

# ARIZONA HYDROLOGICAL SOCIETY

June, 2007

## Viewpoint: Getting It Done for AHS

I went to two events in May that demonstrate just what AHS is all about.

Dana Downs-Heimes and Erin Young of the Flagstaff Chapter put on a great field trip to Camp Navajo and the Bellemont area. The day started with a series of talks about the history and hydrogeology of the area. Another Flagstaff Chapter stalwart, Don Bills, presented an overview of the regional aquifer system vs. various perched zones which supply shallow wells in the vicinity. Two structural trends dominate the hydrogeology, one an older system of faults and folds oriented northwest/southeast and associated with Tertiary tensional movements, and the other a younger system of faults striking NNE. The bus for the base tour was volunteered by Jay Click of ADT Drilling, who also offered to buy everyone lunch at the local biker bar (an offer we couldn't refuse). Led by Randy Wilkinson and Matt Nations, we saw fault scarps, sinkholes, and a vast prairie with an extensive drainage. We saw many shallow wells, and two deep wells, an older one on Camp Navajo and a new well in the Flagstaff Meadows subdivision north of I-40. Watching the new well video log DVD aboard the bus, I was amazed at the size of the open fractures in the fault zone at about 2400 ft.

The Flagstaff Chapter hosted an event that was both fun and professionally rewarding, which is the whole point of the Arizona Hydrological Society. Dana and Erin secured the cooperation of Camp Navajo, organized the talks, provided the snacks, and kept the whole event moving on track. Without their volunteer efforts, the nearly 40 people who showed up wouldn't have had such a fantastic day.

Just a few days later the Phoenix Chapter hosted an event that drew almost 65 attendees. LeeAnna Walker, Beth Proffit, and Ted Lehman organized a soil gas technical seminar that was timely and informative. They put in a lot of time organizing the talks and obtaining good speakers. Mike Hulst volunteered to print up the presentations so that everyone could take notes, and ADWR provided the venue. The talks ranged from the acceptance of soil gas re-

sults for compliance purposes in the new soil remediation rule, to theoretical considerations underlying models such as VLEACH or analytical screening tools. Vapor intrusion, the migration of VOCs from the subsurface into buildings, is the hot new topic, and several speakers addressed various guidelines from EPA, ITRC, ASTM. ADEQ guidelines are still in development. Sampling strategies and methods and laboratory analytical techniques were also discussed.

Professional development was the reward of all who attended the Soil Gas Technical Seminar hosted by the Phoenix Chapter. AHS benefited in that the money raised will support the Hermann Bouwer Intern Scholarship for at least one year, maybe more. But none of this would have happened without the investment of time and effort by our volunteers, especially LeeAnna, Beth and Ted.

That's what it takes to get things done—volunteers. People willing to give their time and energy to make events happen and keep AHS the lively professional organization it is. How about it? *Are you* willing to step up for AHS?

Oh, and the name of that large wash draining Camp Navajo? Volunteer Wash.

Alan Dulaney  
AHS President 2007



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## Update on 2007 Annual AHS Symposium

Sustainable Water, Unlimited Growth, Quality of Life



.Workshops at AHS' 20th Annual Symposium!

- Gary Burchard, Metro Water District &

Betsy Woodhouse, Southwest Hydrology

Symposium Co-Chairs

The Symposium planners are offering an exciting array of workshops, which we hope will round out a memorable Symposium experience. On Wednesday, August 29<sup>th</sup>, you can choose from four on-site or one off-site workshops.

**Tools and Methods for Land-Subsidence Studies** is a full-day workshop at the Westin La Paloma. This one-day technical workshop will cover tools and methods for studies of land subsidence that commonly occurs in the Southwest as a result of groundwater extraction. The focus is on understanding and predicting subsidence at the basin scale. This workshop will be taught by Stan Leake, Randy Hanson, Gerald Bawden, Michelle Sneed, Devin Galloway, and Keith Prince all with the U.S. Geological Survey as well as Muniram Budhu, Director of the Arizona Geohazards Research Center at the University of Arizona.

**Water Well Performance** is a full-day workshop also at the Westin La Paloma. Marvin Glotfelty with Clear Creek Associates will moderate eight experts from around the country who will present sessions covering an introduction to

water well performance, groundwater asset management, economic considerations, microbiological impacts on well performance, well rehabilitation methods, procedures and mechanics of chemical rehabilitation methods, and water well flow profiling.

