



July 2009 Newsletter

Table of Contents

- [Viewpoint: The Uncertainties of June](#)
- [2009 Lifetime Achievement Award Nominations Sought](#)
- [2009 Symposium Update](#)
- [Phoenix Chapter News](#)
- [Tucson Chapter News](#)
- [Flagstaff Chapter News](#)
- [An Interesting Note from the Middle East](#)
- [AHS Creates a LinkedIn Group](#)

Viewpoint: The Uncertainties of June

“Unusual weather we’re having, ain’t it?” commented the Cowardly Lion as snow fell on the summer flowers within sight of Oz.

Have you been enjoying the weather this June? Records have been set for the string of days with cool temperatures and higher humidities. Rain has actually fallen in a month and areas traditionally devoid of June precipitation. Who wouldn’t ask for such a contrast with what June typically offers?

But be careful what you ask for. If you are one of those who accepts the reality of accelerating climate change—and I am one—then the unusual weather we have been having could leave you a little unsettled. What if our unusually pleasant June is a subtle manifestation of the shift in climate, as opposed to an enjoyable but ultimately meaningless interlude that we should all appreciate? What if unusual weather presages increasing uncertainty in predicting the weather, or even a new “usual?” What if climactic shifts are stirring sooner than envisioned? We won’t know for several years, of course, but it’s the “what if” that introduces greater uncertainty.

For those involved in water resources planning for a utility—and I am one—potential uncertainty in weather predictions means greater risk that must be managed. New water resources plans may have to be prepared to address different risk factors in the new reality, if any such pattern can be discerned. The need to re-assess future reliability of the city’s water portfolio becomes paramount. What could happen, and what plans should be laid to mitigate the impact?

All this is part of managing hydrologic extremes. Which just happens to be the theme for this year’s Annual Symposium. You already know about the great family venue at the Westin Kierland Resort and Spa in Scottsdale. You already know about the projections for over 300 attendees. You already know that you will hear an excellent set of papers. You already know how your professional and personal horizons through networking will grow and be greater than ever, as this Annual Symposium will also be the annual convention of the American Institute of Hydrology. What you need to know is that the on-line registration process is up and running at www.hydrosymposium.org. While the weather may have been uncertain in June, the ticking of the clock is definitive, and August approaches inexorably. Eliminate risk and uncertainty—register now!

Alan Dulaney,

AHS Corporate Board President, 2009

2009 AHS Lifetime Achievement Award Nominations Sought Deadline to Submit Nominations is July 10, 2009

The Corporate Board of the Arizona Hydrological Society (AHS) is seeking nominations from AHS members for the 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.

Note: Lifetime Achievement Award nominations can only be made by current AHS members.

Please submit the name of the AHS member or non-member you would like to nominate, as well as details why this person deserves recognition based on the following criteria: contribution to Arizona hydrology; national reputation and experience; and contribution to the further development and education in the hydrologic field (i.e., mentoring, involvement in AHS...)

Forms, and more information about this award can be found on the AHS website:

[AHS Lifetime Achievement Award](#)

Forms may be either e-mailed to Matt Beversdorf at azhydrosoc.web@gmail.com or mailed to:

Arizona Hydrological Society
c/o Matthew Beversdorf
1753 East Broadway Road
Suite #101, Box 106
Tempe, Arizona 85282



2009 Symposium Update:



Jointly hosted by:
Arizona Hydrological Society
American Institute of
Hydrology

Home	This year's Water Symposium we will feature two Plenary Sessions.
Manuscripts	Speakers at the Opening Plenary on Monday include David Modeer, the General Manager of the Central Arizona Project, and David Salisbury, President and CEO of Resolution Copper Mining. The Closing Plenary on Wednesday will feature Jonathan Overpeck, PhD, Professor in the Department of Geosciences and Atmospheric Sciences, University of Arizona and Terry Fulp, PhD, Lower Colorado Deputy Regional Director - Bureau of Reclamation. The unique perspectives that each brings to the symposium will be of interest to everyone!
Program	
Workshops	
Field Trips	
Accommodations	Tuesday's luncheon will feature Dr. Miguel A. Medina, Jr., Professor at the Department of Civil and Environmental Engineering, Pratt School of Engineering, Duke University. He will present an "Assessment of Global Water Resources".
Travel	

