



MAY 2001 PROGRAM:

TUNNELING ON THE TREN URBANO – RIO PIEDRAS CONTRACT IN PUERTO RICO, SAN JUAN, PUERTO RICO by Victor S. Romero, Jacobs Associates

Meeting Details:

- Tuesday, May 8th
- Sinbad's Restaurant, San Francisco
- 6:00pm – Cocktail Hour
- 7:00pm – Dinner
- 8:00pm – Program Talk
- \$30 members, students ½ off who call Dr. Williams, 408-924-5050.
- **Reservations due by Friday, May 4th. See back cover for RSVP form.**

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The Río Piedras Contract of the Tren Urbano in Puerto Rico is a design-build rail transit project that includes three different tunneling methods. One portion included twin tunnels driven with an Earth Pressure Balance Tunnel Boring Machine and lined with “one-pass” precast concrete segments. Another section has four short tunnel drives at a rail turnout that was constructed with an initial support of shotcrete and lattice girders (i.e., the New Austrian Tunneling Method), followed by a waterproofing membrane and a cast in place lining. The most complex construction was in the Río Piedras Station, which was built by the stacked drift method, utilizing 15 individual tunnel drifts that were sequentially excavated and concreted. The drifts form an arch that is 19 m wide by 16 m high. This structure was excavated with less than 5 m of cover under occupied historic buildings.

All of the tunnels were excavated in unstable, weak alluvial soils with deep weathering profiles that overlie karstic bedrock features. This presentation will provide an overview of the local geology and geotechnical characterization for the project, as well as describe design methods and construction performance of the different tunnels, which was monitored by an extensive geotechnical instrumentation program.



SPEAKER'S BIOGRAPHY

Victor S. Romero holds a B.S. in Geological Engineering from the Colorado School of Mines and a M.S. in Geotechnical Engineering from the University of California at Berkeley. As an Associate with Jacobs Associates in San Francisco, he has over 10 years experience in the design and construction of tunnels in soil and rock, with substantial responsibilities on projects in the water, wastewater, and transit industries. His design experience includes shafts, pipe jacking, portal stabilization, slope stability, pressure tunnels, microtunneling, soft ground tunneling methods, the New Austrian Tunneling Method (NATM), initial tunnel support, final tunnel linings, grouting, and boreability (TBM) assessment. He has served as Project Manager or Project Engineer on several tunneling projects that required production of contract documents (drawings, specifications and geotechnical baseline reports), and has coordinated work on multi-discipline teams. He is a registered Civil Engineer (P.E.) in California, Massachusetts, Utah, Washington and Puerto Rico,

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The AEG San Francisco Section Newsletter is a monthly publication of the San Francisco Section of the Association of Engineering Geologists.

Submittals:

Deadline is the 20th of each month for the following issue. Contact Gretchen Mora by email (aegnews@visto.com) for submittal. All submittals are subject to editing for space. Job ads are free if brief.

Address changes: Please submit to Section Secretary, Anne Rosinski at 415-904-7730.

Advertisements:

The newsletter's circulation is about 360 within northern California. Use these low rates to expand your market:

	<u>Monthly</u>
Business card	\$ 15
1/4 page	\$ 30
1/2 page	\$ 60

Sponsorship:

Become a Section Corporate Sponsor! Donate to the Section and receive free advertisement each month, recognition for your donation at Section Meetings, and more! For more info on Section Sponsorship, Contact Jason Preece.

Speaker's Biography (continued)

and is a Certified Engineering Geologist in California.

On the Rio Piedras Contract, Mr. Romero was Project Manager for tunnel design. During construction, he assumed the role of Design Resident Engineer, responsible for all aspects of subway design during construction, including tunnels, cut-and-cover structures, mechanical, electrical, and architectural work.

FIELD TRIP ANNOUNCEMENT

Dear Section Members:

As the Field Trip Chair for the San Francisco section of AEG, I have two major announcements. The first is that the first field trip of 2001 has been scheduled for Saturday, June 2nd. The trip will be to the Caldecott Tunnel and is described below. The second announcement is that we have launched a new field trips page on the section website. The page will provide information for upcoming field trips, photographs from previous field trips, and my contact information. Please visit the new page at <http://www.aegsf.org/fieldtrips.html>.