**All-Appropriate Inquiry** is an afternoon workshop at the La Paloma that will be presented by Jane Mills with Golder Associates. Tougher environmental due diligence standards for Phase I Environmental Site Assessments became effective on November 1, 2006. Discussion will include practical applications and impacts of the new Rule on real estate transactions, and the impact of the Environmental Professional designation on consultants. The future development of Standards for Vapor Intrusion, Continuing Obligations, and other related topics also will be discussed.

**Scenario Development and Applications** is a full-day workshop also offered at the symposium venue. Scenario planning is the formal process of rigorous evaluation of plausible, yet uncertain future events, and their implication for decision making. This workshop will enhance the capabilities of decision-makers and stakeholders to conduct scenario planning exercises for their own water resource planning purposes. Workshop attendees will gain an understanding of the science behind scenario planning,

learn how scenarios have been used to tackle water planning issues across the state, and participate in an ongoing process for developing and refining scenarios for the Southwest. This workshop will be led by three scientists from the University of Arizona, Holly Hartman, Steven Stewart, and Yuqiong Liu.

The **ESRI/ArcGIS Hydro Tools** is an afternoon workshop conducted off-site at the University of Arizona GIS Lab. Participants will learn about ESRI's latest Arc software suite, version 9.2 and a wealth of new features and capabilities support enhanced data storage, analysis, modeling and visualization, including the ability to gracefully handle true 3-D time series data sets. This workshop will be lead by experts from ESRI.

During the morning, Saturday, September 1<sup>st</sup>, you may participate in the **Rainwater Harvesting** workshop conducted off-site at The Nature Conservancy Tucson Campus. Rainwater should be added to the list of water resources used by community managers, planners and utilities. Participants at this workshop will gain hands-on experience of water harvesting techniques. The workshop will also offer a panel discussion on associated topics. The workshop will be lead by James Riley with the University of Arizona. In conjunction with the Rainwater Harvesting workshop, the Symposium is

*(Continued on page 3)*

## 2007 Annual AHS Symposium cont.

(Continued from page 2)

offering a field trip, **Harvesting Rainwater for Sustainable Living**. This field trip will depart in the afternoon from the workshop location. One may choose to participate in either the workshop, the field trip, or both; and to facilitate these options, registration for each is separate. This field trip will take you to innovative water harvesting sites in the Tucson area to see micro basin landscaping, swales and terraces, French drains, porous pavement, and cisterns. The trip will also feature informative presentations by site designers and experts in the water harvesting field. The field trip will be led by

Frank Sousa with the City of Tucson Office of Conservation and Sustainable Development and by Grant McCormick with Facilities Management at the University of Arizona.

Please note that the Tools and Methods for Land-Subsidence Studies and the Water Well Performance workshops offer a price break for full-time Symposium attendees.

When you register, remember to reserve your room. The low rates (\$109 single/double, \$83 for government employees) are good three days before and after the meeting. The room block is

limited so don't wait to make your reservation.

We still have ample opportunities for sponsorship and exhibitors. Without your support, grand events like the joint 2007 Southwest Hydrology/Arizona Hydrological Society Symposium wouldn't be possible.

Please visit

[www.watersymposium.com](http://www.watersymposium.com) for more information on the program, workshops, field trips, registration, or to be a sponsor. The site is updated weekly.

### 2007 ANNUAL AHS SYMPOSIUM SPONSORS/ EXHIBITORS UPDATE - Mike Block, Symposium Fundraising Co-Chair, Metro Water District

Only three months left until the Symposium! Your opportunity to reserve an excellent exhibit space is evaporating fast.

Twelve booths are left. So if your company wants to join in on what will be a premier networking and educational event, get your registration in soon!

New exhibitors since the last newsletter include the Water Sustainability Program from the University of Arizona and Oglebay Norton Industrial Sands.

Many thanks to Tucson Water, University of Arizona – SAHRA, U.S. Geological Survey, Golder Associates, and Metro Water District for committing in-kind services totaling \$20,000.

If your firm or agency would like to also be a sponsor (Sponsor, Supporting, Corporate, Exclusive Event - Wednesday Night Icebreaker, Thursday or Friday Break, or Field Trip) or an Exhibitor, please go to the Symposium AHS website at [www.watersymposium.com](http://www.watersymposium.com) or contact me at (520) 575-8100 or [mblock@metrowater.com](mailto:mblock@metrowater.com).

