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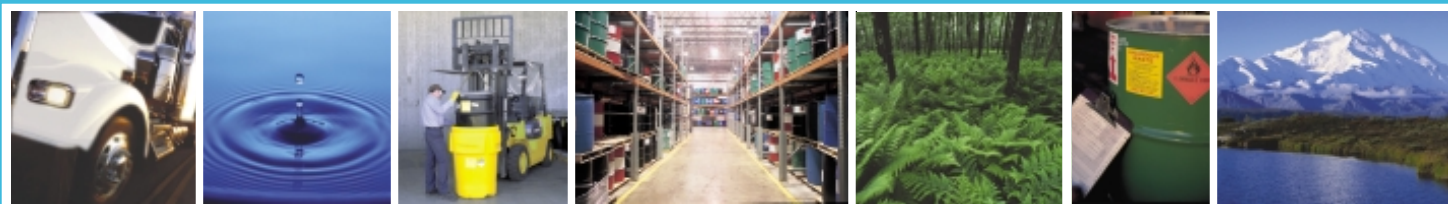
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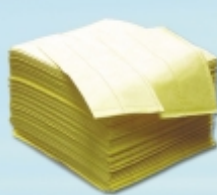
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Contents

FEATURES AND ARTICLES

8 PALO VERDE NUCLEAR GENERATING STATION

MAINTAINING A SMALL QUANTITY GEN. STATUS

10 ALTERNATIVE FUELS

MEETING THE NEW 8-HR OZONE STANDARD

24 TURNER LABORATORIES, INC.

TUCSON LAB CREDITS CLIENTS & STAFF

COLUMNS

12 SUSTAINABLE DEVELOPMENT

MANY PEOPLE IN MANY PLACES

NICHOLAS R. HILD, PHD.

17 IT'S ALL ABOUT CHEMISTRY

THE END OF CHEAP OIL

LARRY OLSON, PHD.

18 REGULATORY DEVELOPMENTS

NINTH CIRCUIT VACATES AZPDES PROGRAM

MICHAEL C. FORD, ATTORNEY

23 PROSPECTING: FOR ENV. BUSINESS

THE VALUE OF ASSOCIATION MEMBERSHIPS

JOE C. HOLMES, ENVIRONMENTAL DATA MGMT.

DEPARTMENTS

6 FROM THE EDITOR

20 NEWS BRIEFS

14 ASSOCIATIONS PAGES

13 ADVERTISERS INDEX



PVNGS Small Qty Generator Status
page 8



Turner Laboratories, Inc.
page 24



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COVER: LEFT TO RT: DAN BLACKSON, TOM HILLMER, & ALAN CHAMBERLAIN INSPECT HAZ WASTE DRUM AT PALO VERDE NUCLEAR GENERATING STATION

From the Editor



One advantage of having a business "mission statement" is that you can use it as a measure to determine if your business is still "on-track." The mission of the Journal is to provide "practical and current information for environmental, health, and safety professionals" in Arizona. We accomplish this is by providing a public platform for the exchange of EH&S information — that is, the magazine you are reading now.

Finally, the means to support this mission is through the sale of advertising to businesses that market to the environmental and safety community.

So, as the Journal nears three years in publication, are we still "on-track"? In many ways, in my opinion, yes we are. Based on feed-back from readers like yourself, readers enjoy the Journal, look forward to receiving each issue, and get a lot of value from the articles, columns, and advertisements. But I would not give us an "A+" yet — I think the Journal could be even better. I think soon, for example, we should be expanding with more articles with basic "how-to" information for new as well as experienced environmental managers. I'd like more articles highlighting the accomplishments and successes of local companies and EH&S professionals, and I would like room for more photographs.

So, how do we get there from here? To expand and improve, a business needs expanding income. This is key to getting to where we need to be. Unfortunately, I am a natural-born "non-salesman." But if I don't make an occasional plug for advertising sales, we won't have any, so here goes.

The Journal has had great advertisers from the beginning, and we deeply appreciate their support. But (there is always a "but") there are many others who could benefit from advertising in the Journal who have not yet done so. If you would like to be a Journal advertiser, please consider making your decision now. With your participation, the Journal will become even better, and readers will show their appreciation back to you as they have to others. Thank you.

Sincerely,

Jim Thrush, MS

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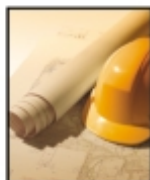
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Palo Verde Nuclear Generating Station

How does the nation's largest
power producer maintain its
small quantity generator status
for hazardous waste?

by Michael S. Sexton

As the "owner" of the Waste Programs at Palo Verde Nuclear Generating Station, Tom Hillmer CHMM, Environmental Consultant, faces this question every day as he commutes to the APS-operated facility located 45 miles west of Phoenix.

Since the facility's nuclear reactors result in the generation of electricity without the need to burn fossil fuels, controlling the waste from this facility may appear to be a simple task. But, due to the thousands of hazardous chemicals used in support systems and maintenance activities, successfully managing waste has been a tremendous challenge.

The good news is that since nothing is burned, Palo Verde has displaced more than two million tons of sulfur dioxide (reducing acid rain) and more than 400 million tons of carbon dioxide since starting commercial operations in 1989. The not-so-good news is that within just a few years of operation, Palo Verde was generating more than just a lot of electrical power. In 1989, it generated more than 300,000 pounds of hazardous waste. While this volume may be normal for other facilities of similar size, it was not where we wanted to be.

Unfortunately, back then, our cradle-to-grave process primarily was directed toward properly disposing of this waste, with few resources left to attack its generation. At that time, if

SIDE NOTE

The Palo Verde environmental team could nearly qualify as an alumni chapter of Arizona State University. Tom Hillmer (CHMM, Environmental Consultant), Dan Blackson, (Palo Verde Environmental Section Leader), and Alan Chamberlain (Palo Verde Environmental Scientist) are all ASU graduates!