Upcoming Field Trip: History and Geology of the Caldecott Tunnel

Trip Details

- When:** Saturday, June 2nd, 9:00am
- Length:** Approximately 3.5 hours
- Where:** Caldecott Tunnel (meet at tunnel operations building – see directions below or on web page)
- Parking:** Available on service roads – please carpool if at all possible!!
- Cost:** \$10/adults and \$5/kids – payable at the door (no surcharge for non-members)
- RSVP Deadline: Friday, May 25th** (use enrollment form below or on web page)

Join us on a behind the scenes tour of the Caldecott Tunnel led by CalTrans personnel. We will first hear the details of the tunnel construction as well as see a short film. Afterwards, we will visit the monitoring room and see the technology involved in operating the tunnel. We will also walk through the air ducts with the flowing traffic below. The tour leader, Ray Mailhot, has worked for CalTrans for over 30 years and is filled with tunnel lore. Grant Wilcox (CalTrans geologist and AEG SF section member) will provide input about the tunnel geology.

The tour apparently takes approximately 3.5 hours and is set up for a wide audience (family members, including kids, are welcome!). We are encouraging everybody to attend. Space is limited to 50 people. If the response is high, a second tour starting at 1:00 pm may be added. Please sign up for the trip by **Friday, May 25th**. **Email Drew at north35west@earthlink.net, or fax or mail the registration form below.**

Donuts, coffee, and other refreshments will be served at the start of the tour. For more information, visit the new field trip page on the section website. Please contact me should you have questions.

DREW KENNEDY, Field Trip Chair

REGISTRATION FORM

Please register by sending in a completed registration form to: Drew Kennedy, Field Trip Chair, 312 Torino Dr., Apt. 1, San Carlos, CA 94070. Fax: 650-551-1210, or email the information.

Name: _____

Number of People in Party: _____ Adults _____ Kids _____ Total

Daytime Phone Number: _____

Evening Phone Number: _____

Email: _____ Fax: _____

DIRECTIONS TO CALDECOTT FIELD TRIP

Directions from west side of Oakland Hills

Highway 24 east. Exit on Old Tunnel Road (last exit before entering tunnel). At stop sign, drive straight through intersection and up hill. The street will end in a court. Continue on service road marked by gate and sign marked "authorized vehicles only." Park on the service road near the tunnel operations building.

Directions from east side of Oakland Hills

Highway 24 west. Stay in right lane and drive through right tunnel bore. Do not drive through the center tunnel bore. Exit on Tunnel Road (first exit immediately after exiting tunnel). Turn right onto frontage road and drive towards Parkview Apartments. Drive through double gates with signs marked "authorized vehicles only." Park on the service road near the tunnel operations building.

MAY SECTION MEETING DETAILS

The May Section Meeting will be held at Sinbad's Restaurant, located at Pier 2 on the Embarcadero in San Francisco. Sinbad's is located just south of the Ferry Building on the Embarcadero. Valet parking is available. The Embarcadero BART station is a close 5-minute walk.

Please make your reservations by Friday, May 4th! See the back cover for the RSVP form.

APRIL SECTION MEETING NOTES

There was a small turnout (just over 20 people) for the April Section meeting at Mariner's Point in Foster City. Thanks to In-Situ Inc. for sponsoring the meeting and thanks to Eric Strahan for telling us about In-Situ.

Jeff Schuyler of Applied Geomechanics presented our program, "Automated Slope Monitoring in Taiwan". It was a wonderful presentation with great photos of Taiwan and the slope-monitoring project.

Following the recent cancellation of a nuclear power plant in Taiwan, the government has proposed raising the existing NanHwa dam in Tainan, Taiwan, in order to generate more power. The NanHwa dam is a semicircular dam that also works as a spillway.

In December 2000, Applied Geomechanics installed a real-time slope monitoring system on a steep dip slope over the reservoir. Holes up to 150' deep were drilled in 4 locations on the slope. Four monitoring stations were set up. Each station has an electric in-place inclinometer and a piezometer with continuous automated monitoring, radio telemetry to a computer (PC), and automatic alarm notification at determined thresholds. Data from the inclinometers/piezometers reaches the computers hourly; sampling is increased automatically if threshold levels are reached.