On the behalf of the Symposium Planning Committee, I would like to again thank all of our donors for your incredible generosity and support for a successful 2007 Symposium.

# JOBS

## GREAT NEWS!

The JOBS web page has been moved to the Public area of the AHS website. To see the latest JOB postings visit:  
[www.azhydrosoc.org](http://www.azhydrosoc.org)

## ISMAR6

### International Symposium on Managed Aquifer Recharge



#### Update on the ISMAR6 Conference (October 28-November 2, 2007)

Planning for the ISMAR6 conference is progressing at a rapid pace. Registration is now open and available online at [www.ismar2007.org](http://www.ismar2007.org).

ISMAR6 is the 6<sup>th</sup> in a series of international conferences devoted entirely to managed aquifer recharge. The conference will be held at the Pointe South Mountain Resort and will include four workshops on Sunday, October 28, followed by three days of technical talks and a day of field trips to recharge sites in the Phoenix area. Our keynote speaker on Monday, October 29 will be Dr. Ed Bouwer of Johns Hopkins University. Dr. Bouwer, who is the son of Arizona's internationally renowned Dr. Herman Bouwer, will discuss the upcoming report by the National Research Council Committee on Managed Underground Storage (MUS) of Recoverable Water. As chair of the committee, he will present a discussion of the biogeochemical, engineering, and institutional factors that may affect the performance of MUS technology. He will review possible water quality impacts of MUS and present recommendations on long-term impacts of MUS and the opportunities and challenges of incorporating MUS projects into water management strategies.

The conference will include papers and poster sessions presented by authors from 27 different na-

tions and 14 U.S. states on a wide range of topics related to aquifer recharge including the practical aspects of recharge as experienced in such diverse places as Europe, the Middle East, Africa, India, Australia, Mexico, Japan, Taiwan and many regions of the U.S. We also expect to feature more than 80 poster papers from around the world. The workshops on Sunday, October 28 will cover recharge techniques, hydraulic property characterization and monitoring, the application of geochemical techniques in managed aquifer recharge studies, and the design and construction of recharge and recovery wells.

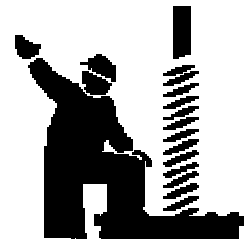
In addition to the many activities associated with the conference, we have also just added a post conference field trip to **Las Vegas, Nevada** where participants will be able to see the many recharge facilities constructed by the Las Vegas Valley Water District. These include state-of-the-art ASR wells and water treatment infrastructure. The field trip will be on Saturday, November 3 from 9am to 4:30pm. To sign up, please contact Barbara Murphy at [bmurphy@clearcreekassociates.com](mailto:bmurphy@clearcreekassociates.com). You can view the details of the field trip to Las Vegas on the ISMAR6 website.

**DO NOT MISS OUT ON THIS OPPORTUNITY TO PARTICIPATE IN AN INTERNATIONAL CONFERENCE IN OUR VERY OWN BACKYARD!**

#### AHS SAYS THANKS FROM A TO Z

AHS again received an annual royalty check from National Ground Water Association (NGWA) and this time for \$98. This windfall was made possible by the generosity of AHS members Marvin Grotfelty and Sheryl Gordon, who along with Ronald Peterson, wrote a book for the National Ground Water Association entitled "Glossary of Driller's Terms." As many of you may remember, Marvin and Sheryl were kind enough to donate half of their royalties to AHS and the other half to the Arizona Water Well Association. We are very appreciative of their efforts both to write the guide and to share the fruits of their labors. Thanks a bunch!

To order a copy of the glossary, please either visit Clear Creek Associates' website and click onto "Check the Drilling Word of the Week" and follow the links. The cost for NGWA members is \$25.00 and \$31.25 for non-NGWA members.



## Announcements

Call for Abstracts  
Due June 29, 2007

### DESERT REMEDIAL ACTION TECHNOLOGIES WORKSHOP



October 2-4, 2007  
Phoenix, AZ

Workshop Sponsors:



The first U.S Environmental Protection Agency sponsored Desert Remedial Action Technologies Workshop will be held in Phoenix, Arizona on October 2-4, 2007. The 2-day workshop will be cosponsored by the Arizona Department of Environmental Quality. An optional field trip will be offered on October 4, 2007. There will be no fee to attendees for this workshop. This will be the first EPA-sponsored workshop to focus on remedial technologies being successfully applied in desert environments. The program will emphasize field applications and case studies for technologies being applied to dissolved phase volatile organic compounds (VOCs), specifically trichloroethene [TCE], perchlorate, and chromium. Abstracts to be considered for placement in the program will be due by June 29, 2007. Poster presentations are welcome to present innovative technologies within the technical program scope, and are not limited to successfully applied technologies, but may present emerging technologies with desert applications. Preferred accommodations will es-

tablished in the Phoenix area and announced at a later date.

