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Next AEG SF Section Meeting on Tuesday, August 8, 2000, 6 pm, Spenger's Restaurant, Berkeley

This meeting is the 2nd Tuesday of the month and will be at Spenger's Restaurant at 1919 Fourth Street in Berkeley. Dinner and meeting cost $28 for members, ½ price for student members who call Dr. John Williams (408-924-5050) by noon, August 4. **Please make all reservations by noon, Friday, August 4.**

Program: DISPOSAL OF TAILINGS IN PERMAFROST: A PROMISING RECLAMATION OPTION, by Joanna L. Meldrum, Failure Analysis Associates, Menlo Park

Acid generating nickel-copper mine tailings have been an environmental concern to residents of Rankin Inlet, Nunavut, Canada since mine closure in 1962. Tailings reclamation, performed in 1994, involved burial in permafrost. To determine if encapsulation in permafrost maintains sulphide mine tailings in a chemically inert state, test columns charged with unsaturated tailings from Rankin Inlet were studied at temperatures above and below 0^{o}C. Oxygen consumption, temperature and time domain reflectometry measurements were used to quantify the oxidation rate, the temperature change due to oxidation of sulphides and the unfrozen moisture content, respectively, throughout the columns. Results indicate significant oxidation of the Rankin Inlet tailings occurs at 30^{o}C, and that at lower temperatures the rate of oxidation is substantially reduced. An increase in temperature observed in the tailings and not in a control column filled with silt at 0^{o}C and -2^{o}C is thought to be due to minor oxidation of sulphides. At -10^{o}C, oxygen consumption, heat generation due to oxidation and unfrozen water are negligible. The results of this study confirm that tailings disposal in permafrost is a promising method of minimizing acidic drainage at mines in the continuous permafrost zone.

SPEAKER'S BIOGRAPHY

Ms. Joanna Meldrum is a Geotechnical Engineer based in Exponent's Menlo Park, California, office. She performs geotechnical, environmental and engineering geology site investigations and analyses. Ms. Meldrum has performed subsurface investigations with the Geological Survey of Canada. Her experience includes drilling, core logging, and various geophysical surveys. Her academic research has included studies of the geochemical properties of mine wastes encapsulated in permafrost as well as work in the geotechnical, geochemical and geophysical analyses of soils involved in landslides.

Ms. Meldrum received her Bachelors and Masters degrees in Geological and Environmental Engineering from Queen's University in Canada. She received the Canadian Geotechnical Society Award for Undergraduate Thesis in 1996, and the Canadian Geotechnical Society Award for Graduate Student Paper in 1998.

MEETING DETAILS – August 8, Spenger's Restaurant, 1919 Fourth Street, Berkeley

6pm: No-host bar, sign-in and dinner payments
7pm: Dinner and announcements
8pm: Technical program
Costs: $28 per person for members and spouses
$14 for student members who call Dr. John Williams at 408-924-5050 before noon, August 8h.
$30 for non-members

Check or cash due at the door. Please do not mail payment. Please fax or mail the reservation form on the back page to Treasurer Dennis Maslonkowski, to arrive by noon, **Friday, August 4**.
Fax: 510-233-3204
Mail: c/o ARCADIS Geraghty & Miller
1050 Marina Way South
Richmond, CA 94804.

Please make a reservation if you plan on attending.

The AEG San Francisco Section Newsletter is a monthly publication of the San Francisco Section of the Association of Engineering Geologists. Submittal deadline is the 20th of each month for the following issue. Contact Gretchen Mora by email (aegnews@visto.com) or by phone (510-353-0320) for submittal. Job announcements are free if brief.

Address changes: Please submit to Section Secretary Corinne Stewart
By phone (408-629-7801).

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

	Yearly	Monthly
Business card	$ 110	$ 10
1/4 page	$ 350	$ 40
1/2 page	$ 600	$ 70

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SPONSORS SOUGHT

Sponsors are still needed for the publication of "Engineering Geology Practice in Northern California." Please contact Dennis Maslonkowski (510-233-3200) to donate to this excellent volume.

