



ASSOCIATION OF ENGINEERING GEOLOGISTS

Southern California Section
"Serving Professionals in Engineering, Environmental,
and Groundwater Geology Since 1957"

NEWSLETTER – MAY 2002

MONTHLY DINNER MEETING

Date: Tuesday, May 14, 2002
Location: Stevens Steakhouse, 5332 Stevens Place, Commerce, CA
Time: 5:30 p.m. - Social Hour; 7:00 p.m. – Dinner; – 8:00 p.m. Presentation
Reservations: Call (949) 253-5924 ext. 564 by 5:00 p.m., Friday, May 10, 2002
Cost: \$25 per person with advanced reservations, \$20 at the door, and \$10.00 for students w/ valid I.D., "No-shows" will be billed \$10.00
SPEAKER: Dr. Jeff Keaton
TITLE: Engineering Geology Mapping in the Information Technology Age

ABSTRACT: Observation remains the foundation of engineering geology mapping, but many aspects of observation are being supplemented and even revolutionized by information technology (IT). Data acquisition is being accomplished with the aid of pen-based computers, digital cameras, and global positioning system (GPS) receivers. Quantitative geophysical and geochemical field methods are being used to produce quantitative measures that can be contoured and/or combined with other forms of observations to construct useful derivative maps. Aerial and space-based spatial data provide base maps or targets for subsequent field observations. Geographic information system (GIS) and computer-aided drafting and design (CADD) software are being used to manipulate and display geospatial data, sometimes during field data collection. Numerical analysis of observational data, including calculated grids derived from vector data, is being used to produce useful derivative products.

Challenges for engineering geology practitioners pertain to accuracy of field data; structure of database fields; uniformity of symbols, lines, patterns, and colors; and consistency of derived geospatial map products. Engineering geology maps produced with GIS tools have the potential to mislead even sophisticated users for two reasons: 1) the strikingly professional appearance of GIS maps implies precision even when uncertainties are specifically noted, and 2) field data can be collected as a series of seemingly independent observations and converted by a GIS technician into a professional-appearing map without the benefit of geologic principles or the repeated application of (cont.)

OFFICERS

CHAIR

David Seymour
(714) 549-8921
seymourgeo@hotmail.com
ail.com

VICE CHAIR

Lorraine Muto
(626) 337-5103
lmuto@willdan.com

TREASURER

Tania Gonzalez
(714) 282-6123
tgonzalez@earthconsultants.com

SECRETARY

Jeff Kofoed
Jkofoed@pacbell.net

(cont.)

the multiple working hypothesis. Consequently, professional discipline is needed to effectively apply modern IT to engineering geology mapping. The true power IT has is its analytical capabilities which requires engineering geologic data to be in digital format.

BIO: Jeffrey R. Keaton is a Principal Engineering Geologist and Vice President in the Anaheim office of AMEC Earth & Environmental, Inc. His education consists of a BS degree in Geological Engineering from the University of Arizona (1971), a MS degree in Engineering (Geotechnical) from the University of California, Los Angeles (1972), and a PhD degree in Geology from Texas A&M University (1988). He is registered as a Professional Engineer, Professional Geologist and Engineering Geologist.

Keaton was employed by Dames & Moore and Sergent, Hauskins & Beckwith (which became AGRA Earth & Environmental, and then AMEC Earth & Environmental) in various locales. He is currently with the Anaheim office of AMEC.

He served as Chairman of the Utah Section of the Association of Engineering Geologists in 1980-1982 and was the President of AEG in 1992-1993. He served as Chairman of the Engineering Geology Division of the Geological Society of America in 1989-1990. He served as Chairman of the Transportation Research Board Committee on Engineering Geology (A2L05) from 1991 to 1997, and Chairman of TRB Committee on Exploration and Classification of Earth Materials (A2L01) from 1997 to 2002. He also served as the Chairman of TRB Subcommittee on Scour Research (A2L05-2). In 2002, he became the Chairman of TRB Section L, housing the six committees that deal with Geology and Properties of Earth Materials. Keaton also is a member of AGU, ASCE, EERI, and SSA.

