

Inland Geological Society

Newsletter of the Inland Geological Society

Volume 23 No. 3

***This
Meeting:***
**Thursday
March 1st**

Time:

Social: 6:00pm

Dinner: 7:00pm

Lecture:

7:30pm

NEW Location:

LSA Associates

1500 Iowa Ave

Suite 200

Riverside, CA

92507

(Map on Pg.6)

Coming to

Dinner?

Please RSVP:

By Monday 2/26

(951) 782-3295

food@inlandgeo.org

or

dlass@waterboards.

ca.gov

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March Speaker:

Dr. John Izbicki

USGS, San Diego, CA



Fecal indicator bacteria from ground-water discharge to recreational beaches, Santa Barbara, California

By: John A. Izbicki, Peter W. Swarzenski, and Keith J. Halford

E. coli and enterococci concentrations in shallow wells near the ocean in Santa Barbara, California beach range from less than the detection limit to 1,300 and 13,000 MPN/100 ml, respectively, and may be a source of fecal indicator bacteria (FIB) contamination to recreational beaches. Potential FIB contamination from ground-water was evaluated over several tidal cycles at the beach/ocean interface during a high-amplitude "spring tide" and during decreasing-amplitude tides between spring and neap tide. Seepage-meter measurements of ground-water discharge at the beach/ocean interface varied with tidal stage reaching a maximum of 6.9×10^{-4} cm/s at low tide, and were similar to estimates derived from ^{222}Rn data. $^{224/223}\text{Ra}$ activities yielded offshore mass-mixing velocities of 0.06 cm/s, suggesting rapid dilution

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Fecal indicator bacteria (Continued from Pg. 1)

of FIB from ground water in near-shore ocean water. During the falling tidal stage after "spring tide", FIB concentrations in near-shore ocean water exceeded primary contact standards for recreational water and were higher than FIB concentrations in shallow ground water near the beach/ocean interface. Increases in ammonia and phosphorous concentrations during this falling tidal stage were greater than could result from ground-water discharge, but were consistent with contributions from kelp and other detritus along the high-tide line that also may harbor FIB from birds and other animals. Samples from wells and the near-shore ocean also were analyzed for genetic, fatty-acid, wastewater-indicator, fecal-sterol, and optical-property data to help determine the source of FIB. A ground-water-flow model will be used to assess movement of water and FIB along the cross section assuming scenarios of ground-water recharge, tidal fluctuations, stormflow and sewer discharge to beach sands.

Biography:

John Izbicki attended West Virginia University, Penn State University, and obtained a Ph.D. from the University of California, Riverside, in 2000. Dr. Izbicki worked as a hydrologist for the U.S. Geological Survey for 25 years and spent the last 15 years in southern California. While in California, he has focused on studies designed to apply environmental tracers to further the understanding of physical hydrologic processes. These studies addressed issues related to seawater intrusion and brine invasion; natural and artificial recharge processes; stormwater and beach contamination; well-bore hydraulics; and the occurrence and distribution of trace elements in desert environments.



Upcoming IGS Talks

Apr. 4, 2007 (Wednesday)

Greg Johnson, PG, CEG
Los Angeles Department of Public Works
Hume Road Landslide, Malibu, CA
"Going Three-Rounds With An Active Landslide"

May 15, 2007 (Tuesday)

Joint meeting sponsored by IGS, SME
and CSU San Bernardino Geology Dept. at CSUSB
Texas BBQ Dinner and two programs:

- Brian Fortelka, CA Portland Cement, "Colton Cement – a 115 year partnership;" and,
- CSUSB Underground Mine Mapping Class, Broken Hill, Australia, Summer 2006 – Video

June 6, 2007 (Wednesday)

TBA/Unscheduled (need suggestions)

July 5, 2007 (Thursday)

TBA/Unscheduled (need suggestions)

August 1, 2007 (Wednesday)

TBA/Unscheduled (need suggestions)

September 6, 2007 (Thursday)

TBA/Unscheduled (need suggestions)

October 3, 2007 (Wednesday)

TBA/Unscheduled (need suggestions)

November 1, 2007 (Thursday)

TBA/Unscheduled (need suggestions)

December 5, 2007 (Wednesday)

TBA/Unscheduled (need suggestions)

Inland Geological Society Seeks Speaker Topics and Speakers

Informative and interesting talk topics and speakers on subjects in the earth sciences have always been a highlight and purpose of regular monthly meetings of the Inland Geological Society for over 20 years. Local and regional topics and speaker programs are essential for a group that meets monthly and is comprised of local or regional residents or employees, professionals, and interested parties alike.