CORINNE STEWART, Section Treasurer

UPCOMING MEETINGS

If you would like to speak at a Section Meeting, or know someone who would be a good speaker, contact Charlie Kissick, Vice-Chair, at 650-726-7198.

CCGO TESTIFIES AT IBC HEARINGS

The California Council of Geoscience Organizations (CCGO) successfully testified in support of the addition of grading provisions to the International Building Code at hearings in Portland, Oregon, on March 26, 2001. CCGO joined proponents from Utah, Colorado, Minnesota, and other locations in advocating the addition of basic requirements for grading plans, grading permits, maximum gradients of cut and fill slopes, benching of fills, terracing and drainage of cut and fill slopes, and minimum setbacks from the crests and toes of cut and fill slopes.

The new grading provisions will be an appendix to the code, meaning that individual jurisdictions can choose to adopt the grading provisions, or not, depending on their specific needs.

The addition of grading provisions to the International Building Code is an important step toward ensuring the health, safety, and welfare of the public where stability of graded slopes is concerned. The new provisions, however, are a minimum. CCGO hopes to propose additional changes for the next code cycle to strengthen geologic aspects of the grading provisions.

If you would like to join CCGO's Code Development Committee, please contact Betsy Mathieson at emathieson@exponent.com, or (510) 208-2011. For further information on the California Council of Geoscience Organizations, visit our web site, <http://www.ccgoo.org>.

CCGO BOARD MEETINGS: To facilitate communication, we have quarterly board meetings. The meetings move between Los Angeles, San Francisco and Sacramento areas. The following schedule has been established: May 5, 2001 in San Francisco Bay area; August 4, 2001 in Sacramento; and contrary to earlier announcements, the last meeting will be October 27, 2001 in the San Francisco Bay Area.



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NOMINATIONS FOR AEG AWARDS EXTENDED

The Awards Committee is requesting your help in announcing that nominations are now being accepted for 2001. The Awards Committee considers nominations for the following awards (for more complete information, please consult your Directory):

1. Douglas R. Piteau Outstanding Young Member Award – This award is presented to a Member or Associate Member who is age 35 or under, and has excelled in one or more of the following 3 areas: technical accomplishment, service to the Association, and service to the engineering geology profession.
2. Claire P. Holdredge Award – This award is presented for a publication by a Member(s) within the past 5 years that is judged to be an outstanding contribution to the engineering geology profession.
3. Floyd T. Johnson Service Award – This award is presented to a Member for outstanding active and faithful service to the Association over a minimum of 9 years. Contemporary Board members are not eligible until 1 year after leaving office. Nominations must be validated via endorsement by 3 Members having different Section affiliations. This award is not necessarily conferred annually.

The deadline for nominations to be considered for awards in 2001 has been extended to **May 30, 2001**. Please send nominations to Bill Cole, AEG Awards Committee Manager, c/o Cotton, Shires and Associates, Inc., 330 Village Lane, Los Gatos, CA 95030 (or to bcole@cottonshires.com).

DO YOU WANT MORE SHORT COURSES?!

I would appreciate ideas, suggestions, and requests for future short courses. Volunteer instructors and venues would be really nice. Examples of what has worked so far: Sandy Figuers volunteered to teach a contouring class and Chris Alger volunteered his employer's offices as a venue – a belated thanks to both. Charlie Kissick requested a class on expansive soils; the class was taught by one of our more enlightened geotechnical engineers, Dick Volpe, at the Santa Clara Valley Water District offices. Dick also helped arrange for the facilities. Thanks, Dick. Please forward all suggestions for or offers to teach/lead interesting short courses to: esolo@earthlink.net.

ERNEST SOLOMON, Short Course Chair

Thank You
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MEMBER NEWS

Several members have recently joined new companies. Among them is **Dennis Maslonkowski**, now a *Strategic Consultant* with CH2M Hill in Oakland. That sounds pretty dangerous so don't make Dennis angry! **Dan Wynne** is now heading up the PSI offices in Oakland (which have recently moved as well), and **Pat Drumm** will be opening an East Bay office of Gilpin Geosciences this spring.