Keaton specializes in quantification of hazardous natural processes for use in design and risk analysis. He has written numerous articles regarding engineering geology mapping, debris flows, landslides, collapsible soils, subsidence, fault rupture, earthquake-induced liquefaction, earthquake ground motion, and case histories.

Steven's Steak House, 5332 Stevens Place, City of Commerce, T.G. 675 G-3, (213) 723-9856

CHAIR'S COLUMN

Electronic Newsletter and Website

There are still a significant percentage of us that are receiving the paper version of the newsletter. In order to set up and maintain a website, etc., we **MUST** reduce mailing costs. For those that receive the paper version, we encourage you to contact Jeff Kofoed (jkofoed@pacbell.net) to request the electronic version of the newsletter. The e-issue is in Adobe Acrobat Reader, identical to the paper version, printer friendly, with software free at www.adobe.com

2007 Annual Meeting

Many thanks to **Jeff Keaton** who has volunteered to co-chair the 2007 Annual Meeting. Jeff got me so excited about it, I agreed to co-chair as well. If you'd like to volunteer, please contact Jeff or I.

MEMBERSHIP RENEWAL

If you are unsure about your membership status, please contact AEG Headquarters aegweb.org, **Jeff Kofoed**, Secretary, or me. We are currently looking for a new

Membership Chair. Please contact **David Seymour** if you wish to volunteer.

YEAR 2002 CONTRIBUTORS NEEDED

Contributions from corporations and individual members for 2002 are greatly appreciated. Contributors will be listed in our newsletter throughout the year and can post their logo or business card in the newsletter if so desired. Please mail contributions made out to **AEG** to our section chair, David Seymour, 26276 Buscador, Mission Viejo, CA 92962.

CALIFORNIA GEOLOGY MAGAZINE

The CDMG has recently discontinued the bimonthly magazine California Geology, please visit this site and lodge your responses to their online survey:

www.consrv.ca.gov/dmg/pubs/cg/surv_intro.htm

YEAR 2002 MEETING SCHEDULE

Date	Speaker	Location
May	Jeff Keaton	Steven's Steakhouse
June (Past Chairmen Night)	Josh Feffer	Steven's Steakhouse
July	NO MEETING	
August	NO MEETING	
Sept.	TBA	TBA
October	TBA	TBA
November (Joint w/ IGS)	TBA	TBA
December	NO MEETING	

AEG SOCIAL SECTION COMMITTEE CHAIRSMEMBERSHIP – **OPEN**LEGISLATIVE AND REGULATORY AFFAIRS - [Joe Cota](#) (818) 785-2158 (jcota@earthlink.net)PUBLICATIONS - **OPEN**FIELD TRIPS - **OPEN**

SHORT COURSES - Kerry Cato (909) 506-9688

EDUCATION – Ali Tabidian (818) 677-2536

EDITOR – Jeff Kofoed (jkofoed@pacbell.net)ADVERTISING IN THE NEWSLETTER

Contact the section Chairman or Treasurer for rates.

SF SECTION FIELD TRIP

The San Francisco Section of AEG is sponsoring a short course in tunneling. Please visit their website for details and registration forms: www.aegsf.org/events.html

FIELDTRIP AND MEMBERSHIP CHAIRS NEEDED!

We are still looking to fill both chair positions. If you would like to volunteer, or have any fieldtrip ideas, please contact [David Seymour](#).

CALL FOR SHORTCOURSE PROPOSALS

AEG Annual Meeting Vail, Colorado, 2003

Wanted: Instructors to teach one- or two-day short courses at AEG's Annual Meeting in Vail Colorado. Any topic related to engineering geology and related subjects, or topics of interest to the profession, are acceptable. Dates available for short courses are September 15, 16, 20, or 21, 2003.

If you are interested, prepare a short proposal with the course name, instructor(s) name(s), length of course, special requirements, and suggested dollar amount to be charged.

Reply via email by July 8, 2002 to:
Dwayne Edington,
AEG Vail 2003 Short Course Chairman
edingtond@aol.com

Final decisions concerning short courses will be made in August 2002.

