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Practical and Current Information for Environmental, Health and Safety Professionals

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See pg 13



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HAL BERKOWITZ
RETIRES**

See pg 14


**ALSO INSIDE:
NEWSBRIEFS,
ASSOCIATION PAGES,
COLUMNS, & MORE !**

MANAGING ASBESTOS

ROBERT L. HUTZEL, CIH, CSP pg 6

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Water Resources Division

Martin J. "Mike" Pasqualetti, Ph.D.
Professor, ASU School of Geographical
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Contacts

Conference Chairperson, Brad Cross,
480.905.9311 or brad.cross@lfr.com

Sponsorship Coordinator, Matt Jacobs,
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Exhibit Coordinator, Nancy Nesky
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Full Conference Registration – Members \$130
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Course Offering: January 27th, OSHA 8-Hour
Hazardous Waste & RCRA Update, \$130

Topics

ADEQ Division Updates, Air Quality,
Greenhouse Gas Reporting, Federal
Climate Change Program, Western
Climate Initiative, Advances in
Water Treatment and Dewatering
Technologies, Nanoparticle Pros and Cons,
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From the Editor



The Journal welcomes ADEQ Director Ben Grumbles as our newest Journal columnist! Director Grumbles will address Journal readers beginning with this issue (see page 13).

If you are under the impression that all asbestos has been banned from use in construction materials for years, you may be surprised at what you learn in "Managing Asbestos" by Robert L. Hutzler (see page 6).

Two valuable environmental events are coming up soon that you may want to consider attending. The Gatekeeper/Regulatory Roundup, one of Arizona's longest running environmental conferences serving the environmental management community, will be held on January 26 & 27, 2010, at the Chaparral Suites Resort in Scottsdale (see ad on page 2). Hosted by EPAZ, AHMP, and AZSERC, this is always a well-attended event providing great networking opportunities as well as regulatory updates and a training course offering.

The Auditing Roundtable hosts "Incorporating Risk Management in EHSS Auditing" in Phoenix, from January 11 through the 13th (see ad on page 3). This is the national meeting of the organization, and is followed by three days of EHS and safety related auditing training. (Contact the organization for information.)

Have a Merry Christmas & Happy New Years!

Sincerely,

Jim Thrush, M.S. Environmental Management
Publisher & Editor



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Volume 7 Number 6

FEATURES AND ARTICLES

- 6 MANAGING ASBESTOS**
ROBERT L. HUTZEL, CIH, CSP
- 14 HAL BERKOWITZ ASU DIRECTOR ENVIRONMENTAL TECH**
SPEAKS ON PROGRAM SUCCESS & RETIREMENT

COLUMNS

- 9 IT'S ALL ABOUT CHEMISTRY**
CARBON SEQUESTRATION
LARRY OLSON, PHD.
- 12 SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT**
SUSTAINABLE "GROWTH" WITH POPCORN & SODA?
NICHOLAS R. HILD, PHD.
- 13 FROM THE DIRECTOR ADEQ**
ADEQ DIRECTOR BEN GRUMBLES
- 19 PROSPECTING: FOR ENV. BUSINESS**
GREENBUILD
JOE C. HOLMES, ATC ASSOCIATES

DEPARTMENTS

- 4 FROM THE EDITOR**
- 10 ASSOCIATIONS PAGES**
- 16 NEWS BRIEFS**
- 18 ADVERTISER INDEX**

Contents



Managing Asbestos Pg 6



ASU Office of Environmental Technology
Director Retires Pg. 17



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Dispelling a Myth: Managing Asbestos In Buildings

MYTH: Asbestos has been banned for years.

FACT: Asbestos products are still being used today

by Robert L. Hutzal, CIH, CSP

Many building owners, operators, architects and contractors have a perception that our buildings today don't have asbestos containing building materials. This assumption is a serious misconception and could lead to employees and the public being exposed to cancer causing asbestos fibers. Why do people believe that asbestos in buildings no longer exists or is not a problem? Let's



Vesuvianite from Jeffrey Mine (located in Asbestos, Quebec Province, Canada)
Photograph provided courtesy Wikimedia Commons. Photographer: Linnell

look at some of the reasons that have led to these misconceptions.

In the mid 1970's, the EPA banned the use of asbestos in certain materials. Specifically, the use of asbestos in spray-applied insulation, fireproofing, and acoustical surfacing materials was banned by the EPA. All other building materials were allowed by law to contain asbestos. Manufactures of various building materials could and did use asbestos in various building materials, such as ceiling tiles, floor tile and linoleum, mastic adhesives, joint compounds, roofing compounds, transite pipe and siding, etc, etc, etc. Although efforts are still being made by the EPA to ban all uses of asbestos, it is unlikely to happen in the near future.

In 1994, OSHA updated their asbestos standard for the construction industry (29 CFR 1926.1101). In section (k) of this standard titled "Communication of Hazards", **all building owners and employers who occupy buildings** have responsibilities under the asbestos standard. Section (k)(1) of the standard states:

"Employers and building owners shall identify TSI and sprayed or trowled on surfacing materials in buildings as asbestos-containing unless they determine in compliance with paragraph (k)(5) of this section that the material is not asbestos-containing." Paragraph (k)(5) states that "to determine if a material is non-asbestos containing material, a building inspection must be performed by a certified AHERA Building Inspector. It does not matter the age of the building, the TSI and surfacing material in a building must be treated as asbestos unless it is tested by a certified inspector."

The next sentence of Section (k)(1) has caused a great deal of confusion regarding the application of the standard to building owners. It states:

"Asphalt and vinyl flooring material installed no later than 1980 must also be considered as asbestos containing unless the employer, pursuant to paragraph (g)(8)(i)(1) of this section, determines

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it is not asbestos-containing."

The 1980 date is what has caused a significant amount of confusion. Building owners, operators, contractors, architects, and other employers often times think that if a building was constructed after 1981, then the building will not have asbestos containing materials. Again, this is a major misconception. Building materials continually come into the United States, including floor coverings, and these materials contain asbestos and have been installed in newer buildings.

Finally, Section (k)(1) states:

"If the employer/building owner has actual knowledge or should have known through the exercise of due diligence, that other materials are asbestos-containing, they too must be treated as such."

Section (k) of the standard then outlines a number of duties and responsibilities that the building owner and/or employer must fulfill to ensure that the presence of asbestos containing materials is appropriately communicated to building occupants, contractors working in the buildings, and other employers working inside the building. The purpose of this standard is to ensure that employees and the public are not unnecessarily exposed to asbestos by the disturbance of potential asbestos containing materials.

It is fairly evident that building owners and all employers, no matter how old or new the building is, must ensure that a proper building inspection of a facility is conducted prior to disturbance of building materials. The building inspection must be conducted by a certified AHERA Building Inspector. According to the OSHA regulations, if a building inspection has not been conducted in the building, then all building materials must be considered as potentially "asbestos-containing building materials". In addition, these employers must then comply with several requirements in the OSHA Asbestos Standard regarding providing information and communication of these hazards to their employees.