We hear that **Peter Anderson** of Anderson Consulting (Morgan Hill) has finally recovered from his broken hip. Be sure to stay off ladders in the future, Peter, or else hire a professional painter!

At the last Section meeting, as we went around the room introducing ourselves, the members and guests attending also gave the year they joined AEG. It seems that we had at least 5 members with 156 years of membership between them!! A special recognition should go to those people: **Seena Hoose** (22 years); **Tom Iwamura** (30+ years); **Leo Alvarez** (32 years); **Ernie Solomon** (36 years) and **Bob Tepel** (36 years). Although some may have forgotten the exact date they joined, they are all members who have contributed significantly to the organization and continue to add their wealth of knowledge and give freely of their time. Thank you all!

If you have been a member of AEG for 20 years or more, please send a note to the Newsletter Editor (aegnews@visto.com). You deserve some recognition, too!

REPORT ON WASHINGTON QUAKE AVAILABLE

Courtesy of Prof. Jon Bray at U.C. Berkeley, for those who are interested...

The Nisqually earthquake of February 28, 2001 (Mw = 6.8) produced strong ground shaking over a wide area and caused significant damage in parts of Northwestern Washington. Damage has been preliminarily estimated at \$2 billion. Dozens of buildings have been red-tagged, and hundreds more have been damaged. Observations of liquefaction were widespread in parts of Olympia and South Seattle, and several significant lateral spreads, embankment slides, and landslides occurred.

A web report is now available that documents some of the geotechnical aspects of the Nisqually earthquake in the Olympia, South Seattle, and Tacoma areas. This field reconnaissance was conducted by a group of researchers and consultants sponsored by the National Science Foundation and the Pacific Earthquake Engineering Research Center. The report is at this address:
<http://peer.berkeley.edu/nisqually/geotech/>

Additionally information on this earthquake can be found at the PEER website at: <http://peer.berkeley.edu/nisqually>

*Let all thy joys be as the month of May,
And all thy days be as a marriage day:
Let sorrow, sickness and a troubled mind
Be stranger to thee.*

- Frances Quarles (1592-1644)

NCGS MAY 19-20, 2001 FIELD TRIP

"The Golden B.E.A.R. * Tour 2001 "

***(Blueschists, Eclogites, Amphibolites, Refreshments)**

Led by Neotectonics Expert, Consultant, and Beer Aficionado **Dr. John Wakabayashi**

This trip two-day trip will feature the most beautiful metamorphic rocks in California, the blueschists, eclogites, and amphibolites of the Franciscan Complex. These rocks have a fascinating history and have helped make the Franciscan one of the world's best-known rock units.

The rocks viewed on this trip are so gorgeous that they can be appreciated by the geologist and non-geologist alike. For those that believe that no Franciscan geology puzzle is complete without a pint to help solve it, we offer stops at some of the world's most acclaimed small breweries. These brewpubs are chosen for their fine (and reasonably priced) food as well as their award-winning brews, so these establishments can be appreciated by those who wish to pass on the brew as well. We will camp overnight at Spring Lake Campground, Santa Rosa. Please bring your own sleeping bag and bedding/tent. Those who wish to stay at a motel in the area must make their own arrangements. This trip will use a bus so that no one will have to drive. Space is limited and available on a first come-first serve basis! SIGN-UP TODAY!

Date: Saturday-Sunday, May 19-20, 2001

Departure: 7:30 a.m. SHARP from the Chevron, Concord, parking lot. (see directions below)

OR

A second meeting place will be arranged for attendees living in the north San Francisco Bay Area.

Directions: Exit I-680 in Concord at Willow Pass Road. Go east one block to the stoplight at Diamond Blvd. Turn left onto Diamond Blvd. and drive north past the entrance to the Willows Shopping Center. Turn left into the Chevron parking lot and park in the lot assigned to the NCGS.

Cost: **\$60 per person.** Price includes bus transportation, breakfast pastries, camping fee, Saturday night barbecue, and guidebook.