**Technical Program Scope:**

Presentations will cover innovative, emerging, proven technologies to remediate dissolved phase volatile organic compounds (VOCs), perchlorate, and chromium specifically in desert environments. The focus will be on insitu technologies. Desert Remedial Action Technologies Workshop (D-RAT):

**Abstract Submission:**

**Content:** All abstracts should be no more than 1 page in length and include content consistent with the technical program scope. A maximum ½ page biography should accompany all abstracts. **Format:** All abstracts should not exceed one standard page in length. All abstracts must be presented in English in Microsoft Word format.

**Submission:** Use the form included with this call for abstracts when submitting abstracts.

**Confirmation of Receipt:** Confirmation of

receipt of the abstract will be done by email within one week of submittal.

**Electronic submission is preferred. Review:** Abstracts received by the due date will be reviewed for currency, technical merit and relevance to the workshop. **Notification of Acceptance:** Notification of acceptance decision will be mailed by July 20, 2007.

**Proceedings:** Acceptance letters will include directions on providing abstracts and presentation materials to be available online to the attendees at the workshop. The anticipated deadline for slides and finalized abstracts is August 31, 2007. **Electronic submission is preferred. Inquiries:** All inquiries regarding submission and content of abstracts should be addressed to Mary Aycock, Aycock.Mary@epa.gov, (415) 972-3289. Additional workshop information will be available in a forthcoming website. Desert Remedial Action Technologies Workshop (D-RAT):

## PHOENIX CHAPTER NEWS

### May Meeting Summary

Mason R. Bolitho from Arizona Department of Environmental Quality (ADEQ) gave an overview of the Environmental Protection Agency's (EPA) Underground Injection Control Program (UIC), on May 8<sup>th</sup> to the Phoenix Chapter. Mason is a Senior Hydrogeologist in the Aquifer Permit Program at ADEQ. Mason presented on the history, rules and regulations of the EPA's UIC. The UIC is part of the Safe Drinking Water Act (SDWA). There are five classes of injection wells, with class V being the most common injection well type. UIC permits in Arizona have been issued for class III and V, but no injections of hazardous materials or oilfield brines are known to exist in Arizona.

In Arizona, an injection project needs a UIC permit when injection will be done into a zone isolated from an Underground Source of Drinking Water (USDW). Injection wells must be located, constructed, and tested to ensure contamination of USDW's does not occur. All injection wells must also meet state and local government standards.

The Phoenix Chapter would like to thank Mason for sharing his time and knowledge with our group.

### June Meeting

Tuesday, June 12, 2007

4:30 Chapter Board Meeting (all members welcome)

5:30 Social Hour

6:15 Order Diner

6:30 Dinner

7:15 Meeting with Speaker Presentation

Speaker: Syed Amanatullah, AMMTEC

Topic: "Aquifer Protection Permitting"

Location: Uno's, Downtown Tempe.

Please, RSVP by Monday, June 11th, to Beth Proffitt at [eproffitt@transgeo.com](mailto:eproffitt@transgeo.com).

### AHS/AEG Student Night Winners

The 2nd Annual AHS-AEG-Arizona Chapter student night was held on Wednesday, April 25th with great success! The event was organized by Chase White of MACTEC and was held on the University of Arizona's campus in Tucson. We had 14 companies set up booths for the mini career fair and over 20 students attended the event. Four student presentations were given by:

Chris Crosby, ASU, Geology  
Cassandra Fowler, ASU, Civil Engineering  
Vanessa Escobar, ASU, Geology  
Gerald Aspiras, Matt Crawford, & Scott Cylwik, UofA, Engineering Geology

The top award of \$200 for best presentation went to Gerald, Matt, and Scott. \$50 prizes were also given to the other speakers. Student night was very successful this year! Many thanks to Chase White for organizing the event.