If the building is planned for renovation or demolition, the building owner and/or operator must have a building inspection conducted by a certified AHERA Building Inspector to determine if any of the building materials contain asbestos. The building inspection must be accomplished for compliance with EPA's National Emission Standard for Hazardous Air Pollutants (NESHAP's). Again, it does not matter the age of the building for compliance purposes.

So you can see, building owners, architects, contractors, and other employers are under a great misconception if they think that buildings today don't contain asbestos. With all the building materials that enter the United States from other countries, it is critical that all buildings be considered as having "asbestos-containing materials" unless they have been inspected by a certified AHERA Building Inspector in accordance with both OSHA and EPA regulations.

If you have questions regarding the OSHA asbestos regulations you can contact the ADOSH Consultation Section at 602-542-1769. For questions regarding the EPA NESHAP regulations you can contact ADEQ at 602-771-2333, Maricopa County at 602-506-6708, Pima County at 520-243-7320, and Pinal County at 520-866-6960. You can also find professional assistance from members of the Arizona Environmental Information Association at www.eia-az.org.

Remember: to prevent costly penalties for violation of the OSHA and EPA asbestos regulations and to prevent potential exposures of asbestos fibers to employees and the public, you **must** conduct an asbestos building inspection prior to **any** renovation or demolition project.

Robert L. Hutzel, CIH, CSP, is Chairman of the EIA Compliance Forum, and President of Hutzel & Associates, Inc., an industrial hygiene, safety, and environmental consulting company. Robert has over 40 years experience in industrial hygiene & safety. He can be reached at rlhutzel@aol.com or by phone at 602-323-0222.

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Maricopa County Air Quality Dept Hosts "Partnering for Cleaner Air" Annual Air Quality Conference

On Oct. 20, the Maricopa County Air Quality Department hosted the Partnering for Cleaner Air Annual Air Quality Conference at the Scottsdale Resort & Conference Center. With more than 400 business and community leaders in attendance the one-day conference featured numerous panel discussions that informed participants about the steps that must be taken to educate citizens, businesses and government entities about individual responsibility to clean the air.

"The Partnering for Clean Air Conference is the first in many steps needed to clean the air in Maricopa County," said Lawrence Odle, director of the Maricopa County Air Quality Department. "Each and every person has individual responsibility to improve air quality and unless we educate our citizens and community leaders about what processes need to be followed, we take the risk of losing crucial federal funding for the state, and that is not an option."

The conference featured a day filled with discussions focused on sustainability, public health, regulatory function and perspectives by the business community. Conference panelists included Bob England,

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M.D., MPH; Director, Maricopa County Department of Public Health; Benjamin Grumbles, Director, Arizona Department of Environmental Quality, Allan M. Wachter, MD, Chairman of the Maricopa Asthma Coalition; Deborah Jordan, Director, Air Division, U.S. EPA Region 9; and a discussion with elected officials from all levels state government including The Honorable John Huppenthal, Arizona State Senate; The Honorable Ray Barnes, Arizona House of Representatives; Don Stapley, Supervisor, Maricopa County Board of Supervisors, District 2; and The Honorable Hugh Hallman, Mayor of Tempe.

Partnership organizations on the conference "Steering Committee" (see conference website, URL below) included: ADEQ-Air Quality Division, American Lung Association in Arizona, APS, Arizona Chamber of Commerce and Industry, Arizona Chapter of Associated General Contractors, Arizona Environmental Strategic Alliance, Arizona Rock Products Association, AWMA-Grand Canyon Section, City of Tempe, Home Builders Association of Central Arizona, Huston Environmental Services, Maricopa County Asthma Coalition, Maricopa County Farm Bureau, Maricopa Utilities Group, Quarles and Brady, LLP, the Sierra Club-Grand Canyon Chapter, SRP and Valley Forward.

Conference "Contributing Partners," as listed on the conference website, include: SRP, Sundt, Riester, National Land Management, APS, Kitchell, Kiewit, Environ, Ames Construction, Inc., Maricopa Utilities Group, Arizona Rock Products Association, Klondyke Construction, Sturgeon Electric, Salem Boys Auto, Gammage & Burnham, Arizona Chapter Associated General Contractors, Home Builders Association of Central Arizona, Gila Power LP, Diamond Underground Construction Corp.

More information on the Air Quality Conference can be found here: www.annualairqualityconference.com.

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Larry Olson, PhD.

It's All About Chemistry

Carbon Sequestration

In a previous column we looked at various means of capturing carbon dioxide from flue gases in power plants. Pilot plants are now being constructed around the world including a partnership in Charleston, West Virginia between Dow and the French power plant construction company Alstom in which Dow's amine system will be used to capture 1800 tons per year of CO₂. Alstom is also working with a Polish utility to try to capture 100,000 tons per year. Worldwide there are some 5000 large power plants with annual CO₂ emissions of 10 billion metric tons and some 1000 cement manufacturers emitting 900 million metric tons per year that are potential candidates for carbon capture.

But to mitigate anthropogenic carbon dioxide emissions, we must not only capture CO₂ but find a way to store it permanently so that it does not enter the atmosphere. One option under active consideration is to pump CO₂ deep underground into salt formations or spent oil and gas wells where there is an impermeable cap over the formation to keep the gas from migrating back to the surface. It is estimated that in the U.S. alone there is the potential to sequester hundreds of billions of tons of carbon dioxide in this

way, and around the world at least 20 Gigatons capacity.

Capture of carbon dioxide from a point source is followed by compression to a supercritical fluid, with the density of a liquid but flow properties like a gas, and then transport through a pipeline to an appropriate geological site. There are about 3900 miles of CO₂ pipeline now in existence in the U.S., compared to almost 1 million miles of natural gas pipelines. Obviously, a major expansion of this pipeline system will be necessary, including the politically thorny issue of siting interstate pipelines. But the risks associated with carbon dioxide pipelines have been shown to be less than that of natural gas lines.

CO₂ has been injected underground to enhance oil recovery for more than 35 years, so we have some experience with this technology. But the scale which is being proposed and the time frame of storage open up a whole new set of questions. Possible problems include contamination of drinking water sources, leakage of injected or displaced fluids, and disturbance of ecosystems. Regulatory oversight of this technology will need to be developed.

Risk assessments for the carbon sequestration process are critical, but each site is unique, even within the same geologic formation. There should be plans for mitigation and remediation in case of unexpected situations. Problems in long term storage could include cap rock failure, seismic events and transmission through faults and fractures. Proper characterization of deep geologic formations is critical for long term storage, but for much of this we depend upon penetrating wells. These very wells also represent a pathway for CO₂ to escape back into the atmosphere and so will have to be plugged before injection begins.

Finally, the ability to quantitatively account for Greenhouse Gas reductions will be critical in order to comply with international protocols. This process, called MMV for Measurement, Monitoring, and Verification, isn't necessarily straightforward and proper procedures will need to be developed and tested in order to prove that carbon has been permanently removed from the atmosphere.

