - a SD county geographic & GIS database at: <http://www.sangis.org/> . SanGIS and SANDAG have been sharing geographic information for many years. They are working cooperatively to bring useful interactive mapping applications to the Internet to serve the citizens of the region. This website offers very user-friendly interactive maps with a wide variety of information for all regions of San Diego County (including seismic zones, various county districts, schools, and even parcel maps of your neighborhood!).

Please email future candidates for SDAG cool websites of the month to Barbara Birnbaum, thank you!

HAPPY SUMMER !

A geologist was doing field work in a rural area when he stopped at a farmhouse to get permission to work on the farmer's land. The farmer was friendly, cooperative, and even volunteered that he knew something about the geology of the area.

"How's that?" asked the geologist.

"Well, for instance, that there rock is fifty million and three years old," replied the farmer.

"Hmmm, just how do you know the age so exactly?" asked the bemused geologist.

"Another geologist came through here three years ago, and he told me it was 50,000,000 years old."



Early chemists describe the first dirt molecule

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