### Bouwer Internship Winner

The Phoenix Chapter is delighted to announce the Herman Bouwer Internship winner for 2007. This year's winner is Vicki Mills. Vicki is an undergraduate student in geology in the School of Earth and Space Exploration at Arizona State University. Vicki will graduate in fall 2007 and plans to continue her education in graduate school. Vicki is ultimately planning a career in hydrology. She is looking forward to the internship as an avenue to develop her experience in the water industry and focus her graduate studies. The Phoenix Chapter would like to thank Steve Acquafredda and the rest of the Bouwer Intern selection committee on another successful year.

### 2007 Event Calendar

July 10<sup>th</sup> – Speaker, TBD

August – no meeting

September – no meeting

October 9<sup>th</sup> – Andy Laurenzi, Sonoran Sustainable Water Management Report

## Phoenix Chapter cont.

Soil Gas  
Technical Session  
Handouts  
Available at

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

Click on Soil Gas Handouts

### Phoenix Chapter Officers

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### Prince Sultan Bin Abdulaziz International Prize for Water

The General Secretariat of the Prince Sultan bin Abdulaziz International Prize for Water announces the nomination commencement for the 3rd award of the Prize (2006-2008)

The Prize is an international award offered every two years to innovative scholar scientists throughout the world and refereed by international arbitration committees. The Prize is bestowed in five branches. One million Saudi Riyals (about \$266,000) is allocated for the Creativity Prize, while half million Saudi Riyals (about \$133,000) is allocated for each of the other four specialized branches of the Prize.

The topics of the 3rd Award are: 1-Creativity Prize: The Creativity Prize is given to every innovator or pioneer who effectively and distinctively contributes in creating a new work which is considered as a breakthrough and which is accurate, and original (whether a research, an invention, a technology or a development project) in any water-

related field. 2-Specialized Branches Prize: First Branch: Surface Water, Topic: Sedimentation Control in Surface Water Systems. Second Branch: Ground Water: Topic: Exploration and Assessment of Ground Water. Third Branch: Alternative (non traditional) Water Resources, Topic: Innovative Methods and Systems in Desalination. Fourth Branch: Water Resources Management & Protection, Topic: Water Demand Management in Urban Areas. Individuals can be nominated for the Creativity Prize only through Universities, Institutions or Government, while Individuals or Institutions can nominate themselves for the other four specialized branches of the prize.

Deadline for receiving nomination applications is December 31, 2007.

To obtain the nomination form, and for further information, please visit the Prize website: [www.psipw.org](http://www.psipw.org) or contact the General Secretariat of the Prize at the following address: General Secretariat of the Prince Sultan bin Abdulaziz International Prize for Water-Prince Sultan Research Center for Environment, Water & Desert-King Saud University P.O. Box 2454 Riyadh 11451 Kingdom of Saudi Arabia-Tel: +9661-4675571 Fax: +9661-4675574 E-mail: [info@psipw.org](mailto:info@psipw.org) / or for Journalist please contact: [pr@psipw.org](mailto:pr@psipw.org)

## FLAGSTAFF CHAPTER NEWS

### May 12<sup>th</sup> Bellemont Field Trip Summary

The **Bellemont field trip** sponsored by the Flagstaff Chapter held on May 12<sup>th</sup> was a **huge success** and we would like to thank everyone who attended! A number of representatives were present from ADWR, Arizona National Guard, the City of Flagstaff, as well as representatives from Shephard-Wesnitzer, the Pine/Strawberry Improvement District, Four Corners Environmental, AMEC, NAU Geology, Transwest GeoChem, the Nature Conservancy, and W.L Gore. We would especially **like to thank the speakers and field guides** for sharing their knowledge of the area. A warm thank you is extended to **Jay Click** and the folks from **ADT Drilling** for sponsoring lunch at the Harley-Davidson Rte 66 Bar and Grill and the use of a comfortable tour bus to visit the field trip sites!

The day commenced with a **welcome and introduction by Lt. Col Nagel**, the Camp Navajo Installation Commander. Col Nagel emphasized the importance of better understanding the hydrogeology of the area given the planned expansion of the mission at Camp Navajo and the Bellemont community. Col Nagel also shared some reflective commentary regarding the history of the base that had folks chuckling early in the morning.

