# Association of Engineering Geologists

ALL STATES

Southern California Section

## NEWSLETTER - May 1990

#### **Bob Hollingsworth**

Chairman (818) 889-0844

#### Eldon Gath

Vice Chairman (818) 965-4874

#### **Charles Daugherty**

Treasure r (213) 489-6964

#### James O'Tousa

Membership Drive Chairman (818) 709-3872

#### Kelly E. Rowe

Secretary/Newsletter Editor
12 Issues/year-\$20 to "AEG"
(Full-Time Students \$10/year)
(714) 474-9344
(818) 965-4048
(818) 964-3702 FAX
c/o Geraghty & Miller, Inc.
Ground-Water Consultants
17800 Castleton Street, Suite 175
City of Industry, CA 91748
Amer.Geop.Union TELENET
KOSMOS Computer Mail
Username: KROWF

2550 Beverly Blvd. Los Angeles, CA 90057

Dinner	Meeting	Tuesday	/ May	8th
--------	---------	---------	-------	-----

- The Artel Plaza Hotel Restaurant 7277 Valjean Avenue Van Nuys
- Cost \$20.00 (Full-Time Students Free)
- For reservations call by May 4th!!!

  Marion (818) 889-0844 (Grover Hollingsworth & Assoc.)
  (Leave Your Name & Number of People in Your Party)

## Make reservations by Noon on the Friday before the Meeting

- ☐ 5:30 Social Hour
- ☐ 6:45 Dinner

7:30 Announcements

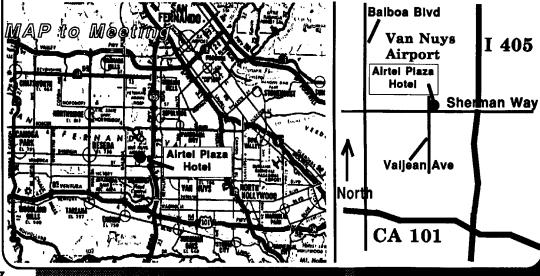
☐ 8:00 Program

**Program** Some Lessons to be Learned from TOPIC Failures of Earth Dams - With an

Emphasis on the 1976 Teton Dam Failure

SPEAKER Leonard M. Krazynski - civil/Geotechnical

Engineer, Leonard M. Krazynski & Assoc. Houston, Texas & Corporate Consultant for Leighton and Associates, Inc., Irvine. California



# Program Topic & Speaker

Some Lessons to be Learned from Failures of Earth Dams - With an Emphasis on the 1976 Teton Dam Failure

### Leonard M. Krazynski

The Teton Dam failure in southern Idaho resulted in the deaths of 14 people on June 5, 1976. An earthfill, clay-core dam constructed by the Bureau of Reclamation, Teton Dam was 305 feet high to the crest, spanning 2,000 feet across the Teton River. The dam failed catastrophically during the initial filling when the water level reached 3.3 feet below the spillway.

Teton Dam was constructed as specified and failed a the result of inadequate protection of the impervious core material from internal erosion. The most probable physical mode of failure was cracking of the core that allowed the initiation of erosion; however, the erosion could have been initiated by piping at the contact of the core and the rock surface.

A 30 minute video tape of the actual failure will be shown following the meeting.

Leonard M. Krazynski is a registered civil engineer with over 40 years of experience in geotechnical engineering projects in the United States and abroad. He received his B.S. in civil engineering at U.C. Berkeley and M.S. in civil engineering at Washington State U.

## THIS MONTH

May 1990



Kelly E. Rowe Hydrogeologie

## ATTENTION... for the May meeting!!!

Because AEG has no track record or standing agreements with the Airtel Plaza Hotel, they have strict rules on reservations and pre-payment for our May dinner meeting. The hotel requires a check on the Friday before our Tuesday meeting as full payment for all expected attendees. This means the Section will automatically have paid for, and lost money on, anyone who reserves but does not attend or otherwise arrange delivery of a check for \$20. At the same time, the hotel is limited in its ability to accommodate extra people who show up without prior arrangements. Absolutely no reservations for the May 8 meeting will be accepted after 12:00 noon on <u>Friday May 4!!!</u>

This month Mr. Leonard M. Krazynski, geotechnical engineer, will discuss failures of earth dams. Mr. Krazynski has extensive experience in California and Texas. According to his resume, he has a strong interest in expansive soils.

