



SAN DIEGO ASSOCIATION OF GEOLOGISTS

1997 EXECUTIVE COMMITTEE

PRESIDENT

Tissa Munasinghe
Mira Costa College
One Barnard Dr.
Oceanside, CA 92056
(619) 757-2121 x6412
fax 634-7890

VICE-PRESIDENT

Werner Landry
Development Svcs. Dept.
City of San Diego
1222 1st Ave. ms 401
San Diego, CA 92101
(619) 236-7251

SECRETARY

Lowell Lindsay
Sunbelt Publications
1250 Fayette St.
El Cajon, CA 92020
(619) 258-4905 x103
fax 258-4916

TREASURER

Greg T. Cranham
Hargis + Assocs. Inc.
2223 Avenida de la Playa
La Jolla, CA 92037
(619) 454-0165
fax 454-5839

MEETING ANNOUNCEMENT

Wednesday June 18, 1997

Place: Acapulco Restaurant
8998 Miramar Rd. [Mira Mesa]
578 - 6390

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

Directions: Take Miramar Rd. exit [west] from I-15, or [east] I-805. The restaurant is inside the shopping center in the NE corner of Miramar Rd. and Camino Ruiz [closer to I-15]

Dinner: Mexican Buffet: Steak Picado, Chile Rellenos, Chicken Machaca, Cheese Enchiladas, Rice, Refried Beans, Taco and Tostada Shells and Flour Tortillas, Lettuce, Cheese, Sour Cream, Guacamole, Tomatoes, Chips and Salsa, Flan, Coffee, Tea.

Cost: \$16.00 per person [please make checks payable to SDAG]

Reservation Required by 5:00 p.m. Tuesday June 17, via phone to Lowell Lindsay [258-4911, or 258-4905 x103]. Include Name, Number in party, and Affiliation. Please call to cancel if necessary.

Speaker: Stephen P. Mulqueen, Department of Conservation, Division of Oil and Gas & Geothermal resources.

Stephen Mulqueen is presently employed as an Oil and Gas Engineer with the State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources in Ventura. He earned a Bachelor of Science degree in Geology from Cal Poly, Pomona in 1978. Steve first studied and photographed petroleum seeps as an undergraduate student. His lecture is the result of over 20 years of observing petroleum seeps in and around the oil fields of California.

Title: Petroleum Seeps, A natural phenomenon with historic significance

Abstract: Petroleum seeps have known to exist in both onshore and offshore environments for million of years. They may consist of a variety of substances including crude oil, asphaltum, semisolid bitumen, and natural gas, often occurring with water that may range in quality from fresh water to supersaturated brine. Petroleum follows a complex path of migration from the source rock, being pushed through porous formations toward the surface by a variety of forces.

Petroleum seeps have been analyzed in great detail by geologists since the mid-1800s. Many oil fields throughout the world have been discovered as direct result of the natural occurrence of oil at the surface. Paleontologists have recognized oil seeps as important source of fossils. The Page Museum of La Brea Discoveries in Los Angeles contains millions of fossils excavated from asphaltum deposits in the shallow alluvium of the Los Angeles Basin. Archaeologists have found artifacts which were made in part from asphaltum. This and other factors suggests that the petroleum industry had an early beginning several thousand years ago. Biologists are now looking at petroleum seeps as a unique habitat for plants and animals.

ANNOUNCEMENTS

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TENTATIVE PROGRAMS: Unless otherwise announced, Meeting / programs are every third Wednesday of the of the month.

July 16	Well Design -- Mike Palmer
August 20	Paleo-liquefaction -- Gerry Kuhn
September 20	Annual Picnic - Mission Bay
October 15	Colorado River Geology -- Sue Tanges
October 17-19	Annual Field Trip [Santa Cruz Island]
November 19	Annual Poster Session - Spaghetti Factory
December 17	Paleo Update - Natural History Museum -- Tom Demere

CORPORATE SPONSORS: Sincere thanks to these 1997 Corporate Sponsors who make educational assistance to new generation of geologists possible .

Larry Cann; Joe Corones; Perry and Nona Crampton; Bill Elliot; Jean Ferguson; F&C Drilling; Geocon Inc.; Dr. Blayne Hartman, TEG; Barbara Johnston; H.L. Strickler; Hargis + Associates Inc.; Dr. Anne Sturz; Phil Rosenberg, Tetra Tech EMI; David and Jan Steller; Southland Geotechnical Consultants; Carole Ziegler; Zeiser Kling Consultants, Hugh Robertson, Robertson Geotechnical.

DEL MAR FAIR EXHIBIT CANCELED! (NO VOLUNTEERS NEEDED): Mike Walawender of SDSU has reported that there will not be a Geology Display (SDSU & SDAG) at the DEL MAR FAIR this year. The allocated space is not worth the effort to set up and have someone babysit a booth during this year's fair. Therefore ... anyone who had signed up to possibly volunteer will not be called upon this year. Thank your for your support and watch the SDAG newsletter for next year.
P.S. This means you will have to pay your own way this year!