CHAIR'S MESSAGE

We're off to a good summer. We had over 16 walk-ins at the last meeting, for a total attendance of 46. Not bad for July. I think the kudos can go to our speaker, Scott Kieffer, for an excellent talk.

Last month, we had a letter from Tridib Guha concerning an issue with the Board of Registration for Geologists and Geophysicists. At last month's Section Meeting, Seena Hoose provided a response. I have paraphrased the response to provide the members with a better understanding of how the Board of Registration works.

We will have the transition from our present section officers to the new officers at the time of the Annual Meeting. We usually receive a small percentage of votes compared to the total membership. Please send in your ballots for the officers.

The Millenium Volume is still in the works. The volume will most likely be available in the first quarter of 2001.

GARY PISCHKE

There will be NO SEPTEMBER NEWSLETTER OR MEETING due to the AEG 2000 National Meeting.

The next publication date of the AEG Newsletter will be October 2000. The deadline for submittals to the October Newsletter is September 20th!

JULY SECTION MEETING NOTES

Attendance was great for the July Section meeting at Sinbad's. Though there were only about 30 reservations made, over 45 people, including 7 students (pretty impressive since it's summer break!) showed up to hear Scott Kieffer's presentation on behavior of rock in slopes.

Dr. Kieffer presented the program "The Behavior of Rock in Slopes". He began by explaining that textbooks tend to oversimplify types of rock failures as planar sliding, wedge sliding or toppling, but, in reality, there are many types of rock failures (far too many to fit in this space!). Rock failure is often compared to soil-type slumping; however, the back rotation along a circular shear surface that occurs in soil slumping is not likely to happen in rock due to its brittle nature and other discontinuities.

Planar sliding requires topographic release and discontinuities in the rock. Three intersecting planes are needed for rock siding, one of these planes being the slide plane. For rock toppling to occur, the structure in the rock must form overhanging columns. Toppling creates V-shaped notches between blocks and forms reverse scarps. Sheet failure involves slabs of rock bound by exfoliation surfaces. It is a very brittle failure that occurs with no warning. Half Dome in

July Section Meeting Notes (continued)

Yosemite is a great example of sheet failure. In addition to other failure methods, Dr. Kieffer also mentioned column bucking, which occurs in a defect in a column of vertically jointed rock, and block torsion, which occurs when sliding cannot.

The principles favoring different modes of failure are:

1. Removable blocks are formed by the intersections of existing discontinuities and excavations.
2. Adversely oriented blocks move out 1st, leaving a new space.
3. Sliding along an adversely oriented rock face or block edge will invariably occur if the kinematic conditions for such sliding are met.
4. If sliding motion is prevented, rotational failures are favored.

Rock slumping creates a scarp, bench, and toe that resembles soil slumping. It occurs where joints dip more steeply than the failure plane (slide plane). Blocks rotate back to form A-frame voids. Soil mechanics calculations (using a circular failure plane) used to evaluate rock slumps yield a higher friction coefficient ratio than an evaluation using a non-circular failure surface. A back calculation of any failure can only be used for a forward analysis of the same failure type.

For more information on behavior of rock in slopes, check out the ASCE Journal of Geotechnical and Geoenvironmental Engineering, August 2000.

CORINNE STEWART

RESPONSE TO EDITORIAL

In response to last month's editorial letter by Tridib Guha, Seena Hoose spoke for a few moments at the July Section Meeting. Gary Pischke has paraphrased her comments for the readership. –Ed.

We understand that Mr. Guha has a concern with the Board of Registration for Geologists and Geophysicists. As Seena Hoose stated at July's Section Meeting, the Board has procedures for responding to cases that are considered closed and may be reopened. The Board works through the Executive Officer and his staff to evaluate each case. The Executive Officer then presents the case to the Board for their decision. The Geologists and Geophysicists Act defines how the Board will respond to each case. The AEG cannot provide more of a response. We are not the organization to evaluate these cases. We may provide a sounding board with the newsletter, but the response to Mr. Guha's letter should properly come from the Executive Officer of the Board.