For more information about carbon capture and storage see http://pdf.wri.org/ccs_guidelines.pdf.

Larry Olson, PhD., Associate Professor, Arizona State University Environmental Technology Management Program. Dr. Olson holds a Ph.D. in Chemistry from the University of Pennsylvania, and is an environmental chemist with interests in remediation technologies and international env. mgmt. He can be reached at 480-727-1499, or by email at Larry.Olson@asu.edu

Associations Pages

The Journal of Environmental Management Arizona invites environmental, health and/or safety organizations in Arizona to contribute news articles about their associations. Contact the editor at 480-422-4430 x42.



www.azhydrosoc.org

The theme for AHS in November was "Central Arizona Project." The Phoenix chapter had Tim Bray, Central Arizona Water Conservation District (CAWCD) Board member representing Maricopa County present, "Central Arizona Groundwater Replenishment District (CAGRD)." He explained how the CAGRD is an agency within the CAWCD whose purpose is to replenish groundwater that was overpumped from Arizona's aquifers. The Tucson chapter invited Warren Tenney, CAWCD Board member representing Pima County, to speak at their November meeting. Mr. Tenney presented, "Water - Is it Wet Enough? Challenges facing the CAP," where he explained how CAP is working collaboratively with local, regional and national partners to evaluate and find solutions to a number of water-related challenges facing Arizona and the southwest.



Matthew Beversdorf
Executive Director

Sources in Maricopa County. Through two field studies, his research group has been studying the chemical composition of both fine and coarse particulate matter in the Greater Phoenix region working to develop molecular markers capable of tracking emissions from different sources. The ultimate goal of this work is to be able to use these molecular fingerprints to understand how different sources impact local air quality in different regions. In turn, this will allow air pollution control strategies to more effectively control emissions by targeting the most important sources. Key findings from their work include measuring the composition of local soils, agricultural soils and road dusts to be able to track separately the contributions from wind blow dusts, road dusts and agricultural processes on ambient air quality.

We are currently planning our meeting schedule for next year. For additional meeting information and upcoming meeting topics, please check our website. New members are always welcome!



Michelle De Biasi
Chair



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HAPPY HOLIDAYS to you and yours! The local Arizona Chapter of the Semiconductor Environmental, Safety and Health Association (SESHA) had a friendly networking Holiday Social on December 10th at Iguana Macks in Chandler. Our next Chapter Meeting will be on Thursday, January 21st from 2:00-4:30pm at ASU's MacroTechnology Works. This is located at 7700 South River Parkway in Tempe. We always host social networking with snacks provided at a break between presentations and following the meeting. Due to schedule conflicts, we will hear from Dr. James Leeman, PhD. Clinical Assistant Professor at Tulane University, at this meeting instead of our last Chapter meeting. Dr. Leemann will provide a participative discussion on, "Is there Safety in Sustainability?" You can read a back copy of his article printed in the ISHN magazine at www.ishn.com. Dr. Leeman is also delivering a presentation on "Competencies that Distinguish Superior Performance among EHS Professionals". What a great message for the new year!

There is no charge to attend our meetings, but please RSVP by emailing me at christine@cihergo.com. Mark your calendars now for the 32nd Annual SSHA Symposium in Scottsdale on April 26-29. For more details please visit our website (the Conferences tab) or call me at 480-897-ERGO(3746).



Christine Pomeroy
President



www.azchamber.com

The Arizona Chamber of Commerce and Industry and the Arizona Manufacturer's Council are in the process of developing the organization's public policy priorities for 2010. The Environment Committee is the venue for submitting and vetting environmental issues for consideration. Anyone wanting to recommend an environmental issue for the Arizona Chamber and Manufacturer's Council to consider for 2010 should contact Jeff Homer at 480-441-6672/jeff.homer@gdc4s.com.

The Environment Committee is in the process of identifying topics for 2010 breakfast meetings. These meetings at held on the second Wednesday of each month at the Sheraton Phoenix Airport Hotel located at 1600 S. 52nd Street Tempe, AZ 85281. Any topic ideas should be submitted to Jeff Homer at the phone number or email address listed above. Please go the Arizona Chamber web page at www.azchamber.com for additional event information.



Jeff Homer
Co Chairman
Environment
Committee



www.awma-gcs.com

A WMA held its October meeting at ASU's Global Institute of Sustainability (GIOS). Matt Fraser, Director of Research Development at GIOS, gave a presentation on the Development of Markers to Track the Impacts of Different Particulate



www.eia-az.org

The Environmental Information Association has made great strides this year in the dissemination of information and through our educational outreach programs. The 2010 free asbestos regulatory seminar schedule can be accessed through our website. Ten seminars will be held next year throughout the State of Arizona and Las Vegas, Nevada. The Compliance Forum continues to meet periodically throughout the year and have been instrumental in bringing environmental awareness to the general public through their involvement in public presentations, published articles, and the preparation of documents to assist general contractors and specialty contractors during projects. It has been my personal pleasure to serve the EIA as their 2009 president. The reins will be passed to Mr. Chris Gates with The Asbestos Institute for the 2010 duration. On behalf of the 2009 Board of Directors we offer our support and well wishes for the New Year!

Please visit our web site or call 602-437-3737 Ext. 123 for information on all upcoming events sponsored by EIA-AZ and for membership and sponsor opportunities. We encourage participation from members and non-member (environmentally concerned community) involvement with our outreach programs.



Vicky Aviles
President



AHMP
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www.thunderbirdchmm.org

The "Introduction to Environmental, Health & Safety Regulations & Compliance" course that we offered in early November was a big success! We had 17 attendees, and all of the proceeds went to our scholarship fund. We haven't decided about next year, but be sure to watch for notices in the Journal and via email. If you want to be added to our email list for these and other meeting and regulatory updates, contact Chuck Paulausky at cpaulausky@cpsafety.net.

Thunderbird Chapter 2010 Scholarships! We have received several applications for the Annual Thunderbird Chapter Scholarships, and will be notifying the applicants by the end of the year.

AHMP/EPAZ monthly lunch meetings are held from 11:30 ~ 1:00 on the second Thursdays of each month, at the SRP PERA Club in Tempe, so check your emails for the meeting notice. Meeting details: www.thunderbirdchmm.org or www.epaz.org.

Calendar Items:

December 10—Luncheon Meeting—Air Quality (speaker being confirmed)

January—No monthly meeting
January 26-27, 2010—6th Annual Gatekeeper Regulatory Roundup



Chuck Paulausky
Board Member



www.AzBAS.net

On December 2nd AzBAS, along with the Arizona Investment Council co-hosted the 2nd Annual Climate Conference, *The Economic Tradeoffs of Carbon Controls: How Much Will it Cost and Who Will be Affected* at the Black Canyon Conference Center in Phoenix. Over 100 attendees heard experts address the status of climate change efforts, the economics of proposed emission controls, externalities and environmental risks and how it would impact local companies. Speakers included Jim Sims of the Western Business Roundtable on the View from Washington, and Matthew Croucher and Timothy James from ASU who are experts on economic implications of GHG control. Representatives from Sundt Construction, Knight Transportation, APS and Central Arizona Project helped the audience understand how proposed actions could affect their businesses.