PLEASE NOTE: Attendees are responsible for their own lunch and beverage costs both days!!

The Golden B.E.A.R. Tour 2001 Itinerary

SATURDAY

- Stop 1: Ring Mountain, Tiburon Peninsula.
- Stop 2: Marin Brewing Company, Larkspur.
- Stop 3: Blueschist facies metagreywacke, Novato.
- Stop 4: Bear Republic Brewing Company, Healdsburg.
- Stop 5: Skaggs Springs schist near Lake Sonoma.

Camp Site: Spring Lake Campground, Santa Rosa.

SUNDAY

- Stop 1: Jenner.
- Stop 2: Blueschist facies metabasalt, Occidental, California.
- Stop 3 (lunch): Powerhouse Brewing Company, Sebastopol.
- Stop 4: Moylan's, Novato.
- Stop 5 (optional). Moeser Lane, El Cerrito.

REGISTRATION FORM

Name _____

Street/City/Zip _____

Phone (day) _____

Phone (evening) _____

E-mail or Fax No. _____

Will you meet the group at an alternate site in the north San Francisco Bay Area? _____

Please write a check to the NCGS and mail it with the completed registration form to: **Tridib Guha, 5016 Gloucester Lane, Martinez, CA. 94553-4373**

If you have any questions or need additional information, call Tridib at (925) 363-1999 or by e-mail at aars@ccnet.com.

AWG BERKELEY HILLS WALKING TOUR

On Saturday, May 12, 2001, Sue Hirschfeld and Lin Marphy of the Association for Women Geoscientists will be leading a guided walking tour for the SF Chapter of AWG to several Berkeley Parks and part of the Hayward Fault.

Those interested should meet at 10:00am at Indian Rock Park (parking is limited, so carpooling up from Marin Circle is encouraged). Please bring lunches and something to drink. Four or five parks will be included (driving to the last two). A quick stop of a part of the Hayward Fault may be included later in the day.

Questions/RSVPs should be sent to Sue Hirschfeld and/or Lin Marphy at eqdoc@ix.netcom.com, or call 510-886-8417.

SPONSORS SOUGHT

We are still in need of sponsors for the Engineering Geology Practice in Northern California. The Sacramento and San Francisco Sections are looking for sponsors to help with the publication of this volume. Please contact Bob Anderson (916-654-3836 or banderson@energy.state.ca.us) to help fund the cost of this joint volume.

**DEADLINE FOR THE
JUNE ISSUE is
MAY 20TH!!**

SOUTHERN CALIFORNIA, ARIZONA, NEVADA, AND OREGON RATTLED BY 1906 AFTERSHOCKS

U.S.G.S. News Release

Following the great 1906 San Francisco earthquake, a large number of distant aftershocks or triggered earthquakes occurred much farther away from the fault than previously realized, according to scientists at the U.S. Geological Survey.

Speaking at the annual meeting of the Seismological Society of America in San Francisco in April, Aron Meltzner and David Wald, researchers at Caltech and the USGS in Pasadena, said aftershocks which took place within the first two days after the San Francisco mainshock, rattled areas of southern California, western Arizona, western Nevada and south-central Oregon. The largest of these events were a magnitude 6.1 earthquake near the Salton Sea, in California's Imperial Valley, and a magnitude 5.0 earthquake under or near Santa Monica Bay.

Traditionally, scientists have thought that earthquakes do not trigger other earthquakes more than one rupture length away from the fault rupture. That is, if the part of the fault that slipped in the 1906 earthquake was 250 miles long, the earthquake would not trigger other earthquakes more than 250 miles away from that part of the fault. However, after the 1992 Landers earthquake triggered earthquakes near Mammoth Lakes, California, Yucca Mountain, Nevada, and in Yellowstone National Park, the scientific community became more aware of these "distant aftershocks." Looking back in time, Meltzner and Wald wanted to see if the same phenomenon took place after 1906.

"What we found," said Meltzner, "is that earthquakes started popping up all over southern California and in Arizona and Oregon that were well beyond 250 miles from the fault. That doesn't include two earthquakes east of Reno, Nevada that were barely within the 250-mile radius, and countless others that may have taken place in remote locations where no one was around to report them. These distant aftershocks started within an hour of the San Francisco earthquake and continued for about a day and a half."

