

# Inland Geological Society

December 2011

Newsletter of the Inland Geological Society

Volume 27 No. 11

**This Meeting:**

**Wednesday,  
December 7<sup>th</sup>**

**Time:**

**Social: 6:00pm  
Dinner: 6:30pm  
Lecture: 7:00pm**

**Location:**

**LSA Associates  
1500 Iowa Ave  
Suite 200  
Riverside, CA  
92507  
(Map on Pg. 4)**

**Coming to**

**Dinner?**

**Please RSVP:**

**By Friday 12/2  
(951) 784-2168  
dixie.lass@att.net**

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**December Speaker:**

**Mr. Tony Morgan, PG, CHG**

**Hydrogeologist and Groundwater Department Manager, United Water Conservation District**

**Mr. Tim Moore**

**Staff Geoscientist, United Water Conservation District**

**Refining a Regional-Scale Groundwater-Flow Model to  
Address Basin-Specific Management Goals in Ventura County**

*Abstract*

The Ventura Regional Groundwater Model (VRGWM) is a numerical modeling tool originally developed in the late 1980s to mid 1990s to assist local groundwater management agencies in evaluating multifaceted conjunctive use, water recycling, and water conservation projects designed to alleviate seawater intrusion, overdraft, land subsidence, and other problems. The model simulates the regional groundwater flow that occurs in multiple aquifers into a three layer system (Shallow, Upper and Lower Aquifer Systems) that extends across eight basins. As groundwater management scenarios in the County became more complex there was an increased need for aquifer-specific impact evaluations, which instigated a re-evaluation of the groundwater model's functionality for sub-regional or basin-level impact assessment. A comprehensive model review with 300+ targets showed large, biased errors in areas without calibration targets, incorrect representation of hydrologic trends, and in certain areas

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poorly calibrated recharge areas. Research into the source of the biased errors showed that many of the water-supply wells used as calibration points were perforated across two or more aquifers and the resulting potentiometric surface was sensitive to which aquifer and how many aquifers were perforated.

United Water Conservation District (UWCD) has initiated a fresh look at the basin conceptual models used in the development of the groundwater flow model and is refining the basin hydrostratigraphy by adding aquifer-specific details. The additional aquifer-specific detail is being derived from multiple lines of geologic data including the review of borehole geophysical and lithological data from hundreds of water and oil/gas wells, collection and analysis of surface geophysical data (e.g., seismic reflection, time domain electromagnetics), and compilation of aquifer hydraulic parameters from many existing water-supply wells. An expanded network of pressure transducers has greatly increased the understanding of recharge area dynamics. These data sets indicate that the hydrostratigraphy is more complicated than could be characterized by the existing 3-layer model. Hydrostratigraphic interpretations from these data are being compiled into a single 3D model for each basin that will form the basis of the updated groundwater flow model. The improved data sets will allow the model to address questions dealing with, for example, aquifer/aquitard continuity and managed aquifer recharge optimization scenarios for seawater intrusion control, overdraft abatement, and recycled water use.

**Biography:**

**Tony Morgan, PG, CHG** has 30 years of experience as a hydrogeologist and is the Groundwater Department Manager for United Water Conservation District. He has directed water-supply development programs including groundwater exploration, surface and borehole geophysical survey projects, well design and rehabilitation tasks, as well as ASR facility siting studies for municipal, industrial, and agricultural interests throughout the western U.S. Mr. Morgan received his Master's and Bachelor's degrees in Geology from Indiana University and is on the Board of Directors of the American Ground Water Trust and currently serves as President of the Groundwater Resources Association - Central Coast Branch.

Tim Moore is the Staff Geoscientist for the Groundwater Department of United Water Conservation District. He is compiling an electrical log database for UWCD's efforts to add detail to the current understating of the basin hydrostratigraphy. He is also collecting TEM data in important areas of groundwater recharge. He graduated from California State University, San Bernardino in June of 2010.

**United Water Conservation District**

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timm@unitedwater.org

## Upcoming Meetings/Events

### Rock & Gem Shows—Various locations

Various rock and mineral shows will be throughout So. California. To find one near you, visit [www.rockngem.com/showdates.asp](http://www.rockngem.com/showdates.asp)

### South Coast Geological Society Meeting



The South Coast Geological Society will be holding their annual poster session and fundraising raffle on **Monday, December 5, 2011** at the Doubletree Club Hotel in Santa Ana, CA. For more info., visit

[www.southcoastgeo.org](http://www.southcoastgeo.org)

### SME—SoCal Section December Meeting



The Society of Mining, Metallurgy and Exploration (SME) is having their Annual Christmas Party with surprise speakers will be on **Tuesday, December 13, 2011** at the Pomona Valley