**Don Bills**, hydrogeologist for the USGS, started off the itinerary with an **overview of the modeling work conducted by the USGS** that focuses on watersheds in northern Arizona. These areas are located outside of AMAs but nonetheless important due



**Don Bills and Matt Nation**

to increasing growth and development. Don provided a stratigraphic overview for the Flagstaff area, pointing out the important C-aquifer and R-aquifers and their spatial characteristics throughout northern Arizona. Don discussed the local groundwater budget and methods used to derive USGS model input parameters. This work is considered extremely relevant as it provides information regarding decreases in overall aquifer storage in a time of prolonged drought and increasing discharges resulting from growth.

**Randy Wilkinson**, Installation Restoration Program Manager for Camp Navajo, then provided a brief overview of the planned sites to visit on the Camp Navajo tour. **Matt Nation**, hydrogeologist for Brown and Caldwell, then **guided the group to three stops on Camp Navajo** that demonstrate the influence local geologic structures have on the presence or



**Randy Wilkinson and Jay Click**

lack of surface water. The first stop was at a topographically high area atop the upthrown (eastern) side of the Bellemont fault. This stop provided an orientation for the Bellemont Fault, Dunham Fault Zone, location of the DALCO deep well, volcanic units and their sources, and other important topographic and anthropogenic features. The group then traveled to the downthrown (western) side of the Bellemont Fault. It was here the vertical displacement of the fault was discussed and could be seen with Kaibab Limestone present on the upthrown side. Displacement is greatest between the underlying bedrock units, over 150 feet, and less in younger units, with a maximum displacement between shallow basalts of 65 feet. The second stop was to the Ammunition Workshop Well Field and an introduction to the Wild Bill Hill Aquifer. Much subsurface hydrogeologic detail was gained at this site from the 54 wells. On the way to the third stop, several natural springs were pointed out that discharge between the Wild Bill Hill Basalt and the underlying Camp Navajo Clay. The springs are used for water supply at Camp Navajo and records for springs used for water supply indicate a maximum yield of about 170 gpm. It has been recorded that discharges from these springs may exceed an estimated 76 million gallons during years of high precipitation. The last stop to Atherton Lake and the Bellemont Sinkholes was a real eye-opener into the extreme recharge characteristics of the area specifically along the surface of the Bellemont Fault. The sinkhole at the stop has been observed to drain water at rates over 100 gpm, and has never overflowed during periods of high runoff!

*(Continued on page 9)*



## Flagstaff Chapter cont.

(Continued from page 8)



Hungry participants then convoyed over to the **Bellemont Harley Davidson restaurant** for mingling and cook-your-own-eats which were delicious! The Click family and some of the drill crew that had worked on the Bellemont Flagstaff Meadows production well joined the group to meet everyone and talk water wells!

Following lunch, **Norm Carlson** from Zonge Engineering presented impressive results from their **Controlled Source Audio MagnetoTellurics (CSAMT) technique** used for siting the new water production wells in Bellemont (located north of Highway 40). The CSAMT lines were placed in nearly east-west and north-south orientation and positioned to include existing wells in the area. The resulting plots of conductivity indicated two strong vertical anomalies that matched the location of faults mapped at the surface: the northeast-trending sub-vertical Bellemont fault to the west and the northwest trending "unnamed fault" to the east. The CSAMT profile showed that a dry well drilled prior to the study was only several hundred feet east of this more conductive anomaly. A

well was drilled to 2,800 feet bgs into the more conductive anomaly and reportedly produced 72 gpm (HSI, PAD). Interestingly, it was mentioned during the Camp Navajo tour that the northwest-trending faults in the area are typically more productive than the north or northeast trending faults.

The next well drilled in Bellemont was along the northwest-trending "unnamed fault", into the sub-vertical conductive anomaly. This well was drilled to 2900 feet bgs and produces 371 gpm (HSI, PAD).

The last presentation for the day was by **Jay Click** from ADT Drilling. Jay explained to the audience the **dual rotary drilling method** before taking the group to visit the 2,900-foot **Bellemont Flagstaff Meadows water production well**, located on the north side of Interstate 40. The group watched a video log of the well on the way to the site. The video showed the impressive large water-bearing fractures that exist below the bottom of casing at 2,200 feet.

**Information gained from the day's events provided the participants a much better understanding of the hydrogeology of northern Arizona and the impacts of the ongoing drought, as well as the use of new technology to investigate and better understand the local hydrogeologic characteristics of the Bellemont area.**

For those interested in **more information**, the **Flagstaff Chapter** can make available copies of the Camp Navajo field trip guide and pamphlets from ADT Drilling that include well designs for the Bellemont Well and the new Doney Park production well currently under construction.