AzBAS with ULI co-sponsored a town hall meeting with Senator John McCain on Oct. 30, 2009 at the Arizona Biltmore. Sen. McCain spoke on a variety of issues including Economy, Climate Change and Sustainability. Several AzBAS members also participated in Greenbuild Conference at the Phoenix Convention Center on Nov. 11-13, 2009. Greenbuild is the largest green building conference in the nation.

Given the holiday season, the next quarterly meeting of AzBAS will be held in early Jan. 2010 in Tucson.

For information on AzBAS or interest in membership, please see our website.

Edward Z. Fox
Chair



www.azalliance.org

Alliance board members elected the 2010 slate of officers at the November Annual Meeting. Incoming officers are, Chair: Matt Conway (PING); Vice Chair: Dan Casiraro (SRP); Treasurer: Kim Furphy (Kitchell); and President: Jim Thrush. As 2009 Chair, I congratulate our new officers and look forward to another great year for the Alliance!

In addition, Alliance Advisory Councilors were re-elected to new 3-year terms: Beverly Westgaard (AES), Al Brown (ASU), Sen. Amanda Aguirre (Arizona State Senate), Hal Berkowitz (ASU), John Godec (Godec, Randall & Assoc.), and Mitch Klein (Bryan Cave LLP).

Advisory Councilors selected Beverly Westgaard and Dennis Dickerson (Maricopa County) to lead the Advisory Council as Co-Chairs. Members expressed appreciation for the leadership and contributions of Al Brown, who has served the AC for two years as Co-Chair. Al will continue in an Advisory Councilor position.

The Alliance will hold its Members' Annual Report Presentations Luncheon in January at APS. This is an opportunity for potential Alliance members to learn more about both the Alliance and about member environmental achievements over the past year. If you are interested in attending please contact Jim Thrush at jimthrush@cox.net or call the Alliance at 480-422-7392.

Len Drago
Chair



www.EPAZ.org

In October, Tammy Perkins, Executive Assistant to the Phoenix City Manager, told us about the City of Phoenix sustainability efforts, including an update of the Green Phoenix efforts. For the November luncheon meeting, Matt Conway of Ping gave a presentation on "Practical Aspects of Environmental Management Systems." The Ping environmental management program has received many honors for their accomplishments over the years.

Cathy Arthur of the Maricopa Association of Governments provided an update on the efforts to achieve attainment of the national ambient air quality standards (NAAQS) during our December 10 meeting. Revised standards to the ozone NAAQS and ongoing efforts with the PM-10 5 Percent Plan will be discussed.

The 2010 Gatekeeper Regulatory Roundup Conference will take the place of our regular Jan. EPAZ meeting. The conference theme this year is "The Economy and the Environment." It will be held on Jan. 26 and 27, 2010, at the Chaparral Suites Resort in Scottsdale, Arizona. See our website for registration and other information.

EPAZ normally holds monthly luncheon meetings on the 2nd Thursday of the month from 11:30 am to 1:00 pm. at the SRP PERA

Club. EPAZ also gathers on the last Wednesday of the month for a casual cocktail mixer at various locations throughout the valley, however we will not have a mixer in December and our January mixer will be held in conjunction with the 2010 Gatekeeper Regulatory Roundup Conference. For more details see our newly renovated website at www.epaz.org for information and meeting registration or contact Mannie Carpenter at (480) 829-0457.

Mannie Carpenter
President



www.SAEMS.org

On behalf of the SAEMS Executive Board I would like to wish everyone a safe, happy and healthy holiday season! SAEMS held a holiday happy hour at Barrio Brewing Company on Dec. 10th. Thank you to those that attended, it was great to see so many familiar faces! Jeff Christensen from the University of Arizona Risk Management Department spoke at our November/December meeting about the new hazardous waste facilities that were recently completed at the University of Arizona. Our next meeting will be held Jan. 27th at the Manning House in Tucson. The topic will be the Stormwater MSGP Process. I am excited for the events of 2010, including the RCRA Seminar and our first ever Golf Tournament. To participate in the planning process for either event or for more information please contact me at 520-351-5933 or sillman@globalsolar.com. Once again we wish you a happy holiday season and look forward to a successful 2010!

Sarah Sillman
President





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Sustainability and Sustainable Development

Nicholas R. Hild, PhD.

Sustainable "Growth" with Popcorn & Soda?

Inspiration for writing and choosing a topic to write about, come from sometimes unexpected places; this one was inspired by a couple of kid-crazed hours spent recently at the theater. No, not that kind of theater; it was a *movie* theater—one of those rare times when the "early show" worked out with my schedule and the half-price ticket to see a flick was too much to resist—or so I thought.

It was a holiday week and, consequently, the small theater was packed with...you guessed it...mostly kids ranging from lap-babies to t'weeners and teens—and all of them jamming the concession lines with grandparents and young mothers in tow—kids trying to maximize a week's worth of sugar-and-fat loading, while grandma's tried not to break the bank—tough to do with \$8 popcorn tubs of saturated fat calories, \$5 thirst-busters and \$12 popcorn-n-drink combos, \$5 milk duds, m & m's, and salty snacks of every description—all to satisfy the addicts we have become!

Before the feature film started, I sat in the dimly lit theater, enduring the insanely loud music that pounded through the opening ads, which kept repeating...*let's go out to the lobby, let's go out to the lobby...* as if the little screamers all around me hadn't already concentrated enough salt and sugar-laced saturated fat into their prepubescent blood streams to get them to fever pitch—I realized too late that I was in the minority—maybe a minority of one—probably the oldest guy in the place but surely the only person who had arrived with good hearing senses in tact. Not for long, though. All those high calorie gut-loading kids soon had my senses totally trashed. I soon realized that all those gigantic sodas and copious amounts of M & M's, Whoppers, Reese's Pieces, and/or 10 gallon-sized-fat-and-salt-laden popcorn tubs were going to keep the crowd in a state of agitation for the remaining two hours.

But, I managed to endure the high-decibel pain and sat through the final credits, watching the amped-up crowd pushing and shoving their way out of the theater, observing behavior that had been induced by 2+ hours of junk food loading—even though I had considered leaving earlier, after a couple of toddlers held a competition to see who could cry (scream?) loudest and longest—but, I managed to get through it. By the time everyone had finally gone (and after the ringing in my ears began to subside), I watched as the ushers brought in huge trash cans to collect all the trash and spilled remnants of the junk food orgy I'd just endured, and that's when it hit me:

The pulsating crowd I'd witnessed in the theater that afternoon had behaved just like you would expect any gathering where drugs were being mainlined—all those sodium-saturated fats

and sugar-shots delivered in 32 ounce slugs of caffeinated soda dumped directly into thirsty bloodstreams had left their little brain cells begging for more, more, more—just like drug junkies at a rave—which mom and grandma gladly provided, just to give them a little 'treat' for their day at the movies.