Last month Dr. Robert Schuster, Research geologist/civil engineer with the USGS, spoke about landslide dams throughout the world. He and a colleague have studied landslide dams for a number of years and have reached some interesting conclusions. They plan to soon publish the results of their studies. Some of their conclusions are that landslide dams are formed, by order of frequency, by slumps & slides, avalanches, flows and undifferentiated types. Frequent causes of landslide dams are due to rain and snowmelt. Earthquakes produce the biggest landslide dams. Stabilizing landslide dams or repair of damage to facilities such as roads, train tracks and housing caused by associated landslide movement may be very expensive.

At the April meeting Dennis Hannah described the outcome of a recent meeting that took place with the long-range planning committee of AEG. There were many key issues that the committee determined were necessary to focus upon for continued development of the Association. One of the issues related to attracting more hydrogeologists and environmental geologist to the Association. Because of the explosive growth of work in these fields and the Association's delay in meeting the needs of these professionals, considered to be closely aligned to the needs of engineering geologists, no growth of the

Continued on page 3

Continued from page 2

Association is evident during the last few years. These and other issues will be addressed and discussed further in the Association's correspondence with the membership, to develop a stronger Association.

Hugh Robertson also spoke at the April meeting to describe the current activities of concern to engineering geologists in the state legislature. This time of year is very busy for the legislature. To date there is no alarming legislation pending. There are, however, continuing discussions that the Board of Registration of Geologists and Geophysicists (BRGG) be combined with another professional board in the state's Department of Consumer Affairs. Presently, the most likely board to absorb the BRGG is the Board of Registration for Engineers.

Hugh says that the AEG Legislative Analyst in Sacramento, Mr. William J. Keese, is performing outstanding work on our behalf. He has weeded out the bills that pertain to geologists. These have been periodically submitted to the Legislation Committee for review and comment. A number of bills have been submitted concerning toxic waste and AEG is generally in support of these bills. Many bills were submitted concerning seismic safety and involve seismic safety evaluations and reports, mitigation technologies and repair of residences. We have been in support of these bills as they should improve the safety of developments, help disseminate information and improve people's understanding of seismic risk.

Assembly Bill (AB) 469 (Harvey), was a bill submitted to raise the cap on the fees that the Registration Board can charge. We have been in support of this bill as it should provide funds for allowing the exams to be given more than once a year and provide better funds to assist the board in their enforcement actions. Most of the discussion about the bill involved the need for the Registration Board. Mr. Keese has indicated that the geology board appears to be safe from sunsetting for 3 to 6 years.

AB 527 (Hannagan) establishes standards for certified appraisers for federally related transactions. The bill has recently been ammended to include Geologist, along with Engineers, to be exempt from having to be registered as an appraiser.

AB 2978 (Speier) will require homes to be bolted to the foundations by the sellers at the time of transaction. AB 2983 (Tanner) establishes certain conditions for solid waste landfills with requirement to make sure that surface waters are separated from the subsurface waters. A number of bills were submitted concerning computer mapping and the desire to make the computer mapping a practice of civil engineering. We have informed Mr. Keese that geologists may modify maps and perform mapping functions by computer. We would not like to see our ability to perform computer mapping restricted by laws which would only allow civil engineers and evaluating structural integrity. Mr. Keese is assessing the need to add geologists to the wording in the law when it comes to assessing the earthquake risk of the property.

Hugh says that if you are interested in legislation or would like to review copies of these bills, write or give him a call so he can either get you copies or give you a quick run-down on what's happening on the legislation front.