May 12, 2007 Bellemont Field Trip Participants

## Flagstaff Chapter cont.

### Other Flagstaff Chapter News

On Wednesday May 2<sup>nd</sup>, the Flagstaff chapter held a 2008 AHS Symposium planning meeting to discuss the possible merger with the AIPG annual meeting. Alan Dulaney was present to help address questions and concerns. In general the chapter is concerned about the size of merging the event and whether the chosen venue space is enough. Everyone was encouraged to visit the venue location and submit their opinions. It will be determined at the next chapter meeting whether the chapter votes to combine the meetings and under what conditions. The next chapter meeting is Wednesday May 23 at 6pm. Time and place TBA.

On Thursday May 3<sup>rd</sup>, the 2008 GSA-Birdsall Dreiss Distinguished Lecturer, Dr. Bridget Scanlon with the Texas Bureau of Economic Geology, presented her talk titled: Impacts of changing land use and land cover on subsurface water resources. Her talk was VERY interesting and was very well attended by students, University folks, and water professionals from as far as Phoenix! AHS sponsored a pizza lunch for the event. For more information on the lectures, including an abstract from the talk, visit <http://gsahydrodiv.unl.edu/general/birdsalldreiss.htm>

### Flagstaff Chapter Officers

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### From The Society Manager Jeanie Merideth



If you have ever had the opportunity to keep up a database you know what I mean when I say it is a never ending job. With people changing jobs and email addresses on a daily basis it sometimes seems impossible.

Well, with your help it's not impossible. If you change jobs, addresses, email address, etc. please take a moment to send me an email to let me know so we can update the database and the web site with your current information. This will help keep you in the "loop" of AHS happenings and will keep my return mail down to a minimum.

Thank you for your support and cooperation.

Az Hydrological Society contact info:

[Www.azhydrosoc.org](http://www.azhydrosoc.org)

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Jeanie Merideth, Society Manager

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## TUCSON CHAPTER NEWS

### Tucson Chapter monthly meeting

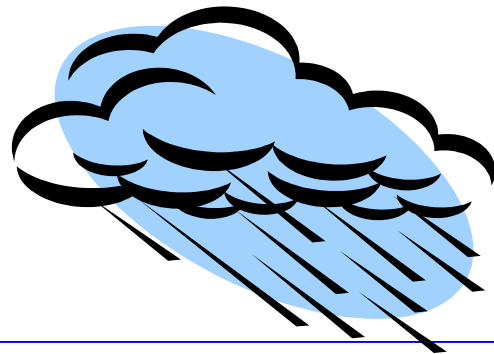
**Date:** June 12, 2007

**Speaker:**  
Erik Pytlak, National Weather Service

**Location:**  
Errol L. Montgomery & Associates, Inc.  
1550 E. Prince Road (just west of Prince  
Rd. & Campbell Ave.)

**7:00 p.m. Social half-hour**  
**(food and beverages provided)**  
**7:30 p.m. Presentation**

**Abstract:**The North American Monsoon is southern Arizona's claim to weather fame. The monsoon season is our 5th weather season here in Arizona. It is the subject of both good and bad science, and even good and bad English usage. However, it also gives our desert its unique character and its unique hydrology. Since 2004 when the multinational North American Monsoon Experiment was conducted, scientists have been getting a better handle on what drives the upswings and downswings in the monsoon, how to forecast it with more lead time, and even what will need to be researched next. Erik Pytlak, Science and Operations Officer for the National Weather Service's Tucson office, will share some information on what the monsoon is and what it isn't, and how forecasters monitor the large scale patterns to better forecast days in which flash flooding and extreme hydrologic events are more or less likely.



### Tucson Chapter Officers

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## ANNOUNCEMENTS & OPPORTUNITIES

### Water Supply in the Desert: Myths and Realities

# Thirsty for Answers?



Do you have questions about where our water comes from? What are the limitations on our water supply? What can we all do to ensure a sustainable water future? Join us at one of these five open meetings to learn about our region's water supply.

**Pima Association of Governments  
brings the water story to you.**

Please call PAG to let us know that you are coming.  
(520) 792-1093

Thursday, **June 7, 2007**  
6:00-7:30 p.m.

Councilwoman Carol West's office  
7575 E. Speedway Blvd., Tucson

Saturday, **June 9, 2007**  
10:00-11:30 a.m.