When I think of all of the efforts that EH&S professionals have gone through to protect our children from toxins in the environment and the many routes of exposure we try diligently to minimize, it's totally bizarre to know that we've raised a generation of parents who didn't get the message diabetes is rampant in our children and, obesity begins in adolescence! And, sugar loading has the same effect as any addiction, even diet sugars like aspartame and saccharine are additive. Just ask a mother who drinks a six pack of diet soda every day to stop and see what reaction you get. Is this how we are raising our kids today? How sustainable is that?

In two and a half hours, I had witnessed the consequences of a generation of kids who have been spoon-fed sodas before they were old enough to drink water from a glass—kids who had their first taste of chocolate about the same time they got their first solid baby food who are now juicing with mega-sugar loads on a daily basis. And, their mother's who don't get what they are doing to them, are right there with them.

Take a look at the sugar content, saturated fat, and calories in the theater data I got from Cinemark, AMC, and Regal (below). And, although this space is too small to include these, there are similar lists for popcorn (depending on tub size: 590-1,030 calories, 20+ grams of saturated fat w/o butter—add 20 more with; add 0.4 grams LDL trans fats, and 1,500 mg sodium!)—and for sodas (regular 32 oz: 400 calories, 30 teaspoons sugar; or Diet soda: 300 aspartame-saccharine loaded calories).

Isn't it time to we get the message out to all those young mothers who haven't gotten it yet? The many ways we use to protect our kiddies from toxins in the environment, in our professional lives, will pale in importance to what the long-term effects will be if we continue making them into junk-food addicts. If we don't get the word out now, we are absolutely guaranteeing a future with a poorer quality of life for our children's, children's, children.

	Calories	Sugar (g)	Sat. Fat. (g)
AirHeads Xtremes Sweetly Sour Belts (3 oz.)	300	45	0
Sour Jacks, Original (3.5 oz.)	300	48	0
Sour Patch, Watermelon (3.5 oz.)	370	64	0
Welch's Fruit Snacks, Mixed Fruit (4.1 oz.)	370	66	0
Jolly Rancher Gummies (4.5 oz.)	390	72	0
Twizzlers (5 oz.)	460	59	0
Sour Patch Kids (5 oz.)	490	92	0
SweetTarts (6 oz.)	680	136	0
Nerds (7 oz.)	790	185	0
AirHeads (3.3 oz.)	360	51	3
Skittles, Original (4 oz.)	450	87	4
Skittles, Sour (3.6 oz.)	420	75	5
Junior Caramels (4.3 oz.)	540	69	7
Skittles, Crazy Cores (7.2 oz.)	830	156	7
Milk Duds (3 oz.)	370	44	8
Junior Mints XL (4.8 oz.)	570	107	8
Cookie Dough Bites, Mint (3.1 oz.)	400	42	10
Sun-Maid Milk Chocolate Raisins (3.5 oz.)	430	63	10
Butterfinger Minis (3.5 oz.)	450	45	10
Sno-Caps (3.1 oz.)	400	53	11
Cookie Dough Bites, Original (3.1 oz.)	420	42	11
Raisinets (3.5 oz.)	420	60	11
M&M's Milk Chocolate (3.4 oz.)	480	62	11
Buncha Crunch (3.2 oz.)	440	49	12
Goobers (3.5 oz.)	510	44	12
Whoppers (3.8 oz.)	350	48	13
M&M's, Peanut (5.3 oz.)	790	79	16
Reese's Pieces (4 oz.)	580	61	20
Reese's Pieces (8 oz.)	1,160	122	35

Source: Company information. Daily limits for 2,000 cal: Sat. Fat: 20g Sugar: 40g (10 tsp)

Nicholas R. Hild, PhD., Professor, Environmental Technology Management, Arizona State University College of Technology and Innovation, has extensive experience in Environmental Management in the southwestern U.S. Dr. Hild can be reached at 480-727-1309 and by email at DrNick@asu.edu.



ADEQ Director Ben Grumbles: On the Road

My first few months at ADEQ have included a lot of time outside the Phoenix office, in the field, on the river, and up the mountain. These were all great opportunities to get closer looks at grand natural treasures, complex challenges, and sustainable solutions. It was also a chance to feel some of the budget pressures beyond the state's capital, with all its heat and fury.

My initial road trips took me to ADEQ's regional offices in Flagstaff and Tucson. From there, I've branched out into several of our state's and our tribal partners' watersheds and communities. There were lots of conferences and stakeholder meetings and even a few ribbon cuttings and dedications along the way, the culmination of collaborations among ADEQ colleagues, customers, and constituents.

I've also joined state and regional partners at several meetings of the Western Climate Initiative in Oregon and Washington and the Environmental Council of the States, learning about the policies and players involved in greenhouse gas emissions and renewable energy options. Environmental directors from around the country are admiring our state's work to date in rubberized asphalt, wastewater recycling, and vehicle emissions testing.

I also attended the Governors Global Summit on Climate Change in

California (in which I represented Gov. Jan Brewer) and the U.S.-Mexico Border Governors Summit in Monterrey, Mexico. Our nation's capital has been a frequent destination, as well. I've represented Arizona in D.C. meetings and conferences, ranging from the National Governors Association Summit on Green Economies to conferences and discussions on carbon sequestration and watershed health to visits with Arizona's Congressional Delegation on subjects such as clean energy and climate change.

One recent road 'n' river trip is particularly memorable. I visited with local, federal, and international officials on October 5 in Yuma regarding progress in Water Infrastructure Finance Authority and USDA Rural Development funding for wastewater infrastructure in an especially needy and deserving neighborhood, the Avenue B & C Colonia. It reminds me, on a smaller scale, of the Herculean efforts of Lake Havasu City to decommission all of its septic systems and connect to a treatment plant to increase public health and protect ground water.


The Yuma project also connects two of my regional collaboration priorities, the Mexican border and the Colorado River. By reducing potential loadings of nitrogen pollution and pathogens to ground water, the community is reducing the threat to the nearby Colorado.


I had the privilege of spending the next two days on a Bureau of Reclamation-sponsored boat trip from Yuma to Hoover Dam with federal, tribal, state, Central Arizona Project, and local water and irrigation officials from Arizona and California. We toured water infrastructure facilities. We learned about environmental challenges along the river's 291 miles, such as quagga mussels and encroaching development, all the way to the monstrous and magnificent Hoover Dam.

But for now, the focus shifts back to budget plans and policy debates, with briefings and meetings closer to home.