The planned Technical Sessions represent a wide range of topics pertaining to our theme of "Managing Hydrologic Extremes". More than 80 technical papers have been accepted and will be presented for publication in the proceedings. Session topics include management, modeling, remediation, climate, flooding, and water quality issues. The sessions on Water Resource Management, for example, include a conservation oriented business plan, a model from ancient times, and a suggested role for desalinization. Flood and sedimentation issues will be presented for the Colorado River and the San Pedro River. Modelers will be able to attend sessions on surface water and ground water. Issues of Reuse and Recharge will have dedicated sessions. Water Quality issues in Mexico and Nepal will be presented along with different "in situ" Remediation Techniques. There will also be talks on well rehab, design and various tools such as available databases and gravity techniques.

In addition to the Technical Sessions, Abe Springer will be Moderator at a Panel Discussion of "The Future of Geology in Arizona Colleges".

Session titles are:

Water Resource Management, Policy and Education, Permitting, Watershed Management, Climate, Groundwater Quality, Surface Water Quality, Remediation, Flooding, Erosion and Sedimentation, Hydrogeology, Recharge, Reuse, Wells, Surface Modeling, Groundwater Modeling, and Tools.

The Symposium also features a series of fieldtrips including a day-trip to the Grand Canyon, Alluvial Fan Tour, a visit to the Gilbert Riparian Institute, the Rio Salado Restoration and River Management Project and the Cap and Lake Pleasant Dam Tour. We also feature an exciting tour program for attendee spouses.

This promises to be our most comprehensive symposium yet!

Don't miss out, [register today](#) !



Don't Forget to Reserve Your Hotel Rooms
We have great group rates available through July 30th!
[Book Now](#), Group code: AZH29A



**A great resort
location
for a great price.**

Bring the Family!



**Now that you have submitted your Abstracts,
don't forget to keep working on your manuscripts.**

Submissions will be accepted through July 17, 2009.

Symposium Sponsors



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Phoenix Chapter

Phoenix Table of Contents

- [July Dinner Meeting](#)
- [June Meeting Summary](#)
- [June Meeting Sponsor Thank You](#)
- [Seeking Symposium Sponsors](#)
- [Symposium Planning Meeting](#)
- [Become a Master Watershed Steward!](#)
- [Phoenix Event Calendar](#)

July Dinner Meeting

Our next dinner meeting will be held on our regular Tuesday, July 14th, when we will hear a presentation from David Christiana, ADWR. David will be speaking about his work with World Water Corps, the volunteer arm of the non-profit international development organization, Water For People.

Water For People assists communities in developing countries improve their lives by supporting safe drinking water and adequate sanitation programs. World Water Corps volunteers provide professional support to Water For People, engaging in activities such as scoping studies and needs assessments to determine where Water For People should work, monitoring the functionality of past projects, evaluating the overall program effectiveness, and conducting special studies.

Dave Christiana has participated in a project monitoring assignment in India and a mapping and needs assessment assignment in Uganda. The monitoring assignment in India entailed visiting past water and sanitation projects in the rural outskirts of Kolkata (formerly Calcutta) to provide third party verification that projects are being constructed as intended and are being used and maintained properly. This is accomplished through observation and extensive interviews with village leaders and water users.

The mapping and needs assessment assignment in Uganda entailed locating with GPS and documenting every water source in Mukono and Kyenjojo districts where Water For People will be working. The results will establish baseline conditions to help Water For People and their partners scope out and prioritize future work. The final report is in preparation.

So, please join us Tuesday, July 14th at El Penasco at Mill & Broadway in Tempe to have a beverage,

share business cards, and hear about Dave's excellent adventures.