SCEC GUIDELINES AVAILABLE

The slope stability guidelines, companion to the liquefaction guidelines (CDMG SP117), are now available. Visit the SCEC website at:

www.scec.org/products/hazardmitigation.html

DIBBLEE FIELD TRIP

The Dibblee Geological Foundation and the Santa Barbara Natural History Museum invite you to participate in a rare opportunity to visit Santa Cruz Island with Tom Dibblee, Santa Cruz researcher Peter Weigand and new Dibblee Map Editor John Minch. Fee: \$600 (includes boat transportation, lodging at the well appointed UCSB Field Station, 4-wheel-drive transportation on the island, food by Bill Harz & Associates, and guidebook). Registration deadline is June 1st. Due to limited capacity of island vehicles, only 25 people will be able to participate in the remote field activities. For a slightly reduced fee of \$500, others who wish to participate but not travel into the field by vehicles are welcome. For further information, e-mail John Powell at dibbleemap@adelphia.net, call 805-987-5846, or write to PO Box 2309, Camarillo, California 93011

AEG NEWS

Chris Mattheson has decided to step down as President of the Association at the end of his current contract, September 30, 2002. At this time the AEG will likely relocate to Denver and be run by an association management company.

Board for Geologist's and Geophysicists

Board Meeting Observations from March 25, 2002, Joe Cota, Legislative/Regulatory Affairs Chair

Last month I attended the Board for Geologists and Geophysicists (BGG) quarterly meeting in Sacramento. Unfortunately all of the BGG board meetings are now held in Sacramento. [*Joe's report edited for length, ed.*]

The Board's agenda from 8:30 AM to 9:00 AM was sure aggressive! They called roll & established quorum, **held the public comment on non-agenda items**, approved the minutes to the last board meeting of September 28, 2001, elected a new board Vice President, and last but not least, Executive Officer Paul Sweeney gave his reports on budget, **enforcement actions**, public outreach, the strategic plan, and the EO activity report. I would like to propose that AEG request BGG to begin board meetings at 9:30 AM, instead of 8:30 AM, so that an AEG representative from southern California can be present for scheduled discussions on enforcement actions and public comments without having to spend the night.

The meeting continued on through the morning and various status reports were given. It would appear that the board's proposal to increase license/renewal fees will be delayed. The State of Washington now registers geologists. A representative from their board asked BGG for cooperative licensure between the two states. The board is considering it and I think they will not waive the California-specific exam (a good thing) and a prospective CEG would still have to take the engineering geology exam.

BGG is supporting Senate Bill 1958 by Senator Richard Polanco (D-Los Angeles). SB 1958 would add language to the Environmental Quality Assessment Act of 1986 that **prohibits Registered Environmental Assessors (REA's) from practicing geology** unless registered as a geologist by BGG and would also require that REA II's must possess a bachelor of science degree from an accredited college or university in a physical or biological science, engineering, or a related field and also be a licensed geologist or civil engineer. Two people were present to oppose BGG's support of Polanco's bill. One was a soil scientist and the other was an environmental professional with a geology background who did not pass the geology exam. AEG's legislative committee is in support of the bill as currently written and will provide a draft letter of support for Chairman Seymour to review. Since the time of the meeting, it appears opposition to the bill is mounting and I am trying to obtain copies of the letters of opposition to review the issues.

JC Isham started the afternoon session with his report on the BGG legislative committee. BGG is monitoring SB 1963, SB 1240, SB 1244, SB 2018, SB2024, SB 2059. SB 1500 was not mentioned, but I suggested they add it to their list to watch. SB 1500 changes the NHD statement to state that "the [seismic hazards] maps may include developed land where delineated hazards have been mitigated in accordance with applicable guidelines.....check with your local building/planning department". It is not clear whether it is the buyer or seller that has to "check" and how can they, or their realtors, reasonably be expected to understand final geologic reports for projects involving landslide or liquefaction mitigation.

John Williams term as the Chair of the Examination Committee is over and the board is considering appointing Tom Spindler (CDMG) or Martine Alter (currently an exam grader, I think).