The following are some notes of interest from the January 26, 1990 meeting of the State Board of Registration for Geologists and Geophysicists, held at the Hyatt Hotel in Los Angeles. The Board is considering the adoption of a multiplechoice type of examination for registration of geologists. The current test of multiple-choice, essay questions and problems takes a considerable time to be graded by a limited number of volunteer graders. The board had 1,100 applicants of which 874 candidates took the examinations in 1989. It is possible that the number of applicants for the examinations in the future will increase, thus prolonging the time for completion of grading and limiting the frequency of the exams. The board is apparently divided toward a change in the current program. The board is developing a set of goals and criteria that would be given to a consulting firm which reviews the examination and have the firm make recommendations in its report to the board. This motion passed unanimously.

The board discussed the "Fields of Expertise" list at the January 26th meeting also. There was general agreement that geophysicists were excluded from the comparison of expertise of geologists to expertise of civil engineers. Because there were some additional tasks to be accomplished by the board's committee the approval of the list was postponed. This topic will be discussed further in a future meeting.

Dr. Martin L Stout will be semi-retiring after 30 years of teaching at California State University, Los Angeles. At the April meeting Dr. Stout said he will continue to teach, about half-time, upper-level and graduate level classes. In honor of the years of teaching and the impact he has had on the teaching profession and on engineering geology, the Department of Geology at California State University, Los Angeles, is holding their Annual Alumni Awards banquet in his honor on June 1st. The department is also establishing a scholarship in his name, the Martin L. Stout Scholarship. If you wish to find out more information concerning this event or to contribute toward the Martin L. Stout Scholarship fund, please contact Dr. Gary Novak, Chairman of the Department of Geology at (213)343-2400.

**SDAG** annual field trip first call for papers. Field trip is scheduled for October 20th and will cover geotechnical issues, e.g., slope stabilization, deep fill monitoring, fill saturation and ground improvement techniques. If you would like to contribute a paper, contact John Hoobs, at Geocon Inc., (619)558-6900.

The Dibblee Geological Foundation has set Saturday, May 5th, as the date for "A Day in the Field with Tom Dibblee in the Santa Monica Mountains". The foundation is asking for a minimum donation of \$35.00 per person, including field trip and BBQ. The left-over proceeds from this event will be used to publish additional geologic maps of the current Dibblee - Santa Monica Mountains series. The previous "Day in the Field with Tom Dibblee" was a great success for all participants. For reservations please contact, by April 20th, John R. Powell (805) 653-5556 or write to John, c/o Staal, Gardner & Dunne, Inc., 121 North Fir St., Suite F, Ventura, CA 93001. Helmut Ehrenspeck (805) 968-0481 is also a contact for this event.

#### Continued from page 3

Note that the Association's AEG NEWS is willing to accept information and photographs for publication in the quarterly newsletter by the general membership. The Section News portion of the AEG NEWS is divided into Membership News and Section News. Examples of acceptable information for the Section News may be found in previous issues. Feel free to submit information to the Editor. It needs to be submitted before the end of each season for subsequent editing, layout, publishing and final distribution by the middle of each season.

#### Seminars/Meetings/Field Trips

5-Saturday" A Day in the Field with Tom Dibblee in the Santa Monica Mountains" Malibu State Park, CA. \$35/person CONTACT: (805) 653-5556 John Powell, c/o Staal, Gardner & Dunne, Inc. 121 North Fir Street, Suite F, Ventura, CA 93001, or (805) 968-0481 Helmut Ehrenspeck. Dibblee Geological Foundation, P.O. Box 60560, Santa Barbara, CA 93160

7-9"UNIX EXPO West" Los Angeles, CA. Los Angeles Convention Center. CONTACT: National Expositions Company, Inc., 15 W. 39th Street., N.Y., NY

7-11 Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Use of Models for Site Assessment and Remediation" Cost: \$1,250. Los Angeles Airport Marina Hotel, 8601 Lincoln Blvd. Marina del Rey, CA CONTACT: (619)943-7694 Lois Elms, Coordinator, Hydrocarbons in Ground Water, 6992 El Camino Real, Suite 104-263, Carlsbad, CA 92009.