Location:	El Penasco Mexican Kitchen 19 E. Broadway Road Tempe, AZ 85282
Event:	David Christiana, ADWR, "World Water Corps: An Adventure in Volunteerism"
Chapter Board Meeting:	5:00 PM – 5:30 PM
Happy Hour & Dinner:	5:30 PM – 7:00 PM
Presentation:	7:00 PM – 8:00 PM
Cost:	\$15 member, \$20 non-member, \$5 student

RSVP with Kirk Creswick at kcreswick@eecphx.com or 602-248-7702.

June Meeting Summary

For the June meeting, Greg Zekoff of Boart Longyear shared with attendees, information about sonic drilling. Below is a summary of what he covered.

Greg discussed Sonic drilling techniques utilized by Boart Longyear. Boart Longyear Company is the world's leader in sonic drilling technology operating over 150 sonic drills world wide. Boart designs, builds, and operates all of its own proprietary sonic drilling equipment including tooling.

A sonic drill looks and operates very much like a standard rotary drill rig. The difference is that a sonic drill rig has a specially designed hydraulically powered drill head (or oscillator) which generates a high frequency vibrational energy. The sonic head is attached directly to the core barrel or outer casing, sending the vibration and waves of energy down the drill string in a natural phenomenon called resonance. The resonance removes friction from the inner and outer walls of the drill string allowing the casing to move through unconsolidated materials easily and allowing a core to move into the core barrel with minimal resistance or disturbance. In addition, the string acts like a high frequency spring allowing the casing and core barrel to cut through hard materials such as cobbles and boulders.

The sonic method advances a casing as the borehole is drilled. While there are several ways to drill a borehole with the sonic method, the most common means involves advancing a core barrel, which is overridden by a larger diameter drill string that cases the open borehole and prevents collapse and cross-contamination. This procedure is typically done without the aid of drilling fluids such as mud, water or air. This allows for a clean operation with a minimization of drill waste.



There are several advantages related to sonic drilling in the environmental, geotechnical and mineral exploration markets. A few of these are:

- Superior information: the sonic method provides a continuous, relatively undisturbed core sample of unparalleled quality and accuracy through any type of overburden formation.
- Waste reduction: The sonic method reduces drilling waste as much as 80% compared to some conventional drilling methods.
- Speed: In many drilling situations the sonic method is substantially faster than conventional drilling methods.
- Superior well construction: The sonic method causes minimal



disturbance to the surrounding borehole wall, resulting in a more efficient well construction.

- Angle drilling: All Boart sonic drills have the capability of drilling at an angle up to 25 degrees from horizontal. Some have the capability to drill as far as horizontal.
- Safety: The sonic method is a safe, clean operation that is residential friendly. The rig is relatively quiet compared to other drilling methods as well and eliminating dust and mud with its ability to drill without drilling fluids.

The sonic drills come in a variety of carrier platforms. The standard full sized rig is mounted on a tandem axle truck with a support truck of similar size. The standard rig set up is back to back resulting in a narrow, long footprint. Other sonic set ups include rigs mounted on track units, skid units, barge units and balloon tire units.



Boart also operates a smaller more compact sonic drill design for limited access situations. It can fit into tight spots and has a shorter mast capable of working under a standard 12.5" canopy. This drill does not have the depth and diameter capabilities of the larger unit but can still complete coring and well construction down to a depth of 100'.

New sonic technologies and future technologies include:

- Boart has developed a larger sonic drill which utilizes dual sonic heads and has the capabilities to drill much larger diameter boreholes to a deeper depth.
- Boart has set up sonic drills to have the ability to switch the sonic head with a rotary core head allowing the drill to move through several hundred feet of overburden and then conventional wireline core to much deeper depths.
- Boart is in the process of developing a wireline sonic coring system to dramatically increase the speed of drilling-especially at deeper depths.



Field scientists pick the sonic technique because of the information you get from the high quality core. The sonic method greatly reduces the risk of project failure due to unknown or difficult subsurface conditions.

The local Boart Longyear Company office is located in Peoria, Arizona. It has 8 sonic drills based in this office and serves Arizona, New Mexico, Utah, Nevada and Colorado.

Thank you, Greg!

Dinner Meeting Sponsor Thank You!