Councilwoman Karen Uhlich's office  
1510 E. Grant Road, Tucson

Tuesday, **June 12, 2007**  
6:00-7:30 p.m.

Nanini Branch Public Library,  
small conference room  
7300 N. Shannon Road, Tucson

Thursday, **June 14, 2007**  
2:30-4:00 p.m.

Joyner Green Valley Library,  
conference room  
601 N. La Cañada Drive, Green Valley

Thursday, **June 14, 2007**  
6:00-7:30 p.m.

Rancho Resort, Ballroom  
15900 S. Rancho Resort Blvd.  
Sahuarita



## More Opportunities

### Nominations Due for 2006 AHS Lifetime

#### Achievement Award

-Mike Block, Metro Water District

The Corporate Board of the Arizona Hydrological Society (AHS) is seeking nominations from AHS members for the 2007 AHS Lifetime Achievement Award. Any AHS member or a non-member can be nominated for the award. The award consists of a personal recognition plaque, a rotating plaque listing all past recipients and a \$500 check to an Arizona educational organization of choice by the award recipient. The award is presented at the Annual Symposium to honor an individual who has contributed to AHS, the science of hydrology within Arizona and/or has received national fame for their contributions in the hydrology field.

Past recipients of this prestigious award include: Leonard Halpenny (1995), Dr. Eugene Simpson (1996), Dr. Herman Bower (1997), Dr. Sol Resnick (1998), Dr. Errol L. Montgomery (2001), Herbert H. Schumann (2002), Dr. L. Gray Wilson (2003), Gary L. Small (2004), and Gail Cordy (2006).

**Lifetime Achievement Award nominations can only be made by current AHS members.** Please refer to the AHS website ([www.azhydrosoc.org](http://www.azhydrosoc.org)) for more information about the award and download the nomination form. **Your nomination must be submitted by July 10, 2007.**

Please contact Mike Block at (520) 575-8100 or [mblock@metrowater.com](mailto:mblock@metrowater.com) if you need more information or visit the AHS website under Lifetime Achievement Award about the four selection criteria.



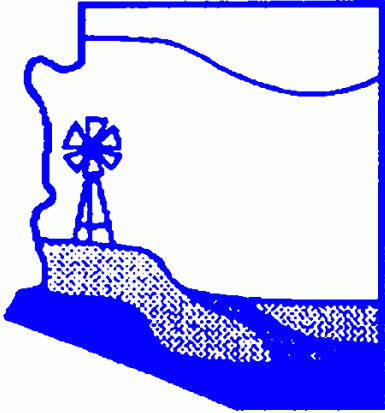
### **How to visit the AHS Members Only area:**

- Go to: [www.azhydrosoc.org](http://www.azhydrosoc.org)
- Located on the far right side of your screen click on Members Only
- Type in your username and password: Your username is the first initial of your first name and then your last name (ie Flo Waters would be FWaters). Your password is your zip code (that we have on file for you).

Once there you have access to documents that are not available on the public site.

REMEMBER you must be a currently paid member of AHS to have access.

# MEMBERSHIP APPLICATION



## Arizona Hydrological Society

Jeanie Merideth  
Association Manager  
PMB #139; 3305 N. Swan Rd. #109  
Tucson, AZ 85712  
(520)299-6787  
Fax: (520)299-6431  
[azhydro@comcast.net](mailto:azhydro@comcast.net)

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

**ARIZONA HYDROLOGICAL SOCIETY**, c/o Jeanie Merideth Association Manager  
PMB #139; 3305 N. Swan Rd #109, Tucson, AZ 85712  
Membership Application (Dues: 1 year \$40, \$15 for students)

Name: \_\_\_\_\_ Position: \_\_\_\_\_

Company: \_\_\_\_\_ Email: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Work Phone: \_\_\_\_\_ Home Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

*In addition to my dues, I am enclosing*

\$ \_\_\_\_\_ Herman Bouwer Intern Scholarship fund (Phoenix),  
\$ \_\_\_\_\_ Leonard C. Halpenny Intern Scholarship fund (Tucson),  
\$ \_\_\_\_\_ for the SARSEF Scholarship fund,  
and/or \$ \_\_\_\_\_ for the state-wide AHS General Scholarship fund.

Total amount enclosed: \$ \_\_\_\_\_

Chapter Affiliation:

\_\_\_\_\_ Tucson

\_\_\_\_\_ Phoenix

\_\_\_\_\_ Flagstaff