14-17 Fourth National Outdoor Action Conference on Aquifer Restoration, Ground Water Monitoring and Geophysical Methods" Las Vegas, NV. NWWA CONTACT: (614)761-1711 National Water Well Assoc. P.O. Box 182039, Dept. 017, Columbus, OH 43218

14-18"Hands-on 5-day Laboratory for Quality Geotechnical Lab Testing May 19-24" Rolls, MO. Univ. of Missouri at Rolls Continuing Education (UMRCE). CONTACT: UMRCE (800)752-5057 Continuing Education, 119 Mechanical Engineering Annex, UMR, Rolla 65401-0249

18-21"Presentation of Papers & Field Trip for: Mojave Desert Quaternary Research Symposium " The Mojave Desert Quaternary Research Center San Bernardino County Museum. CONTACT: (714)798-8570. Jennifer Reynolds, Editor LMDQRC San Bernardino County Museum, 2024 Orange Tree Lane, Redlands, CA 92374

#### **JUNE 1990**

12-13"Short Course - Magnetometer Surveying" Sunnyvale, CA. EG&G Geometrics CONTACT: (408)734-4614 Myra Crettol, EG&G Geometrics, 395 Jave Drive, Sunnyvale, CA 94089

12-14"Microbial Processes" San Francisco, CA. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

21-22"International Symposium on Mapping & Geographic Information Systems" San Francisco, CA CONTACT: A. Ivan Johnson, A. Ivan Johnson, Inc., 7474 Upham CT. Arvada, CO 80003 (303)425-5610.

#### **JULY 1990**

23-27"Optimization and Uncertainty Analysis in Solving Groundwater Problems" Dr. S. Gorelick, et.al., International Ground Water Modeling Center CONTACT: Holcomb Research Ins. Butler U., 4600 Sunset Ave., Indianapolis Indiana 46208 (317)283-9519.

#### **AUGUST 1990**

12-15"CONSERV 90: The National Conference and Exposition Focusing on Water Supply Solutions for the 1990s." Phoenix, AZ CONTACT: Conserve 90, 6375 Riverside Dr., Dublin, OH 43017 (614)761-1711

12-17"IBM PC Applications in Ground Water Pollution and Hydrology: A Hands-On Short Course" Dublin, OH. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/ Dept. #017/ Columbus, Ohio 43218.

#### SEPTEMBER 1990

19-22"Short Course - Shallow CDP Seismic Reflection Surveying" Sunnyvale, CA. EG&G Geometrics CONTACT: (408)745-6131 Myra Crettol, EG&G Geometrics, 395 Jave Drive, Sunnyvale, CA 94089

24-28"Incremental Flow Modeling for Analysis of Flow and Transport Problems" Dr. O. Strack, et.al., International Ground Water Modeling Center CONTACT: Holcomb Research Ins. Butler U., 4600 Sunset Ave., Indianapolis Indiana 46208 (317)283-9519.

#### OCTOBER 1990

1-5"33rd Annual Meeting of the Association of Engineering f 4

Geologists" Pittsburgh, Pennsylvania. Technical sessions, three short courses, two symposia & several field trips.

1-3"Principles of Subsurface Contaminant Fate" Long Beach, CA. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

1-3"Theory and Practice of Ground Water Monitoring and Sampling" Long Beach, CA. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

4"Environmental Site Assessment Course" Long Beach, CA. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/ P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

15-19"Multiphase Organic Transport Modeling with Emphasis on Pollution by Hydrocarbons" Dr. J. Parker, et.al., International Ground Water Modeling Center CONTACT: Holcomb Research Ins. Butler U., 4600 Sunset Ave., Indianapolis Indiana 46208 (317)283-9519.