Currently, IGS is seeking suggestions for future talk topics and suggestions for potential speakers. Your suggestions and ideas are very important, so that we can cover a cross-section of subjects and interests

As you can see, we need help identifying speakers and/or speaker topics. Please forward your ideas and suggestions to [Thomas Deane](mailto:deanehydro@verizon.net) at deanehydro@verizon.net or [Phuong Chau](mailto:Phuong_k_chau@yahoo.com) at Phuong_k_chau@yahoo.com or both!



Announcements/Upcoming Events

Meeting:

AEG, Inland Empire
 Mar. 21, Wed. • Ontario, CA
[Dr. Kenneth Hudnut, USGS](#)
 'B-4 LIDAR, SoSafe (San Andreas Fault Evaluation) Project

Meeting:

AAPG Annual Convention and Exhibition
 April 1-4, 2007 • Long Beach, CA
[Understanding Earth Systems](#)
<http://www.aapg.org/longbeach/>

Meeting:

20th Anniversary SAGEEP
 Symposium on the Application of Geophysics to Environmental & Engineering Problems
 April 1-5, Marriott City Center, Denver, CO
<http://www.eegs.org/sageep/index.html>

Meeting:

American Institute of Hydrology (AIH)
 Integrated Watershed Management:
 Partnerships in Science, Management, and Planning, April 22-25, Reno, NV
<http://www.aihydro.org/conference.htm>

Meeting:

AEG 1st North American Landslide Conference
 June 3-8, Vail Marriott, Vail, CO
<http://www.mines.edu/academic/geology/landslidevail2007/>

Winter Short Course:

Groundwater and Related Topics

Sponsored by IGS, AEG-IE, & UCR Earth Scis.

March 10, 2007, Saturday

UC Riverside Extension
 \$70 IGS/AEG Members
 \$75 Non-Members
 \$10 Students

Speakers and titles:

- Jim Finegan (GeoSyntech) 'Numerical groundwater flow and contaminant transport modeling'
- John Izbicki (USGS) 'Natural and artificial recharge in the western Mojave Desert'
- Gerard Thibeault (Santa Ana RWQCB) 'Perchlorate issues in the Santa Ana River watershed'
- Dennis Williams (Geoscience Support Services) 'Well siting and design'
- Andy Malone (Wildermuth Environmental) 'Computation of groundwater quality objectives for the basin plan update (Santa Ana Region)'
- Wes Danskin (USGS) 'Groundwater issues in the Bunker Hill basin'

See separate flyer for details or contact an IGS/AEG-IE officer.



UCR'S HOMECOMING EXTRAVAGANZA
Honoring 50 Years of Excellence - Department of Earth Sciences

UCR is inviting alumni back home for their Homecoming Extravaganza. The College of Natural Agricultural Science wishes to honor the Department of Earth Sciences in its annual Homecoming Extravaganza on Saturday, February 24, 2007 from 2-5pm. This event will feature specialty beer tasting and delicious BBQ! Children of all ages can enjoy the portable rock wall and various hands on activities including: rock identification, and the stomp seismograph. The featured presenter will be alumnus Susan Cummins Millers. She is an author of a well received three part mystery series based on a fictitious geologist called Frankie Macfarlane. There will also be two other events hosted by the Earth Sciences Department. At 12:00pm, there will be a welcome lunch for alumni. Lunch is \$5 per person (pay at the door) with children 12 and under free. After Homecoming, everyone is invited to Dr. Mary Droser's residence for an intimate dinner. Dinner will begin at 6:30pm and children are welcomed to attend. The cost is \$12.50 per person (pay at the door) and children 12 and under are free. During the dinner there will be the traditional Hewett Club auction, auctioning off departmental mementos. Dr. Michael Murphy, Dr. Michael Woodburne, Dr. Lewis Cohen, and Dr. Frank Dickson will also be at the events to help celebrate this exciting occasion. So come and reminisce, see where the department is now, and take a piece of the department home with you.

For more information, please see <http://www.earthscience.ucr.edu> or contact joslync@ucr.edu

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