The board's attorney reported they have been given extra duties on other boards, so their time will be a little more "stretched". Gary Duke is now also going to be involved in the affairs of the veterinary board, locksmith/security board, and the funeral directors board.

Finally, the board voted (in a split decision) to appoint former board president, Seena Hoose to the Technical Advisory Committee. Robert Larson's term as TAC's chair is ending and will be replaced by Tony Sawyer (County of San Diego geologist). Roy Shlemon and Mike Hart are also current TAC committee members.

If you have any questions about the meeting, send me an email at jacota@earthlink.net

**Groundwater Resources Association of California
In Cooperation with the Association of Engineering Geologists
Present:**

Statistics for Groundwater Investigations:
Touring Data in One to Three Dimensions

The Groundwater Resources Association of California will conduct a one-day seminar on *Statistics for Groundwater Investigations* May 7, 2002 (Tuesday) in Walnut Creek, CA and on May 9, 2002 (Thursday) in

Newport Beach, CA. Dennis Helsel, Ph.D., Geologist with the U.S. Geological Survey, will be the seminar leader. Dr. Helsel received his Ph.D. in Environmental Science and Engineering from Virginia Tech and is co-author of the textbook, *Statistical Methods in Water Resources* (1992). He has designed and taught training courses on environmental statistics since 1986.

Tips for touring environmental data are remarkably similar whether traveling in one dimension (describing data), two dimensions (plots and regression models), or cruising along 3-D surfaces like kriging. Some roads are smooth, others bumpy. This one-day guided tour stops at some of the best-loved locations, as well as important out of the way spots, to understand the landscape of interpreting environmental data.

Data Touring Topics:

- *Know your passengers:* data characteristics, including mass versus frequency
- *Know your vehicle:* hypothesis tests, plots, regression models, and surfaces
- *Lurking assumptions:* dealing with outliers and skewed distributions
- *Decision points:* dealing with values below detection limits
- *Tools to get you to your destination:* principles applicable in 1 and 3-dimensions, including kriging

More details registration information, costs, and hotel locations are located on GRA's web site at www.grac.org. Sign up on the web site to receive more details as they become available. A complete course outline will be provided in the near future.

ICBO

The International (Building) Code Council has published CCGO's proposed code change along with numerous other proposed changes. Our proposal will be heard Wednesday, April 10, in Pittsburgh, Pennsylvania, near the end of the Structural hearings. Please remember that this change is only one small step toward beefing up the minimal grading appendix of the International Building Code (which replaces the Uniform Building Code). We hope to submit at least one change each year and to participate in the annual hearings as a means of retaining our hard-won influence in the code development community, as well as bird-dogging other organizations that submit their own proposed changes, some of which typically undermine our own efforts and jeopardize public safety.

The link below includes more proposed changes to the Structural code, General code (both Structural and

General often have items dealing with excavations, seismicity, and other pertinent issues), and other changes, as well additional information on the April hearings (click on "ICC Home" at the bottom).

www.intlcode.org/codes/2002cycle/2002proposals.html

Betsy Mathieson, Chair, CCGO Code Development Committee email: emathieson@exponent.com

Ideas Sought for Symposium on the Future of Engineering Geology at AEG-AIPG 2002, Reno, Nevada.

We will have a special symposium at the Reno meeting, titled "Visioning the Future of Engineering Geology: Sustainability and Stewardship." Why this symposium? Yogi Berra said it best: **BE VERY CAREFUL –IF YOU DON'T KNOW WHERE YOU ARE GOING...YOU MIGHT NOT GET THERE.**

This symposium will explore ways to add value to engineering geology practice in the years to come, and develop strategies to overcome conditions that threaten the viability of the profession.

Engineering Geology has been evolving for well over a century. Where is Engineering Geology headed in the 21st century – or even the next twenty years? Where *should* it be going? What can be done – and by whom or by what organizations – to help Engineering Geology fulfill its potential as the prime geologic specialty that directly impacts human health and safety, and supplies solutions to geologically-based engineering, environmental, and public safety problems?