Modern Theoretical Field Technique Concepts That Work Well

1. How to find the thickness of the Soil Cover at any given point X.

Step 1: Using the magnetic field strength [F] at point X, find the value for I by using the equation given below.

$$F = 2kF_0 \left[\sin I \cos I \sin \beta \log \left\{ \frac{\sqrt{(r_1^2 + Y^2)} + Y}{\sqrt{(r_1^2 + Y^2)} - Y} \times \frac{\sqrt{(r_2^2 + Y^2)} - Y}{\sqrt{(r_2^2 + Y^2)} + Y} \right\} \right. \\ \left. + (\sin^2 I - \cos^2 I \sin^2 \beta) \left\{ \tan^{-1} \left(\frac{Y}{x} \right) - \tan^{-1} \left(\frac{Y}{x-b} \right) \right. \right. \\ \left. \left. - \tan^{-1} \frac{Yz}{x\sqrt{(r_1^2 + Y^2)}} + \tan^{-1} \frac{Yz}{(x-b)\sqrt{(r_3^2 + Y^2)}} \right\} \right]$$

Step 2: Substitute I in the following equation to estimate L .

$$\Delta V = - \frac{I\rho_1}{2\pi(n-1)n(n+1)\ell} \left[1 + n(n+1) \sum_{m=1}^{\infty} \frac{k^m}{[1 + (2mz)^2 / \{2(n-1)\ell^2\}]^{\frac{1}{2}}} + \right. \\ \left. + n(n-1) \sum_{m=1}^{\infty} \frac{k^m}{[1 + (2mz)^2 / \{2(n+1)\ell^2\}]^{\frac{1}{2}}} - \right. \\ \left. - 2(n-1)(n+1) \sum_{m=1}^{\infty} \frac{k^m}{[1 + (2mz/2n\ell)^2]^{\frac{1}{2}}} \right],$$

Step 3: Use a shovel with a handle length equal to L , and dig.

1997 Field Trip-SANTA CRUZ ISLAND

This is a rare opportunity to explore a beautiful, pristine island in the Channel Islands National Park.

Santa Cruz Island is the largest and most diverse of the Channel Islands. It is located 31 km southeast of Ventura, California, about a 2 hour boat ride. Most of the island is owned by the Nature Conservancy (90%), while the east end (10%) is owned by the National Park Service and private interests. The island is now part of the University of California's Natural Reserve System (Santa Cruz Island Reserve).

Since 1965, UCSB has operated a field station on the island to provide researchers with access. This spectacular island consists of about 60,000 acres of rugged mountains, rolling hills and valleys with sheer cliffs to the sea. The island has perennial streams, pine forests, marshes, grass lands; sea caves and a very diverse geologic history. Santa Cruz Island is uninhabited, except for the guides that will assist us and the ranch staff.

Trip Details:

We will be leaving San Diego by charter bus on Friday night, October 17, 1997, boarding at 11:30 pm. The bus can seat only 49 passengers, so sign up early, first-come-first-served. (By the way-the boat and the island accommodations also can only handle 49 people-so we're all on one bus-the party bus).

The bus will arrive at the docks in Ventura, California around 3:30 am Saturday morning, October 18. We will then board the boat and leave for Santa Cruz Island by 4:00 am. We should arrive at the island around 6:00 to 6:30 am. We will then pack our belongings onto waiting vehicles for the 3 mile trip to the research station and our new home for the next two days.

After settling in and getting something to eat, we will depart for the day's tour. Refreshments and lunch will be provided during the day-complements of SDAG (we are bringing all our own food and are responsible for cooking and cleaning-there are no restaurants on the island-any good cooks out there thinking of going?-we need you).

Saturday night is spent at the station, either in bunk house quarters or outside in a tent-your choice (only 32 people can sleep inside, so sign-up early if you don't want to sleep in a tent). Sunday, October 19, we will again go into the field to conclude our geologic reconnaissance of the island. At 4:00 pm we will depart by boat back to Ventura and our waiting bus, which should arrive in San Diego around 10:00 to 11:00 pm.

The cost of the trip is **\$165.00 per person**. This will cover an awesome array of expenses, including charter bus, charter boat, lodging, land transportation, guides, food, guide book, etc... In order to be fair and to get confirmed seating, we will reserve your place when your check for \$165.00 is received. Refunds for the total amount will be issued up to September 1, 1997. After that, no refund, but you can sell your spot to someone else.

Note: The rules for the research station include the following:

"All persons visiting the reserve must be actively engaged in research or instruction. Do not bring children, spouses, or guest sightseers." (Plan accordingly)

Send your checks (made out to SDAG) directly to: Werner Landry, 3230 Goldsmith St., San Diego, CA. 92106. More information to come at our March meeting-see you there.

SUSAN E. TANGES
1465 E. LEXINGTON AVE #7A
EL CAJON, CA. 92019

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1250 Fayette St.
El Cajon, CA 92020

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