23-25"A Comprehensive Approach to Development and Protection of Ground Water San Francisco, CA. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

#### NOVEMBER 1990

4-9"Symposium on Urban Hydrology" Denver, CO. Amer. Water Resources Assoc. (AWRA). CONTACT: AWRA (301)493-8600 5410 Grosvenor Lane, Suite 220, Bethesda, Maryland 20814-2192.

6-8"Theory and Application of Vadose Zone Monitoring, Sampling, Remediation" Las Vegas, NV. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

9"Environmental Site Assessments One-Day Legal Course" Las Vegas, NV. Assoc. of Ground Water Scientists and Engineers (NWWA). CONTACT: NWWA (614)761-1711/P.O. Box 182039/Dept. #017/ Columbus, Ohio 43218.

INDEPENDENT INSTRUCTORS FOR GEOLOGISTS AND ENGINEERING **GEOLOGIST EXAMS - COURSE LOCATIONS FOR 1990** REG Review, Inc. is starting classes for the upcoming geologist exams in September. They will be held at the following locations over the next few months.

San Diego (SD) Limit 15 Woodward Clyde Consuls. Converse Environ. West 1550 Hotel Circle North San Diego, CA 92108

Pasadena (LA) Limit 20 3393 East Foothill Blvd. Pasadena, CA 91109

Costa Mesa (CM) Limit 15 Converse Environ. West 151 Kalmus Drive, Suite H Costa Mesa, CA 92626

SERIES I COURSES April June, 1990 SERIES II COURSES July August, 1990 For more information CONTACT: REG REVIEW, Inc. 6555 Oakwood Drive Oakland, CA 94611 (415) 339-3771 Lisa Dirth (415) 852-9099 Patti Osiecki

Series I and Series II Courses present the same material in two five hour sessions. Courses cover the major topics expected on the California Geology Registration Exam. Major emphasis is given to understanding the principles of structural geology, map interpretation, California geology, geologic hazards, hydrogeology, and engineering geology. Questions and problem solving are an integral part of the course. Class size is limited (from 15 to 20 people depending upon course location) to encourage individual participation and preparation. Provided with the course registration is the 1990 edition of the Study Manual. A Manual will be mailed to all course preregistrants upon receipt of fees.

The 1990 Study Manual is a copyrighted publication that presents technical information important to know for the California Geology Registration (R.G.) and Certified Engineering Geology (C.E.G.) Exams. Technical text, figures, sample problems and answers, and a reading list are highlights of the book. The Study Manual is also offered for separate purchase. The price of \$75.00 includes sales tax (where applicable), Priority Mail postage, and handling. Rush order postage is extra. Estimated publication date for the 1990 Study Manual is March 1, 1990.



Richmond, CA 94804 (415)233-3200

1050 Marina Way South 17800 Castleton St., Ste 175 City of Industry, CA 91748 (818)965-4048

Offices Located Nationwide

#### **Professional Services**

Business-card size advertisment space available for \$ 50.00/year.