Meltzner and Wald rule out that the earthquakes in southern California, Arizona, and Oregon which were all more than 250 miles from the fault occurred at about the same time by coincidence. "Not only is it highly unusual for so many earthquakes in different places to cluster together like that in time," explained Meltzner, "but some of them occurred in places that rarely experience earthquakes." They calculated the odds at about 4 billion to one that all the so-called distant aftershocks were unrelated and happened within the same two-day period by chance alone. "If it all happened by chance, we could expect something like that to occur once every 20 million years," added Meltzner. "Obviously, since it happened in the 48-hour period immediately following the 1906 earthquake, it wasn't just chance."

Prior to the current work of Meltzner and Wald, no one had looked systematically at the aftershocks of the 1906 earthquake, and very basic questions, such as when or where the largest aftershocks occurred, or how large they were could not be answered. But for an earthquake as large as the San Francisco event, which had a magnitude of 7.8, aftershocks as large as the 1994 Northridge

earthquake or even the 1989 Loma Prieta earthquake are possible, and they can be extremely damaging in their own right, so such questions cannot be ignored.

Part of the reason, Meltzner said, that the 1906 aftershocks remained unstudied up to this point is that seismic instruments at the time were very primitive, and they were few and far between. The recordings from those instruments are only helpful in the largest earthquakes, and even then they are not without shortcomings. Meltzner and Wald solved this problem by turning instead to descriptive historic accounts from newspaper articles, personal diaries, and letters written by people who felt and described each aftershock, to determine how strong the shaking was at different locations during each aftershock. By knowing the intensity of shaking at a variety of locations, Meltzner and Wald were able to estimate the magnitude and location of each aftershock.

Other findings show that the largest aftershocks overall took place off the Humboldt County coast. For their study, Meltzner and Wald looked at aftershocks which took place from April 18, 1906, the date of the San Francisco earthquake, to the end of December 1907. Within that time period, the largest aftershocks were a magnitude 6.7 earthquake 60 miles west of Eureka, Calif., five days after the San Francisco earthquake, and a magnitude 6.5 earthquake 40 miles west of Cape Mendocino, Calif., 16 months later, in August 1907. Other than the magnitude 6.1 earthquake near the Salton Sea on April 18, 1906, the next largest aftershock, and the largest aftershock near the San Francisco Bay Area, was a magnitude 5.6 earthquake in May 1906, near San Juan Bautista. Only one other Bay Area aftershock, a magnitude 5.1 earthquake near Redwood City in June 1907, exceeded magnitude 5.0.

Altogether, this study shows that although the 1906 San Francisco earthquake took place on the San Andreas fault, the largest aftershocks occurred tens of miles to several hundred miles away from the fault. This finding has important ramifications for our understanding of earthquake triggering and the behavior of aftershocks following a large earthquake. "Having a good statistical basis from what has happened in the past," noted Wald, "is the best means for forecasting aftershocks following large San Andreas type earthquakes in the future."

The USGS serves the nation by providing reliable scientific information to: describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

For those interested, figures associated with this press release can be found at:

<http://www.gps.caltech.edu/~meltzner/ssa2001/pressrelease-fig1.pdf>

and

<http://www.gps.caltech.edu/~meltzner/ssa2001/pressrelease-fig2.pdf>.

ANNOUNCEMENTS

The San Francisco Section is looking for a volunteer to videotape our monthly Section Meeting Program Talks. Cost of the videotape will be reimbursed, but we need someone who enjoys videotaping and has a camera! Please contact Jason Preece if interested (925-933-2900 or preeceje@cdm.com).

EMPLOYMENT

ENTRY-LEVEL ENGINEER

BASELINE Environmental Consulting is a 16-person firm with offices in San Francisco, Petaluma, and Emeryville. Our work includes soil and groundwater investigations/remediation, hazardous materials management, and CEQA/NEPA work. We have a full-time opening for an entry-level engineer in our Emeryville office. The work would include Phase I and II investigations, data management, statistics, field work, and CEQA/NEPA impact analyses. Must have strong writing and communication skills.