GARY PISCHKE

UPCOMING MEETINGS

If you are interested in speaking at an upcoming Section Meeting, or know someone who would give a great talk, please call Jason Preece, Section Vice-Chair, at 925-933-2900.

NEWS FROM THE AEG•GRA 2000 TEAM

What's happening as we move closer to AEG•GRA 2000? Things are in a state of flux, as they say. The multi-author book-signing event may evolve into a series of signing opportunities throughout the meeting, rather than be an Icebreaker event.

We are into the background work that makes the meeting go: contract negotiations for ground transportation (estimated at $15k – 20k), developing the printing contract for the 120-page field trip guidebook ($4.5k or so), dealing with the hotel's catering department for food and beverage services, and negotiating for audio-visual services. Now, there's an expensive item. Current plans are to have each of the five presentation rooms equipped with one overhead projector, two 35mm slide projectors, two screens, and one LCD projector. In addition, of course, the speaker prep room will have a 35mm slide box, and a sample LCD set-up for electronics practice. A major part of your meeting registration fee is dedicated to supporting the A-V demands of the meeting.

With nearly 250 authors, you can imagine the variety of author demands for presentation capabilities. Technical Sessions Chair Dennis Maslonkowski and Symposium Chair Chuck Snell are developing speaker guidelines that will help speakers work with the A-V vendor's equipment. Seamlessly, we hope, but with back-up recommendations so the audience does not have to endure delays while systems that are supposed to be perfectly coordinated prove that they are perfectly recalcitrant.

One easy decision: we can buy laser pointers cheaper than we can rent them.

AEG and GRA members have received the 132-page Program and Abstracts book in a mid-July delivery two months before the meeting and five weeks before the early registration discount expires. We aimed for the "sweet spot" on your calendar – enough time before the deadlines to let you plan your meeting activities, and close enough to the deadlines to keep the registration form at the top of your "to do" list. This on-time delivery of the Program and Abstracts book is the result of a tremendous effort by the AEG•GRA 2000 Committee, AEG Meetings Director Julie Keaton, CMP, and the AEG headquarters staff. Thanks to all of them for a big job well done.

Remember our discount plan. Double your discounts by registering as an AEG or GRA member by August 21. You will receive both the early registration discount and the member discount. You can print an AEG membership application form, print the meeting registration form, and reserve a hotel room at the AEG web site, www.aegweb.org. GRA membership application forms are available on-line at www.grac.org. The hotel room block is limited, so make your hotel reservations early to take advantage of the special block rate. (We are researching overflow hotels in case the room block at the DoubleTree fills, but if you want to be where the action is, the convention hotel is the place).

BOB TEPEL

THE DEMISE OF THE SAN BRUNO FAULT, OR THE FAULT THAT NEVER WAS

This article was first released by the USGS in March of this year.

Recent rains may have made things unstable on some parts of San Bruno Mountain, south of San Francisco, but one fault the mountain doesn't have is a fault; at least none that will cause any problems, according to scientists at the U.S. Geological Survey.

Writing in the current [March 2000] issue of "California Geology," the five scientists conclude, "we find no evidence for the existence of the San Bruno Fault as a recognizable geologic structure or as a fault rupture hazard."

Whether or not a fault lies southwest of San Bruno Mountain, its activity and its exact location have been discussed among geologists since 1895. Traces of the fault have never been observed, but erratic exposures of the Merced sedimentary formation, from the Pacific Ocean to San Francisco Bay, have led some geologists to believe that these sediments may have been disturbed by a fault. Even when Manuel Bonilla, of the USGS in Menlo Park, first mapped the fault in 1964, he referred to it as "hypothetical," and continued to do so on two subsequent maps published by the USGS in 1965 and 1971.
Hypothetical or not, in 1997, when Bay Area Rapid Transit (BART) planners began to explore the possibility of extending BART to San Francisco International Airport, they needed to know, once and for all, whether or not there was a San Bruno fault, and if so, would it become active enough to affect the proposed rail line.