Benjamin Grumbles
Director, AZ Department
of Environmental Quality







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Hal Berkowitz

Director, Office of Environmental
Technology, ASU, Speaks on Program
Accomplishments and Retirement Plans



With 35 years in the chemical industry and nearly two decades in academia with ASU, Hal Berkowitz, Director of the Office of Environmental Technology, ASU, is retiring, explaining, he "thought it was the right time for a career change." Well-known and respected in the environmental management community, Hal has made a major impact both through development of the highly acclaimed ASU non-degree seminar program and on a personal level with thousands of environmental and safety professionals that have attended his seminars. JEMA staff recently spoke with Hal about the ASU program accomplishments and his retirement. The following are a few excerpts:

Success of the Program

HAL: "Why is our program so successful?" It's primarily due to the high quality of not only the program curriculum, but the instructors. Most of us come from industry, with industry experience and regulatory experience. The recognition that we have from our certification type program, the recognition by industry and the regulators, and the quality of our instructors and curriculum—that is why our program is so successful.

One of the key highlights of the success of our program [is that it] meets the ASU strategic objective of outreach partnership to industry, and to the underserved populations like the Native Americans. Also it provides, in a rather unique way, courses to Mexico that relate to emergency response, training of maquiladora workers, pollution prevention, and hazardous materials transportation. We've had very extensive efforts in providing those courses in Mexico, in direct collaboration with the Department of Homeland Security and with the Arizona Department of Emergency Management. We have provided for courses directly at reservations throughout New Mexico and Arizona. These courses were extremely valuable [as] it was the only way they could really get them. They bridged the many cultural gaps that exist and that's part of the ASU strategic objective.

Future of the Program

JEMA: *Will the outreach program continue after your retirement?*

HAL: That will continue. In fact, this entire program is going to continue. I'm very proud of the accomplishments of the program. As it met the industry partnerships, municipality partnerships, the regulatory partnerships, and also the work we've done in Mexico, it's been a very successful program.

Now, I don't intend to fade away ... I'm still going to be a part of the program, but I will say that there are great plans now to expand it throughout the campus, and to involve the other degree program areas.

US/Mexican Border Programs

One of our major activities has been in the concern for disasters involving either terrorism or natural disasters—how can the cities along the Mexican border particularly better cope with emergency response? Here we have a tremendous activity between the Arizona Department of Emergency Management, the Department of Homeland Security, and various bi-national groups working together to respond to emergencies. This is critical because any emergency that occurs on the Mexican border cities can affect the US directly, either environmentally, or [in] health & safety. So there has been a great deal of attention by various agencies, including of course the Arizona/Mexico Commission, to better improve these conditions along the border. Our participation extended through ... the Border 21 period, the period through the year 2000. That was largely due to grants that we received from SCERP, Southwest Consortium for Environmental Research and Policy, a [consortium] of five US universities and five Mexican Universities. Each year they are funded by EPA, and we've been funded through that agency, for many years.

In recent years, through the Border 2010 period, our participation has largely been with the Arizona Department of Emergency Management. Here's where we were supported by both EPA grants and our main grant which is administered through the NIEHS, the National Institute of Environmental Health Sciences. This is the main grant that supports the foundation of our entire program. It's a grant we have had since 1989.

Background / Personal Reflections

My background [includes] over 30 years industrial experience in the chemical industry, with the last 20 years in executive level positions including Senior VP of Operations, Olin; Division Manager, BASF; Manager Chemical Division, Sherwin Williams; etc. My degrees have been in chemical engineering. Brooklyn Polytech was my bachelor's and then on to Bucknell and MIT. For the last 10 years, [I have been] a member of the Intel Community Action Planning Advisory Board. [I serve on] the Arizona Environmental Strategic Alliance Advisory Council, and the ETM Advisory Board. I serve as a Partner in the Arizona/Mexico Commission, and a member of the Emergency Response and Preparedness Committee, and the AICHE (American Institute of Chemical Engineering.) As far as future plans, I do intend to continue. I'm not going to "fade away" like MacArthur. I will be involved in consulting activities, some teaching I'm sure, and I still will be involved in an advisory capacity with the ASU programs. So I intend to be active in the future. We're going to travel, probably cruise around, We live right on a golf course, so I'll probably get back to playing golf again. And of course keep up technically with my own consulting.

As far as my own enjoyment, let me just say that there are several things that I look back on and one, of course, is the refresher courses that we give. We have participants [in these courses] that have been with us for

over 20 years. It's almost like family. It's great to see them once a year [and] to see how they've aged through the years, *where as I have not (he added with a smile).* And I'm going to truly miss those; we've made some good friendships, and very good industry liaison. The other area that I really look back on with enjoyment

"Our Sonora-Arizona Border communities have benefited tremendously by Hal's vision and hard work in preparing and training hundreds of emergency response personnel and volunteers. His dedication and commitment to the US-Mexican border is greatly appreciated."

Arizona State Senator (D-24)
Amanda Aguirre
November 28, 2009

is the successful careers of the former students who assisted me in the implementation of these courses. And our overall outreach, particularly in Mexico and to the Native Americans; it's a great feeling of accomplishment to [have been] able to do that. Also in our liaison with the agencies and with the Arizona/Mexico commission [and the various committees], this has been a very rewarding experience.

Measuring the Quality of Training / Appendix E

JEMA: *How do you measure the quality of the ASU training programs?*

HAL: We have a lot of criteria that we use to evaluate the quality of our classes. We are required to do that by our grantors. As an example, we do a 40 hour, 5-day, HAZWOPER training. There are companies that do [this training] by showing videos the entire 5 days. That's the extreme. In our case, we have to meet [guidelines] OSHA set out in 1994, under Appendix E, a non-mandatory guideline to the HAZWOPER standard. [Appendix E says] you have to have certain ratios of instructor to student; you have to have a certain amount of hand-on verses lecture; you have to have a certain quality of instructors; you have to have a board of advisors; you have to evaluate your course. And evaluating does not mean that people fill out a survey at the end of the class, [that asks] "how did you do?" We evaluate it by actually going around the room and discussing real world incidents. We basically say, "what in our course that [you attended] a year ago helped you to respond to that emergency?" That's how we really tell the value of our class, in terms of how did they use, and apply, the course material to the real world, and we discuss that every class.

It is not mandatory that providers of this meet [Appendix E] requirements. Very few of them really do, because if you look through those requirements—ratio of instructor to student, ratio of hands-on to lecture, and things like that—it becomes a really expensive course to run. It takes a lot of qualified people to do them. Another thing, [and this is] a very important piece, we provide them with publications which are very expensive. This one little publication here (*Hal points to one of several bound printed publications*) is over \$40. We provide [participants] with a great deal of important regulatory publications which other providers don't—because they don't have to. We do because it enhances the quality of the program.