Submit resume to Yane Nordhav, BASELINE, 5900 Hollis Street, Suite D, Emeryville, CA 94608 or yane@baseline-env.com. EOE.

GEOLOGIST IN THE PARK POSITIONS

(Application deadline June 1, 2001)

AWG is pleased to announce three Geologist in the Parks positions for 2001. These positions were chosen for the high levels of expertise required, and for the diverse scientific opportunities they offered. Full position descriptions, qualifications and park information may be downloaded from the AWG website (<http://www.awg.org/about/gip.html>). See also the NPS website (<http://www2.nature.nps.gov/grd/geojob/index.htm>) for additional information. The position descriptions each indicate a park contact; however applicants are requested to read the full position descriptions and the NPS website FAQs first, then, if necessary, to contact the parks with any specific questions about the projects. Note - membership in AWG is required in order to apply for the three positions being offered through AWG. Membership forms may be found on the AWG website.

OTHER MEETINGS

NCGS MEETING

When: May 30, 2001, 6:30 p.m. refreshments; 7:00 p.m. talk
Where: Masonic Auditorium, 9 Altarinda Road, Orinda, CA
Who: Dave Mustart, San Francisco State University
Topic: Hydrothermal Pipes in Six Granitic Plutons in California: Evidence for Evolution and Migration of a Magmatic Volatile Phase
Cost: \$5.00
RSVP: dday@nrmc.com (Dan Day)

CCGO BOARD MEETING (open to all interested parties)

When: Saturday, May 5, 2001, 9:30 AM - 2:30 PM
Where: Betsy Mathieson's office, Exponent Failure Analysis Associates, 1970 Broadway, Suite 250 Oakland, CA 94612 Tel: (510) 208-2011
RSVP to: Jim Jacobs, (510) 232-2728 or augerpro@jps.net

GRA, the Northern California Fuel Oxygenates Committee, and the Santa Clara Valley Water District Present:

CHARACTERIZATION & REMEDIATION OF RECALCITRANT & EMERGING CONTAMINANTS

Presented in association with the Association of Engineering Geologists, the International Association of Hydrogeologists, the Water Education Foundation, the Professional Environmental Marketing Association, the Natural Resources Section of the California State Bar, & the Association of California Water Agencies.

When: June 14 & 15, 2001

Where: Wyndham Hotel, 1350 North 1st St., San Jose

Registration is Required. Attendance is limited to 200 persons. Please go to the GRA website (at <http://www.grac.org>) to download a registration form and/or hotel information.

Volunteers are still being sought to fill the position of Newsletter Editor and/or Website Manager for the 2001-2002 AEG year (starting in August). Please contact Gretchen Mora (aegnews@visto.com) if you are interested!

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Gretchen Mora – Newsletter Editor
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REMEMBER MOTHER'S DAY!



AEG April Newsletter
MAY 8 – Monthly Section Meeting
Sinbad's, Pier 2, Embarcadero, San Francisco

CHECK OUT THE AEG SF SECTION WEBSITE AT WWW.AEGSF.ORG!

RESERVATION FORM – May 8, 2001 AEG Dinner Meeting, 6pm
Sinbad's, Embarcadero, San Francisco

Please Fax your reservation to arrive before noon, Friday, May 4th

Fax to Corinne Stewart, c/o Pacific Geotechnical Engineering (408-779-6879) - Check or Cash at the door – Do not mail or fax payment.

Dinner and Meeting Cost: \$30 – members or spouses \$15 – student members \$32 – others

NAME _____ COMPANY _____

TELEPHONE NO. _____ NO. OF PEOPLE _____

PERMANENT RESERVATION FORM

AEG San Francisco Section Monthly Dinner Meetings are usually but not always on the 2nd Tuesday of each month.

I will attend and make payment for each meeting. If I am unable to attend I will fax or mail a cancellation notice to

Corinne Stewart (fax: 408-779-6879) by noon, the Friday before the meeting.

NAME _____ TELEPHONE NO. _____

BILLING ADDRESS _____

SIGNATURE _____ DATE _____

Dinner Costs are normally but not always: \$30 – members or spouses \$15 – student members \$32 – others