This symposium provides an opportunity for individuals who believe in the value of engineering geology, and the professional organizations that are responsible for its future, to develop a shared and coordinated strategy to keep engineering geology alive and growing, and to keep engineering geologists engaged in using their special expertise to protect the public health, safety, and welfare.

Topics under development are:

- Site characterization as the *raison d'être* for engineering geology
- The role of statutory licensure in the practice and future of engineering geology, and the role of engineering geology in the future of statutory licensure
- Sunrise to sunset: antidotes for poison pills
- The semi-independent licensure board: a solution to financial and legislative headaches?
- The role and feasibility of academic department program accreditation in engineering geology
- Engineering geology in building and grading codes, regulations, laws, and practice guidelines
- The evolution and future of the ASBOG geology licensure examination and state engineering geology certification examinations
- Engineering geology professional associations: are their missions incomplete and their visions clouded?
- Closing workshop: creating the future of engineering geology

As the convener of this symposium, I would like input from geologists who care about our profession and its future. Send me your ideas. What is important to you? What blunders have been made (or blinders worn) in guiding the profession in the past? What are the risks for the future? How do you feel about the topics selected thus far? Any suggestions for speakers and more topics? Thanks!

Robert E. Tepel
voice 408-997-3437, facsimile 408-997-6932
bobtepel@pacbell.net

EMPLOYMENT OPPORTUNITIES**Project Level Geotechnical Engineer**

TerraPacific Consultants, Inc. is a San Diego based geotechnical consulting firm specializing in soil and foundation engineering throughout the southwest. We are seeking a motivated geotechnical engineer who is interested in finding solutions to challenging engineering problems. Position responsibilities include project management, collecting field data, analysis, report writing and client communication. Qualified candidates must have a P.E., minimum of 5 years experience and good communication skills. At least two years experience in geotechnical forensic investigations is preferred. A G.E. is a plus. The right qualified, independent and hard-working individual will be offered an excellent salary, profit sharing and benefit package commensurate with their experience. Please submit a resume and cover letter to: TerraPacific Consultants, Inc., 12245 World Trade Drive, Suite G, San Diego, CA 92128; or by fax to 858-521-1199; or by e-mail to jimg@terrapac.net.

Douglas E. Moran, Inc**ENGINEERING GEOLOGY
SOIL ENGINEERING**

Do you need reliable results of soil tests that you are not equipped to perform or do not have time to perform? Consider asking ***Douglas E. Moran, Inc.*** to perform the tests for you. They maintain a laboratory equipped to perform most tests (A.S.T.M., U.B.C., or CALTRANS) and you can always rely on the results. They are willing to perform long-term tests that may be inconvenient to perform in a laboratory that is too busy to allow testing machinery to be tied up for the length of time those tests may require. For your consideration, the following is a list of some of the conventional soil tests that they are equipped to perform.

Remolded and/or Undisturbed:

Consolidation
Consolidation Plus Time Rate
Direct Shear
Residual Shear
Expansion
Expansion Index
Grain Size (Full Sieve Set)

Hydrometer Analysis
Liquid Limit, Plastic Limit, Shrinkage Limit
Moisture/Density (undisturbed)
Maximum Density
Sand Equivalent
Specific Gravity (soil and rock),
Swell or collapse (remolded air-dry, HUD)

Feel free to call and ask for **Doug Moran** or **Rick Herrera** at (714) 544-2215, Fax (714) 544-7395.

ASSOCIATION OF ENGINEERING GEOLOGISTS
SOUTHERN CALIFORNIA SECTION
PUBLICATION ORDER FORM

Ordered By/Shipping Address:

Mail Order Form To:

NAME		AEG Southern California Section, Publications Chairperson
ADDRESS		C/O Leighton and Assoc., Inc
CITY, STATE, ZIP		31344 Via Colinas, Ste 102
PHONE		Westlake Village, California 91362
		Attention: Dawn James
		Ph.: (818) 707-8320 ext. 224 (Inquiries only, orders must be mailed with payment)