In order to answer that question, Bonilla and his fellow USGS scientists went beyond field observations and conventional geologic mapping to determine the extent of the Merced formation and the shape of the Franciscan bedrock basin in which it lies. A high-resolution aeromagnetic survey was flown to provide information on concealed faults of the San Andreas system. The magnetic characteristics of the Franciscan bedrock are ideal for this type of survey, during which a sensitive magnet, attached like a stinger to the underbelly of a low-flying airplane, measures irregularities of magnetism in buried formations. Where the magnetism of a buried unit changes abruptly, it indicates that fault movement may have disturbed the original layers of that formation. The San Bruno aeromagnetic survey showed the San Andreas and other faults on the San Francisco Peninsula, but none where the San Bruno fault was supposed to be.

They also used another indirect method to look for the fault-precise measurements of the pull of gravity. The pull of gravity at the ground surface is stronger where dense bedrock is close to the surface than it is where the bedrock is covered by much less dense sediments like the Merced Formation. Thus, an abrupt difference in depth to bedrock, such as expected from the San Bruno fault, can be readily detected. This method, too, showed no evidence for the fault. Although small earthquakes (magnitude to 2.0) occurred in the 20th century, northwest of Lake Merced, near the presumed trace of the fault, the USGS scientists attribute those earthquakes to activity on a right-step in the San Andreas fault, rather than the hypothetical San Bruno fault.

Thanks to our Corporate Sponsors!

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GEOLOGY IN ADVERTISING

Geology in Advertising is a “just for fun” poster that is being presented at the Annual Meeting in San Jose, September 2000. I am looking for contributions from anyone and everyone. To contribute to this poster, send an ad (newspaper, magazine, etc.) or label (bottled water, etc.) or anything else that is advertising and relates to or uses geology, to:

Corinne Stewart
2622 Gassmann Drive
San Jose, CA 95121.

Include your name, the source of the ad (if possible), and any comments that you would like to make. Contact Corinne by email at stewart_corinne@hotmail.com .

STUDENT VOLUNTEERS NEEDED FOR AEG 2000 NATIONAL MEETING IN SAN JOSE

The 2000 National AEG Meeting is being held September 19th through September 26th in San Jose, CA. Over 50 student volunteers are needed for the meeting. Some of the “perks” of being a student volunteer are as follows:

- Free full registration including registration gift, complimentary exhibitors luncheon and ice breaker reception
- Priority for the free annual banquet ticket raffle (last year all of the volunteers received tickets)
- A great opportunity to network and learn more about engineering geology
- A great opportunity to meet other students (informal student get-togethers will be planned)
- Something great to put on your resume!
- If you are a student volunteer for a short course or field trip, you get all of the hand-outs and materials that the registered participants receive (priority goes to the first students who volunteer)
- Student volunteers may also be compensated for driving field trip vans with FREE AEG MEMBERSHIP!

If you are interested in being a student volunteer and/or would like more information, contact Corinne Stewart at (408) 629-7801 or stewart_corinne@hotmail.com.

ANNOUNCEMENTS

CCGO Website and Online Calendar

The California Council of Geoscience Organizations is pleased to announce the establishment of a new service to its member organizations and friends. Our website, http://www.ccgo.org, now includes a "Master Calendar" for posting of member organizations' events and other activities of interest to California geoscientists. The content is currently in skeleton form, with only a few organizations' regular meeting dates listed, but no speaker names or talk titles yet.

So check out the calendar, admire the cool format that Kevin Blatt, our webmaster created, and send me your organizations' event listings in the format we've started. Please list speaker and title of presentation when known. Include field trips, short courses, and other events of interest. Include an email address for further information for each event.

The **Technical Affairs Committee of the California State Board of Registration for Geologists and Geophysicists** is adding members and needs a larger supply of candidates to choose from. In hopes of being able to maintain a diversity in gender, location, and professional interest, the committee is seeking resumes from women, geophysicists, mining/oil geologists, and environmental geologists, preferably from those living north of Los Angeles. Interested people should send their resumes and a short letter of interest to the BRGG (geology@dca.ca.gov) immediately.