≡**Ö**≔ SIERRA BRAVO COMPANY

#### GEOPHYSICS FOR:

ENGINEERING-GROUNDWATER-ENVIRONMENT

- SEISMIC REFRACTION/REFLECTION
- GROUND PENETRATING RADAR
  - ELECTRICAL
  - MAGNETICS
    - GRAVITY

PROPERTY TRANSFER SURVEYS SITE ASSESSMENT SURVEYS GEOPHYSICAL EQUIPMENT RENTAL

PO BOX 152 WOODBRIDGE CA 95268 (209) 339-8791

#### **RICH DARBY**



CO. **EXCAVATION CO.** DRILLING, LP

"WE DRILL & DIG HOLES." TESTPITS/BORINGS, CAISSONS, FOOTINGS, FOUNDATIONS GRADEBEAMS, UNDERPINNINGS/PADS, SEEPAGE PITS

L.A. COUNTY: 1117 E. WALNUT STREET P.O. BOX 94656 PASADENA, CA 91109-4656 (818) 793-5293

ORANGE COUNTY: P.O. BOX 3241 COSTA MESA, CA 92628-9998 (714) 645-3127

## **MOORE & TABER** GROUTING DIVISION

Compaction Grouting • Level Surveys Slope Inclinometer Installation

1290 N. HANCOCK, P.O. BOX 19079 • ANAHEIM, CA 92817 • (714) 779-2591

5620 DISTRICT BLVD., SUITE 103 • BAKERSFIELD, CA 93313 • (805) 833-1743

16760 WEST BERNARDO DR. • SAN DIEGO, CA 92127 • (619) 487-2113

#### San Diego *inuo¤M*oore

Geotechnical and Environmental Sciences Consultants

- Soil Engineering
- Geology
- Hydrogeology
- **Environmental Assessment** Regulatory Compliance

Gregory T. Farrand Principal Geologist

10225 Barnes Canyon Road • Suite A-112 San Diego, California 92121 Phone (619) 457-0400 • Fax (619) 558-1236

## DID IT MOVE, OR DIDN'T IT?



#### Our automated deformation-sensing systems give you the graphic answer!

Now, track the tilts, bulges, bends and displacements of • Dams • Tunnels

- Tanks Landslides Bridges
- Buildings Roofs Any Structure.

Our systems take continuous static and dynamic readings. Then report to you. Wherever you are in the world.

- ► Structural testing
- ► Warning of unsafe conditions
- ► Long-term monitoring



1336 Brommer St., Santa Cruz, CA 95062, (408) 462-2801 • Fax (408) 462-4418

ZIP-A-DIP® Combination protractor, scales, and most efficient apparent dip calculator designed.

Only \$3.00 each (2-10/\$2.50; 11+/\$2.00). Brochure describes ZIP-A-DIP, stereonet plotters, stratigraph, field bags and quantity prices.

Please send brochure only [

Address

ZIP-A-DIPS Quantity \_\_\_\_\_ Amount \$ \_\_\_

Name

To: ZIP-A-DIP, 1318 2nd St. #25, Santa Monica, CA 90401 USA

## One Source for All Your Geotechnical Instruments

We offer a full line of Geotechnical • Inclinometers Instruments with accessories and • Inclinometer Casing support at competitive prices. Ask us about our rental systems.

3860 148th Avenue N.E., Redmond, Washington 98052 USA Phone: (206) 883-7300 Telex: 15-2070 Fax: (206) 882-1412

- Tilt Sensors
- Piezometers
- Settlement Systems
- Load Cells
- A SUBSIDIARY OF ROCHESTER INSTRUMENT SYSTEMS **Data Acquisition Systems**



TERRA #

Amer R. Al-Alusi President

Compaction Grouting Lense Grouting Chemical Grouting PressGrout Piles

Geotechnical Stabilization, Inc.

3970 Sorrento Valley Blvd., Suite A - San Diego, CA 92121 619/546-0202 • FAX 619/546-3893

5

#### Positions Available

Advertisements for Student & Part-Time "Positions Available" are Welcome. There is no charge for advertisement.

Career Opportunities For Hydrogeologists, Geologists, Civil & Environmental Engineers

Openings are available for Hydrogeologists & Geologists (0-4 yrs experience) and for senior level Civil & Environmental Engineers. Openings are available in the City of Industry office and the Newport Beach office. In addition, positions for experienced ground water and soils remediation specialists are available in offices throughout the United States. Salary is nagotiable commensurate with experience. CONTACT: (818) 965-4048 Tom Sheahan-Industry oxf714 474-9344 Jim Norman-Newport Beach

or send resume to: Geraghty & Miller, Inc. Attention: N. Thomas Sheahan 17800 Castleton St. #175 City of Industry, CA 91748