Not only did Greg provide the presentation for the June meeting, but Boart also sponsored Happy Hour. A great big Thank You goes out to [Boart Longyear](#) for sponsorship of happy hour at the June meeting. Thank you!

If your firm is interested in sponsoring a future Phoenix Chapter dinner meeting, please contact Ted Lehman at 480-222-5709 or ted@jefuller.com.

2009 AHS Annual Symposium Sponsors Sought

The 2009 Symposium, "Managing Hydrologic Extremes", will be held at The Westin Kierland Resort & Spa August 30 through September 2, 2009 in Scottsdale. The event will be a joint symposium with the 2009 national conference of the American Institute of Hydrology (AIH). Thanks to our volunteers we already have several pledged sponsors! Our thanks to:



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 - Freeport McMoRan Copper & Gold



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 - Columbia Analytical Services
 - Golder & Associates
 - Montgomery & Associates
 - Southwest Hydrology
 - US Geological Survey



- Event Sponsor
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 - Southwest Groundwater Consultants
 - WDC Exploration & Wells



We look forward to helping you help us promote your firms and the 2009 Symposium.

Take a look at the [exhibitor hall setup](#). See where you would like to set up your booth and market new clients in Scottsdale. Reserve your space now and let everyone know you are supporting another outstanding AHS event.

Please contact Mike Hulst, EEC, at 602-248-7702 or mhulst@eecphx.com or Keith Ross, Hydro Geo Chem, at 480-421-1501 or keithr@hgcinc.com and ask for a sponsorship package.

More information is also available at our Symposium website, <http://www.hydrosymposium.org>.

Planning for 2009 Symposium continues, July 15th, at Hydro Geo Chem

Planning for the 2009 AHS Symposium continues. The next planning meetings is scheduled for Wednesday, July 15th, at 5 PM at the offices of Hydro Geo Chem (6370 E. Thomas Rd, Ste 200, Scottsdale, AZ). Things are getting VERY close and many details need to assistance (that means we need YOU). We have a great group already, but we can definitely use more help.

If you are interested in helping with the planning process or just listening in, please contact Keith Ross at keithr@hgcinc.com or 480-421-1501. We'd love to have you and we can really use your help.

Become a Master Watershed Steward!

The University of Arizona Cooperative Extension is seeking motivated applicants for the Phoenix Master Watershed Steward Program. A new class starts in Phoenix on July 28th. For an application and more

information, please call (602) 390-2798.

This intensive ten week course will educate and train participants about local watershed issues and water resources in Arizona. Participants will learn the basics of hydrology, wetland functions, climate, geology, ecology, water quality, and water management among other topics. No previous experience is required. Classes will be taught by University of Arizona faculty as well as other professionals from around the state. Those who complete the class will be offered unique volunteer opportunities at the brand new Nina Mason Pulliam Rio Salado Audubon Center surrounded by a beautiful wetland in the heart of Phoenix.

Classes begin Tuesday, July 28th, 2009 in Phoenix and will be held every Tuesday morning from 9 AM to 12 noon through September at the Rio Salado Audubon Center off Central Avenue between Broadway and Interstate 17. The cost is \$50.00, which includes the Master Watershed Steward guide, training manual, and all handouts. Scholarships are available. A maximum of 30 people will be accepted for this class. Applications are due by July 15th, 2009. Upon completing the class and volunteer hours, participants will become Master Watershed Stewards!

For more information or to request an application, please contact:

Summer Waters

Water Resources Extension Agent

University of Arizona Cooperative Extension, Maricopa County

4341 East Broadway Phoenix, AZ 85040

(602) 390-2798

Email: swaters@cals.arizona.edu

Web: <http://cals.arizona.edu/watershedsteward/>

Event Calendar (you may also see AHS calendar events at <http://www.azhydrosoc.org>)

- Aug. 30- Sept. 2, 2009 - *Managing Hydrologic Extremes*, Joint Symposium of AHS & AIH, Westin Kierland Resort & Spa, Scottsdale, AZ
- October 13 - Oktoberfest meeting at Sonora Brewhouse! - Dinner Speaker: Brian Conway, ADWR. "Arizona Department of Water Resources Land Subsidence Monitoring Program"

Tucson Chapter

July Meeting Announcement

The Tucson Chapter will not be holding a chapter meeting for the month of July.