TITLE / DESCRIPTION	PRICE	QTY	TOTAL
Baldwin, J.E. and Sitar, N., 1991, <u>Loma Prieta Earthquake: engineering geologic perspectives</u> , AEG Special Publication No. 1, 170p	\$10.00		
Bishop, K, and Tandy, 1995, <u>Ground Failure during the January 17, 1994 Northridge earthquake</u> : Association of Engineering Geologists, Southern California Section, Annual Field Trip Guidebook, November 11, 1995, 106p.	\$20.00		
Shlemon, R.J., 1993, <u>Applications of Soil Stratigraphy to Engineering and Environmental Geology</u> , Short Course Volume I, 3-ring binder	\$20.00		
Briggs, R.P. and Parke, C.D., 1990, <u>Guide to Field Trips in Pennsylvania, Ohio, and West Virginia</u> , AEG 33 rd Annual Meeting, October 1-5	\$15.00		
Blake, T. and Larson, R.A., eds. 1991, <u>Engineering geology along the Simi-Santa Rosa fault system and adjacent areas. Simi Valley to Camarillo, Ventura County, California</u> : AEG, Southern California Section, Annual Field Trip Guidebook, August 24, 1991, v. 1& 2, 383 p. 4 map sheets	\$25.00		
Buckley, C.L., and Larson, R.A., eds., 1990, <u>Geology and Engineering Geology of the Western Soledad Basin Los Angeles County, California</u> : Association of Engineering Geologists, Southern California Section, Annual Field Trip Guidebook, November 3, 1990, 185 p., 2 map sheets	\$15.00		
Byer, J.W., <u>1975 Sycamore Canyon Fault, Verdugo Fault, York Boulevard Fault, Raymond Fault, Sierra Madre Fault Zone</u>	\$20.00		
<u>Highway and Railroad Slope Maintenance</u> : AEG, 34 th annual meeting, September 29 th – October 4 th , 1991	\$10.00		
Leighton, F.B. <u>Mitigation of geotechnical litigation in California</u> : Munson Book Associates, Huntington Beach, California, 274p.	\$20.00		
Sieh, K.E., and Matti, J.C., 1992, <u>Earthquake geology, San Andreas fault system, Palm Springs to Palmdale</u> : AEG, 35 th Annual Meeting, Field Trip Guidebook, October 3-4, 1992	\$10.00		
Stout, M.L., ed., 1992, <u>Proceedings of the 35th annual meeting, Association of Engineering Geologists</u> , October 2-9, 1992: 740p.	\$5.00		
Tepel, R, 1995, <u>Professional Licensure for Geologists, an Exploration of Issues</u> , Association of Engineering Geologists Special Publication No. 7, 1995			
Cann, L.R., Cobarrubias, Hollingsworth, B., 1992, <u>Engineering Geology Field Trips Orange County, Santa Monica Mountains, and Malibu</u> : AEG 35 th Annual Meeting, Field Trip Guidebook, October 2-9, 1992	\$10.00		
<u>Los Angeles Metro Rail System Field Trip Guidebook</u> , Association of Engineering Geologists, 35 th Annual Meeting October 2-9, 1992 Long Beach, California	\$10.00		

**DELIVERY CHARGES ARE \$3.50 FOR THE FIRST BOOK,
\$1.00 FOR EACH ADDITIONAL BOOK**

SUBTOTAL	
DELIVERY	
TOTAL ORDER	

MASTERPIECE ROCKS & FOSSILS
Specializing in Décor for Home, Office And Gifts

Mineral Clusters, Rock Carvings, Fossils Slabs, Rock Vases & Bookends, Etc. Various Sizes With Some Weighing 150 lbs.

Museum Quality Mineral Clusters, Dinosaur Eggs, Triceratops Horn, Etc.

Quality At Reasonable Prices

Call For An Appointment Or For An Announcement To Our Next Semi-Annual "Open House":

**Phone & Fax: (818) 249-9736
91224-0692**

P.O. Box 8692, La Crescenta, CA

Is The Ground Letting Your Project Down?