> Career Opportunities For Geologists, Environmental Geologists/ Hydrogeologists

Openings are available for project/senior staff geologists.
Requirements include a BS/MS in Geology, RG (CEG highly desirable) and at least 4 years of experience. Responsibilities will include project management, analysis of geologic mapping and exploration and staff supervision.
Openings are available for environmental geologists/hydrogeologists. Requirements include a BS/MS in Geology RG and five years of experience in environmental services filed. Responsibilities will include project management. Groundwater modeling experience is highly desirable. Salary is negotiable and commensurate with experience. CONTACT: (714) 250-1421

or send resume to:
Leighton & Associates
Attention: Vicky Overly
1151 Duryee Avenue
Irvine, CA 92714

Career Opportunity For Engineering Geologist

Immediate opening is available for an engineering geologist with 2 or mor years of experience in field mapping, trench/boring logging, and report writing. B.S. in Geology required. Preferred skills include writing/verbal communication with laypersons, interest in neotechtonics, landslides, and ground water. Salary commensurate with experience.

CONTACT: (714) 888-2422

or send resume to: Gary S. Rasmussen & Assoc., Inc. 1811 Commercenter W. San Bernardino, CA 92408

Career Opportunities For Geologists, Hydrogeologists Civil & Environmental Engineers Openings are available for several positions. Staff Geologist

Openings are available for several positions. Staff Geologist Engineer; BS/1 year experience in waste management. Project Geologist/Hydrogeologist; BS/3 years experience or MS/2 years experience in waste management. Project Civil/Geotechnical Engineer; BS/3 years experience or MS/2 years experience in waste management. Senior Air Quality Scientist/Engineer; BS/7 years experience or MS/6 years experience as program manager, source testing.

CONTACT: (714) 346-0602

or send resume to: The MARK Group, Engs.&Geols.,Inc. Attention: David K. Rodgers, Principal 1241 E. Dyer Road, Suite 130 Santa Ana, CA 92705

> Career Opportunity For Staff Geologist

Immediate openings are available for an Entry Level Staff Geologist to perform field mapping, logging, drafting and assist in exploration. Requirements include a bachelors degree in geology. Projects include residential hillside development in the southern California area and evaluation of distressed homes and instability. Competitive salary and benefits. CONTACT: (805) 373-0087

or send resume to:

Robertson Geotechnical, Inc.
2500 Townsgate Road, Suite E
Westlake Village, CA 91361

Attn: Hugh S. Robertson

Career Opportunity For
Hydrogeologists, Geologists &
Environmental Engineers

Openings are available for entry level through senior level Hydrogeologists, Geologists and Engineers. Environmental experience should include proven field experience in UST programs, site characterization, remedial action plans and/or feasibility studies for soil and ground water contamination. Requirements are a record of successful project development and management. Excellent verbal and written skills required. Advanced degree preferred. Competitive salary.

Converse Environmental West Attention: J.A. Campbell 67 W. Bellevue Dr., Pasadena, CA 91105

Career Opportunity For Staff Geologists

Openings are available for staff level positions in the engineering geology department of the San Bernardino office. Requirements include a bachelor's degree in Geology, approximately 2 years of experience in engineering geology (understanding of mass grading a plus), and writing and communications skills. Salary is negotiable and commensurate with experience.

CONTACT: (714) 889-8004

or send resume to:
Converse Consultants Inland Empire
Attention: David B. Simon
630 E. Brier Drive, Suite 100
San Bernardino, CA 92408

Career Opportunity For Geologist/Hydrogeol./E.G.

Opening is available for a project level Geol./Hydrogeol./ Eng.Geol. with 3 to 5 years experience to direct field operations for characterization of contaminated sites. Strong candidate will have detailed knowledge of drilling, sampling, and installation of ground-water monitoring wells, excellent communication skills and be computer literate with writing skills. Salary is negotiable and is commensurate with experience.

CONTACT: (714) 341-9353 or send resume to: Remedial Action Corp. Attention: David A. Sommers 505 N. Tustin Ave., Suite 160 Santa Ana, CA 92705

Kelly E. Rowe AEG Secretary/Newsletter Editor c/o Geraghty & Miller, Inc. 17800 Castleton Street, Suite 175 City of Industry, CA 91748