Real-World Example

Two questions I ask: Has anything occurred on your site over the last year, and how did you respond to the incident? And we talk about it. Have you made any changes in the workplace as a result of our [course]? That's real-world evaluation. To give an example, they will talk about major explosions and fires they've had, but you know the one that was most rewarding to me? And incidentally I do speak with a little bit of authority, I spent 30 years going through explosions, etc., I've had more than I care to remember, but the one that impressed me the most was the guy in Chandler who worked at a municipal household waste dump. A truck pulled in, and it started to smoke out the back. The driver jumped out of his truck and started to walk to the back. "But I didn't let him," he said, "I shouted at him, 'you can't go back there, you don't know what it is.' He argued with me, 'that's my truck,' and [we] were getting into a shoving match." And while they were getting in a shoving match, "the thing blew." Had he allowed the truck driver to go back to investigate it, he certainly would have been injured severely, maybe even fatally, but he said, "I kept remembering, Hal, what you kept saying at these classes, 'never approach an incident until you have identified what it is.' Always take a defensive action until you identify the hazard." That was more rewarding than these guys talking about how they combated the explosions and fires and things like that.

There are two major things that I feel are critical, and one is of course, the assessment of our program, the success of it, and secondly the tremendous need for academia to have partnerships with industry. Partnership between academia and industry is really the theme of our whole program. Those are the two things that I really feel are my greatest accomplishments for the program, that we have achieved this partnership with industry, municipalities, and regulatory agencies, we have achieved the outreach and the program was successful.

Hal Berkowitz can be contacted by email at: Hal.Berkowitz@asu.edu

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News Briefs

Jared Blumenfeld Selected as Regional Administrator EPA Region 9

❖ U.S. Environmental Protection Agency Administrator Lisa P. Jackson announced recently the selection of Jared Blumenfeld to be the Agency's Regional Administrator for EPA's Region 9. This region encompasses California, Arizona, Hawaii, Nevada, the Pacific Islands, and over 140 Tribal Nations.

"I look forward to working closely with Jared Blumenfeld on the range of urgent environmental issues we face, in Region 9 and across the nation," said EPA Administrator Lisa P. Jackson. "At this moment of great challenge and even greater opportunity, I'm thrilled that Jared will be part of our leadership team at EPA. He will certainly play an instrumental role in our Agency's mission to protect our health and the environment."

Regional Administrators are responsible for managing the Agency's regional activities under the direction of the EPA Administrator. They promote state and local environmental protection efforts and serve as a liaison to state and local government officials.

Regional Administrators are tasked with ensuring EPA's efforts to address the environmental crises of today are rooted in three fundamental values: science-based policies and programs, adherence to the rule of law, and transparency.

Jared Blumenfeld is currently the Director of the San Francisco Department of Environment where he spent eight years as the primary environmental decision-

maker for 28,000 city staff and a \$6.5 billion budget. He also managed the San Francisco Recreation and Parks Department which oversaw 242 world-class parks and recreational centers including facilities such as Golden Gate Park, Candlestick Park, and Harding Park PGA golf course. He is a founder of Business Council on Climate Change, an organization that unites local businesses around the challenge of climate change.

His varied experiences also include overseeing the Treasure Island Redevelopment Authority, leading the first United Nations World Environment Day hosted by the United States, directing international initiatives to protect 8 million acres of wildlife habitat and editing an annual report on international environmental case law at Cambridge University. Blumenfeld received his law degrees at the University of London and the University of California.



Jared Blumenfeld
Regional Administrator EPA Region 9
Photo Courtesy EPA

Lennar Communities Development, Inc. Pays \$182,519 to Settle Clean Air Act Violations

❖ The US EPA recently announced that Tempe developer Lennar Communities Development, Inc., has settled with the Environmental Protection Agency for a total of \$182,519 – a combined \$38,425 fine and \$144,094 supplemental environmental project – in response to alleged dust violations that occurred at residential construction sites in Maricopa County.

"Maricopa County's particulate air pollution is a serious problem," said Deborah Jordan, director of the Air Division in the EPA's Pacific Southwest office. "The EPA works closely with local air quality agencies to enforce existing regulations, and remind companies such as Lennar that not complying with the law will not be tolerated."

"Air quality is a concern for many who live in and travel through Maricopa County. The resolution of this case provides for positive measures which will help improve air quality in the future," stated Dennis K. Burke, U.S. Attorney, District of Arizona.


Between November 2003 and January 2005, Lennar Communities Development, Inc., violated Maricopa County air



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quality rules during residential construction projects at five different sites in the county. Maricopa County air quality inspectors discovered the following violations:

- failure to install a trackout control device to remove particulate matter from vehicles on seven different occasions;
- failure to immediately clean up dirt tracked out 50 feet beyond the sites on five different occasions.

In addition to the fine, the company will also spend \$144,094 on a supplemental environmental project — a valuable tool in the agency's enforcement program that allows a violator to offset a portion of its fine by investing in a project that will benefit the environment. In this case, the company will reduce particulate pollution from entering the air by retrofitting City of Phoenix-owned vehicles and equipment with particulate emission control devices. The project will help alleviate respiratory and air quality problems associated with diesel exhaust.

In Maricopa County, particulate matter - wind blown dust from construction and home development sites, road building activities, unpaved parking lots and roads, disturbed vacant lands, and paved road dust - seriously affects air quality and local health.

Particulate matter, including dust, affects the respiratory system. Particle pollution is a complex mixture of extremely small particles and liquid droplets in the air. When breathed in, these particles can reach the deepest regions of the lungs, and is linked to a variety of significant health problems - ranging from aggravated asthma to premature death in people with heart and lung disease.

The elderly, children and people with chronic lung disease, influenza, or asthma are especially sensitive to high levels of particulate matter. Particle pollution also is the main cause of visibility impairment in the nation's cities and national parks.

Maricopa County exceeds the national health standard for particulate matter, or dust. The EPA has classified the county as a serious non-attainment area for particulate matter. The Clean Air Act requires the state to submit a plan containing measures that will reduce airborne particulate matter five percent a year until the area meets the federal air quality standard.

For more information on the EPA's Office of Air, please visit: <http://www.epa.gov/region09/air/>.

Sure-Way Systems, Inc. to Pay \$39,000 Penalty to Resolve Medical Waste Transport and Registration Violations

✦ The Arizona Department of Environmental Quality and Arizona Attorney General's Office announced recently that a Montana-based biohazardous medical waste business with an office in Phoenix has agreed to pay a \$39,000 penalty under a consent judgment for transport and registration violations of state statutes during 2007 and 2008.

Sure-Way Systems, Inc. received a Notice of Violation from ADEQ's Solid Waste Inspections and Compliance Unit in November 2007 after an investigation at a Tucson auto-repair shop found an inoperable Sure-Way vehicle with its cargo door open and waste medical sharps inside. Biohazardous medical waste was stored inside the vehicle for at least a month without refrigeration. An ADEQ inspection at Milum Textile Service in Phoenix in February 2008, where Sure-Way was also operating and storing records, found that Sure-Way transported 20 loads of biohazardous medical waste from April 29, 2007 through June 20, 2007 before submitting its registration to ADEQ. In addition, 10 cases were documented in which Sure-Way stored medical waste more than 24 hours without refrigeration before delivering the waste to a medical facility. "Their lax handling of potentially dangerous biohazardous medical waste put people at

Continued on next page



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News Briefs

Continued From Pg 17

risk but the company has stepped up and improved the way it does business," ADEQ Director Benjamin H. Grumbles said.