Call for Papers – TDR 2001 – Innovative Applications of TDR Technology

Similar to the conference held in 1994, this Symposium will convene at Northwestern University in Evanston, Illinois. The dates are September 5-7, 2001, and it is anticipated that there will be participants from around the world. The Symposium will embrace the diverse and continually growing field of metallic and optical TDR monitoring. Sessions will cover: Rock and Soil Deformation, Soil Moisture, Subsurface Chemical Transport, Leak Detection, Groundwater Level Changes, Optical Fiber Applications, Structural Cracking and Deformation, Instrumentation and Telemetry, and Basic Physics. If you wish to present a paper, demonstrate equipment or be a sponsor, see the Symposium website for information at www.iti.northwestern.edu/tdr/tdr2001.html.

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Student Resume Binder for AEG 2000 Meeting

A binder of students' resumes will be available for review at the AEG National Meeting in San Jose, September 2000. Copies of the individual resumes will be available to interested employers. You do not have to attend the meeting to submit a resume. If you are interested, please contact Corinne Stewart by email at: stewart_corinne@hotmail.com.

The **AEG San Francisco Section Web Site** is now online! Go to **www.aegsf.org** for the latest information on San Francisco Section Events, Meetings, AEG 2000, Links and more to come!

Fall Course Offerings At SFSU

San Francisco State University Department of Geosciences Fall 2000 Graduate Course: Geol 475/775 - Hydrogeology (MT 1710-1825; T 1410-1700). For other course info go to: http://tornado.sfsu.edu/geosciences/geosciences.html

Fall 2000 Instructor(s) needed! Geol 101- Intro to Geology Lab (W 1410-1700), Geol/Metr 103- Intro to Oceanography Lab (M 1410-1700). Contact Angelica Fausto (afausto@sfsu.edu; 415-338-2061).

Extra AEG 1999 Salt Lake City Meeting bags for sale! See Gary Pischke at the July meeting to purchase one.

ASSOCIATION MEETINGS

The **Geotechnical Group of the SF Section of ASCE** will host a technical workshop on "Seismic Provisions of International Building Code 2000" at the Caltrans Auditorium in Oakland. Time and date will be announced later. Email Darren Mack at dmack@treadwellrollow.com to get on the ASCE-SF.org Geotechnical Group mailing list.

The **AEG Sacramento Section** has 40 group tickets to see the Rivercats v. Las Vegas at Raley Field on Sunday, August 27th at 7:05pm. Tickets are $15 and are first-come, first-served. Call or email Roy Kroll at 916-933-0633 or rkroll@velocityhsi.com to reserve your seats.

EMPLOYMENT OPPORTUNITIES

ENGINEERING GEOLOGIST/PROJECT GEOLOGIST

Ninyo & Moore Geotechnical and Environmental Sciences Consultants seeks an engineering geologist, project geologist or geotechnical engineer to join its geotechnical division in the Oakland office. Minimum qualifications are an MS in Geology or Geological Engineering, 3 to 5 years experience, and a California RG license. Experience with AutoCAD, laboratory testing, and project management also desirable. Contact: Joanne Schaarschimdt, Ninyo & Moore, 675 Hegenberger Road, Oakland, CA 94621; fax (510) 633-5640; email: jschaarschmidt@ninyoandmoore.com.

Gretchen Mora – Newsletter Editor
37192 Oak Street
Fremont, California 94536

AEG August Newsletter
August 8 - AEG Meeting
Spenger's Restaurant
Berkeley

AEG San Francisco Section Website is now online at www.aegsf.org!

RESERVATION FORM – August 8, 2000 AEG Dinner Meeting, 6pm

Spenger's Restaurant, 1919 Fourth Street, Berkeley

Please Fax or Mail your reservation to arrive before noon, Friday, August 4

Fax to Dennis Maslonkowski, c/o ARCADIS Geraghty & Miller (510) 233-3204 - Pay at the door – Do not send payment.

Dinner and Meeting Cost: $28 – members or spouses $14 – student members $30 – 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 Dennis Maslonkowski (fax: 510-233-3204) by noon, the Friday before the meeting.

NAME _____ TELEPHONE NO. _____

BILLING ADDRESS _____

SIGNATURE _____ DATE _____

Dinner Costs are normally but not always: $28 – members or spouses $14 – student members $30 - others

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