2010 Symposium Planning Committee

Planning for the 2010 symposium is underway. If you would like to get involved with planning, please contact Kate Duke of Montgomery & Associates (kduke@elmontgomery.com) or Jeff Gawad of Montgomery & Associates (jgawad@elmontgomery.com). Any help is greatly appreciated! Thanks!

Flagstaff Chapter

No July Meeting

The Flagstaff Chapter will not be holding a chapter meeting for the month of July.

May Meeting Summary

John Cochran, Manager Environmental Hydrology for Peabody Investments Corporation provided a summary of Peabody Western Coal Company's Black Mesa Complex and recent permitting developments for the May 12 chapter meeting. In December 2008, the Office of Surface Mining published the Black Mesa Project Final EIS and approved Peabody's life-of-mining (LOM) plan application. John provided an overview of the production well field and water distribution system at the Black Mesa Complex, including recent reductions in pumping from the N-Aquifer and measurements of water level recoveries within the Black Mesa leasehold. John also gave a summary discussion on the 3-D numerical groundwater flow model developed for the N-Aquifer including model development and calibration assumptions and drawdown predictions over the life of mining at the Black Mesa Complex. Comparisons of model predictions and recent water level measurements at N-Aquifer observations wells operated by the USGS through 2008 were also presented. The Flagstaff Chapter extends its appreciation to John Cochran for providing such an informative presentation.

The meeting was held at the Peabody Flagstaff office and we had pizza delivered! In attendance were some new and old faces and, of course, the regulars: Paul Whitefield, Charlie Schlinger, Brad Hill, Randy Wilkinson, Erin Young, and Jamie Macy.

An Interesting Note from the Middle East

Jeddah is a major seaport, commercial center, and gateway to Mecca. Recently it was reported on www.A1SaudiArabia.com that the main topic at the City Council meeting was the availability of water during the summer months. Many neighborhoods in this city of over 3.4 million people get water from the potable system only a few times over several weeks, and apparently no neighborhood receives water every day of the week. Water hauling is up 58% this year. The National Water Company hopes to improve water service by upgrading the pipes and increasing output from the Shuaiba-3 desalinization plant. This will ensure that water is delivered to every user at least once every 6 days.

Water resources are not taken for granted in the Middle East. Everyone is aware of the value of water. In the semi-arid Southwest, in contrast, our own folks (politicians included) often seem blissfully unaware of how well our system works. As hydrologists and water professionals, we must be diligent in continuing to insure reliable supplies of high quality water for all uses and in maintaining our educational efforts so that everyone understands just how important water really is.

AHS Creates a LinkedIn Group

As a member of AHS, you already have access to resources and networking tools that help keep you up to date on issues bearing on hydrology and related business in Arizona and the Southwest. Now, access to the resources has just become easier and more powerful.

[LinkedIn](#) groups offer access to news and interactive discussions amongst members, job postings, and the networking tools that have already attracted many of you to LinkedIn.

Current members will soon be receiving an invitation to this LinkedIn group.

We ask that you please make yourself aware of the [LinkedIn privacy policy](#) if you choose to accept this invitation. Additionally, we ask that the use of this group be limited to that which is consistent with a professional group and the mission of AHS.

For more information about the Arizona Hydrological Society, or to view current job listings and announcements, please visit our web site at:

<http://www.azhydrosoc.org/>

Your membership may be renewed for 2009 by credit card through the AHS website or by mailing a check to the Arizona Hydrological Society, c/o Matthew Beversdorf, 1753 East Broadway Road, Suite #101, Box 106 Tempe, Arizona 85282. Dues remain at \$45.00 year for regular membership and \$15.00 for students. Thank you all for a great 2008 and for your continuing support in 2009. For those who attended the 2008 Flagstaff Symposium, be reminded that membership dues for 2009 were included in the registration fee.