MOORE & TABER



**Geotechnical
Constructors**

*Serving the geotechnical and
construction industry with
creative solutions
for over 30 years...*

**Compaction Grouting
Chemical Grouting
Permeation Grouting
Liquefaction Mitigation
Stone Columns
Underpinning**

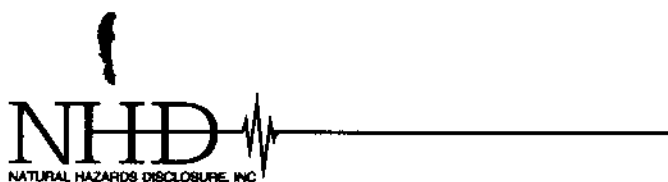
Toll-Free:

1-866-779-7001 or 1-800-991-2472

Web: www.mooreandtaber.com

Email: info@mooreandtaber.com





\$89⁰⁰ including map

**ENVIRONMENTAL RECORDS REVIEW
Site Assessment Report - Meets Year 2000 ASTM Standards**

Our report identifies agency-listed hazardous waste / contaminated sites, solid waste landfills, hazardous waste transfer stations, spills, underground storage tanks and leaking underground fuel tanks in proximity to the subject site. The databases used were obtained from selected government agencies in charge of collecting and keeping such records in accordance with ASTM E-1527-00 (Standard Government Records Inquiry for Commercial Real Estate Transactions).

- *ASTM Standards
- *Accurate, easy to read, concise reports
- *Rapid turn-around
- * Professional staff

**** Call 800-317-7919
or visit our website at
www.naturalhazards.com
to order.**

Natural Hazards Disclosure, Inc.
16654 Soledad Canyon Road #501, Santa Clarita, CA 91351
Phone: 800-317-7919 www.naturalhazards.com FAX: 888-999-6439



**Geotechnical
Stabilization, Inc.**

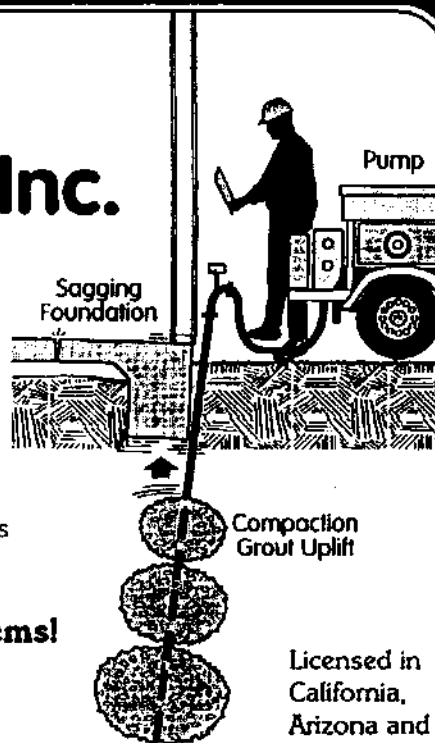
Specializing in Ground Improvement techniques including ;
**Compaction Grouting, Chemical Grouting,
Lense Grouting and Pressgrout Piles.**

- | | |
|------------------------------------|------------------------------|
| • In Situ Densification of Soils | • Soil Solidification |
| • Controlled Lifting of Structures | • Soil Reinforcement |
| • Water Shut off | • Underpinning of Structures |
| | • Epoxy Grouting |

Call today- Let us help solve your Soil problems!

(760)489-6696

1558 Sterling Court, Escondido, CA 92029-1208



Licensed in
California,
Arizona and
Nevada



GILES EXPLORATION SERVICES

**Specializing in
Professional Drilling Services
For
Southern California's
*Geotechnical/Environmental
Consultants***

All crews are 40hr hazmat certified
Reliable-efficient
With 25 plus years experienced
Currently employing
CME 45 and CME 75
Always-competitive rates

SPECIAL INTRODUCTORY OFFER
10% DISCOUNT FOR ALL NEW CLIENTS*

For more information/questions/scheduling
Please contact Rich Koester/Carl Schrenk at

(714) 336-5778 or (714) 779-0052

**one discount per client*