Mining Co. in Pomona, CA. For more info., visit [www.mine-engineer.com/socalmining](http://www.mine-engineer.com/socalmining)

### San Diego Assoc. of Geologists Meeting

Mr. Tom Démeré will be presenting a talk on the "San Diego Paleontology" on **Wednesday, December 14, 2011**. For more info, visit [www.sandiegogeologists.org](http://www.sandiegogeologists.org)

### San Diego Assoc. of Geologists Meeting

Dr. Barry Keller will be presenting a talk on the "Chilean Earthquake/Inka Road" on **Wednesday, January 18, 2012**. For more info, visit [www.sandiegogeologists.org](http://www.sandiegogeologists.org)

### San Diego Assoc. of Geologists Meeting

Mr. Mike Buga will be presenting a talk on the "San Jacinto Fault Work Update—Clark Lake and Hog Lake" on **Wednesday, February 15, 2012**. For more info, visit [www.sandiegogeologists.org](http://www.sandiegogeologists.org)

### REG REVIEW, Inc.—ASBOG Study Course

Are you taking the Fundamentals and/or PG exam in March 2012? REG REVIEW, Inc. will be offering a study course on **Saturday, January 7, 2012** for the California Supplemental Portion and **Sunday, January 8, 2012** for the ASBOG® Portion. The courses will be offered at the Best Western Orange County Airport in Santa Ana, CA. For more info., visit [www.regreview.com/](http://www.regreview.com/)

## IGS Meeting Schedule

### **January 12, 2012 (Thursday)**

TBA

### **February 1, 2012 (Wednesday)**

Mr. Marvin F. Glotfelty, RG,  
2012 McElhiney Lecturer  
*Life-Cycle Economic Analysis of Water Wells—  
Considerations for Design and Construction*

### **March 1, 2012 (Thursday)**

TBA

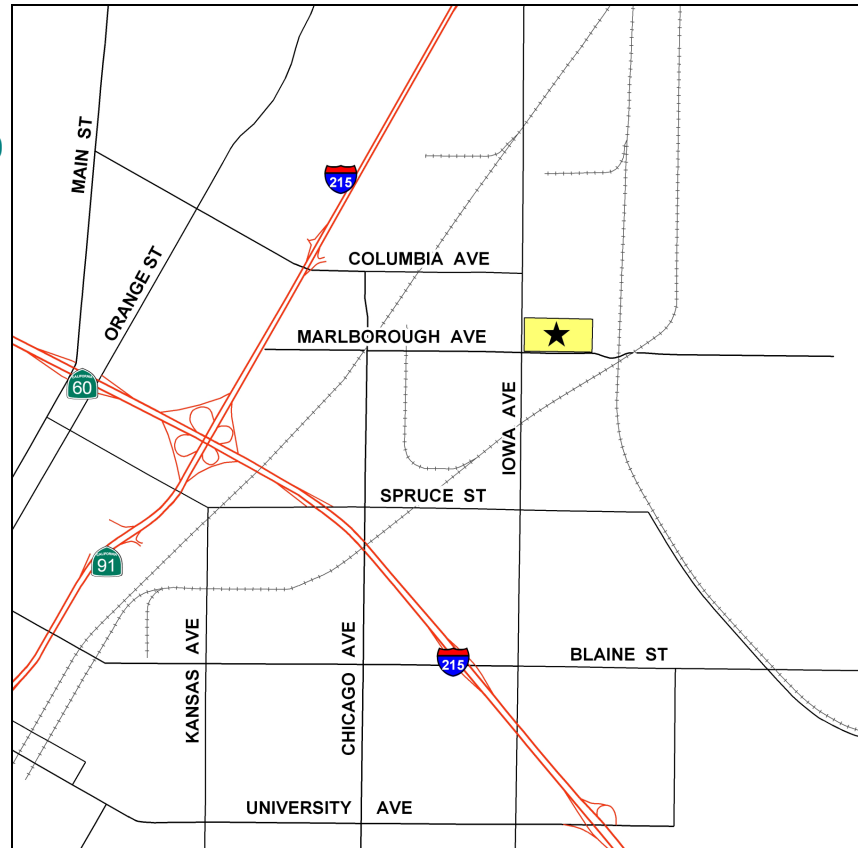
### **April 2012 (Date to be Determined)**

Joint Meeting with Society of Mining, Metallurgy, and Exploration (SME)  
Meeting will be held at the California State University, San Bernardino



**IGS MEETING LOCATION:**

**LSA Associates, Inc.  
1500 Iowa Ave, Suite 200  
Riverside, CA 92507**

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