"Any company handling medical waste needs to rigorously comply with state regulations. These violations could easily have had serious consequences," Attorney General Terry Goddard said. The consent judgment is subject to court approval.

Firebird International Raceway Fined \$31,851 for Hazardous Waste Violations

✦ The U.S. Environmental Protection Agency recently fined Firebird International Raceway, a venue that hosts racing events, \$31,851 for hazardous waste manifesting and reporting violations.

In July 2006, EPA inspectors discovered four hazardous waste violations at the facility, located at 20000 Maricopa Rd. in Chandler, Arizona.

"Companies must properly store and handle hazardous waste to protect the community, workers and the environment," said Jeff Scott, director of Waste Programs for the EPA's Pacific Southwest region. "The EPA will continue to strictly enforce all regulations governing facilities that generate and manage hazardous waste."

The EPA found the facility failed to send their hazardous wastes off-site using hazardous waste manifests, failed to report the types and amounts of hazardous waste generated in 2003, failed to include all required information in its 2005 report and failed to properly identify hazardous waste.

Firebird International Raceway hosts various racing events throughout the year. The wastes generated from racing events include various types of aerosol cans and used oil contaminated with racing fuels, brake and carburetor cleaners, and other engine fluids.

The EPA's hazardous waste regulations require



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facilities to properly store, label and manage hazardous waste generated from their activities. These wastes must then be properly sent, using a hazardous waste manifest, to facilities which are permitted to handle the wastes. Additionally, facilities such as Firebird International Raceway are required to submit reports identifying the types and amounts of hazardous waste generated from their activities to EPA every other year.

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Advertiser Index

Advertiser :	Page
Aero Automatic Sprinkler Co.	11
Airtech Environmental Laboratores	7
ARCADIS	4
ASU EHS Seminars	15
ATC Associates	7
Auditing Roundtable	3
Belfor	8
Carter Affiliates Inc.	5
Chemical Transportation, Inc.	6
Clear Creek Associates	3
Conestoga-Rovers and Associates	17
Envirosure Solutions	19
Emergency Response, Inc.	18
Gatekeeper/Regulatory Roundup	2
Hazard Prevention Institute (HPI)	11
Kary Environmental Services	5
Liquid Environmental Solutions	16
MP Environmental Services, Inc.	17
N. Weiss Associates, Inc.	11
PSC	13
Red J Environmental	8
Republic Services	4
Turner Laboratories, Inc.	16
Univar	20
Yellow Jacket Drilling Services	13

Clear Creek Associates Celebrates 10 Years

Clear Creek Associates, the highly respected Arizona as well as national hydrogeological consulting firm, recently announced the celebration of its 10th Year Anniversary. It opened doors at its Phoenix/Scottsdale office on September 7, 1999, and the Tucson office soon after on November 1, 1999. Clear Creek



was founded by hydrogeologists Doug Bartlett and Marvin Grotfelty, as a small group of seasoned professional scientists offering a strong blend of technical capabilities, project coordination skills, and extensive statewide experience.

The consulting firm was formed "to offer groundwater solutions to clients in an honest, lucid, straightforward manner, communicating simply and clearly with water purveyors, developers, drilling contractors, laboratories, policymakers, regulators, water managers, and lawyers."

Demand for the company's expertise has grown over the last ten years, as has its geographical focus, broadening from the specific conditions posed by the Arizona's unique desert geology, to the very different geology and regulatory environment of California; and, most recently, to the challenges and conditions that the East Coast faces. To respond to the increased demand for its "practical solutions" approach, the company has also grown its staff, with current employees numbering thirty-five, in three satellite offices: in addition to its Phoenix headquarters, Clear Creek has offices in Tucson, Arizona; in Claremont, California; and in Leesburg, Virginia.

In its recent statement, Clear Creek said, "Safe, adequate, and protected freshwater resources are central to the economy, foreign policy, and security of the United States as it is for people everywhere. The impact of climate change, growing demand and shrinking supply, and a large and uncoordinated number of "players" concerned with water has never been more urgently felt than it has in the last decade. Improving the efficiency of water use through a variety of means is the key to facing the challenges ahead. As it begins its second decade, Clear Creek Associates is poised to provide its practical solutions for a more efficient and sustainable water future." Clear Creek maintains a website at www.clearcreekassociates.com, and can be reached at 480-659-7131 (Phoenix) or 520-622-3222 (Tucson).



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Greenbuild



In early November the City of Phoenix was fortunate to host Greenbuild, the international conference and expo focused on LEED, green building and sustainability. For those who have never attended a Greenbuild conference, it is not typical so I thought I would provide my perspective on the event.

I attended Greenbuild last year in Boston and after seeing its size wondered whether Phoenix could accommodate it adequately. Phoenix's new convention center turned out to be a great venue. The event was extremely well organized and I'm sure had a nice economic impact for downtown. Kudos to the City of Phoenix!

The magnitude of this event is astounding; this year over 27,000 people attended and 1,700 companies exhibited their wares. The plenary session held at Chase Field featured presentations by Rick Fedrizzi, CEO of the US Green Building Council, and former Vice President Al Gore and a concert by Sheryl Crow. There were more technical sessions than could possibly be attended and plenty of hospitality parties. The exhibit halls were nothing short of overwhelming. An entire day (or more) could be spent learning about the thousands of products and services associated with green building and sustainability. For those I was able to get to, the time was well spent and informative but there was simply too many.

But what about the fundamental reason for the event (for me anyway), generating new business? It is easy to let the spectacle overshadow what we were there to do, and in this case it did. Did I take away any new business? No. I did, however, succeed in marketing our company to help further our presence in the sustainability market place, forged some new relationships, maintained a few others and attended technical sessions that were helpful. But it is difficult to identify any measurable business from it. I dare say, there is a lot of "fluff" associated with the event, but also a great deal of substance. As I dive deeper into the business of sustainability it's getting easier to recognize the difference and I'm impressed by the number of emerging companies driven less by saving the planet and more by efficiency and saving their clients money. I think the bigger impact of the event is on a macro scale and what it means to the overall health of our industry.

The magnitude of Greenbuild alone, especially in this economy, makes a significant statement about the strength and position of the green building movement and sustainability in the evolution of our industry. I'm a believer in the movement outside of Greenbuild, but to see the money companies spent marketing their products and services, the level of effort spent on hundreds of technical presentations and the commitment

by corporations large and small during the worst economic times in our lifetime tells me not just that the sustainability marketplace is here to stay, but that it is alive and well.

Joe Holmes is the Regional Manager of Business Development at ATC Associates. He can be reached at joe.holmes@atcassociates.com.

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