Photo at left: Tom Hillmer, left, and Alan Chamberlain close a drum at PVNGS.

anyone dared to dream of becoming a small quantity generator, the thought would seem to leave as soon as the next pallet of drums would arrive for disposal. However, once we started putting more energy and focus on the front end (cradle), we noticed that we had less waste heading down the road for burial (grave). What we found is that you can choose to spend all of your time developing the tools necessary to handle large volumes of waste, or start to invest some of those efforts into minimizing or eliminating their generation.

"Waste minimization is a value that has to be cultivated into any organization's culture before it becomes a consistent ingredient built into every job," says Dan Blackson, Palo Verde Environmental Section Leader. Since 2000, Palo Verde has averaged a monthly generation of fewer than 1,000 pounds of hazardous waste, while enjoying its small quantity generator status. Especially during big jobs like replacing steam generators (see picture on cover) – Palo Verde feels that the following seven principles are key to keeping waste-generation levels low:

1. Less is more:

- The fewer products you have approved for use the more control you have on their use and any wastes generated. Palo Verde uses a product justification and approval method for all chemicals used on its site.
- The lower hazard a product possesses, the more it's likely to be a product of choice. Palo Verde routinely searches for products with a lower hazard to substitute or replace products with a greater hazard.

2. Work area experts or Single Points of Contact (SPOCs):

- SPOCs are involved in the purchase of new products and serve as the primary interface between the chemical users or waste generators in their group and the Environmental staff.
- SPOCs oversee the use of chemicals/waste generation within their group and provide training to co-workers on waste-minimization techniques.

3. Just-in-time purchasing:

Purchasing products just prior to a job, especially a big job:

- Reduces the chance of products exceeding shelf life should the job experience delays.
- Improves the accuracy in the quantity of products purchased and minimizes over estimating.

4. What your employees know:

- Mandatory training is provided to each worker requiring site access on chemical use and fundamental waste-minimization principles.
- Environmental staff performs focused training to work groups.
- Project-specific training is provided to contract workers for certain projects.
- Environmental website provides on-line assistance and



Storing hazardous waste drums: Left to right: Tom Hillmer, Alan Chamberlain, and Dan Blackson.

instruction for the majority of waste-related issues.

5. Who your employees know:

- Environmental staff is highly visible and accessible for questions.
- Environmental websites provide on-site and off-site contact info for staff.
- Posters are strategically located to provide contact info during big jobs.

6. Engage the worker:

- Environmental awareness campaigns are conducted regularly, enlisting workers to embrace environmental initiatives.
- Employee recognition program rewards exceptional environmental performance or behaviors.

7. Avoid the peaks:

- Prior to conducting jobs involving large quantities of waste generation, other wastes being collected at satellite accumulation areas are transferred early to reduce work load during these periods.
- Job planning is encouraged to better distribute high waste-generating jobs apart.

Although, the 7 principles mentioned above will definitely get you headed in the right direction, nothing compares to having a good working relationship between the environmental

Continued on pg 13

bringing Maricopa County into Compliance with the new 8-Hour Ozone Standard. An Analysis of the benefits of:

Alternative Fuels*

Maricopa County has until 2009 to demonstrate compliance with the new 8-hour ozone standard. Angela Ratynski presents her ASU Graduate research findings on the option of using alternative fuels to augment current planned measures to meet the new standard

by Angela Ratynski

Air quality is a major concern for the Phoenix metropolitan area. When air pollutants are above acceptable levels, health effects such as the aggravation of preexisting respiratory conditions and an increase in daily hospital admissions and emergency room visits for respiratory causes can result. One air pollutant of concern to Maricopa County Environmental Services Department is ground level ozone. Ground level ozone results from the emission of volatile organic compounds (VOCs) and nitrogen oxides (NOx) from industrial sources as well as vehicle exhausts. These emissions, when trapped by an inversion layer and exposed to sunshine, result in the formation of photochemical smog. Because Maricopa County experiences both inversion layers and abundant sunshine, the Phoenix Metropolitan area is prone to photochemical smog.

New 8-Hour Ozone Standard

To better protect public health and welfare from the effects of ground-level ozone, the EPA authorized a new 8-hour

ozone standard in 1997. This new standard is to replace the existing 1-hour ozone standard. Under the new 8-hour ozone standard, the Phoenix nonattainment area has until 2009 to demonstrate compliance.

Maricopa County Environmental Services Department plans on implementing many federal programs to help the County come into compliance with the new standard. Two of the programs that Maricopa County will implement are the Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Program and the Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements. These two programs apply only to onroad mobile sources operating on diesel fuel.

Alternative Fuels

The question raised in my research is, what other measures can be taken if the enactment of the new programs is not enough to bring Maricopa County into compliance with the new 8-hour standard, given that the county is growing at a rapid pace? (According to the U.S. Census Bureau, an estimated 3.1 million people resided in the Phoenix metropolitan area in 2000, and by 2040 this number is expected to reach 6 million). My research focused on implementing alternative fuels in onroad mobile sources as a replacement for conventional petroleum-derived diesel as another possible alternative.

Biodiesel

One cleaner burning substitute for petroleum-derived diesel is biodiesel. Biodiesel is a domestically produced, renewable fuel that is derived from a variety of sources including soybean oil, canola oil, sunflower oil, cottonseed oil, and animal fats. These sources can be obtained from agricultural feedstocks or by recycling used oil such as cooking grease. The most common formulation is a blend of 20% biodiesel and 80% petrodiesel (B20). According to the National Biodiesel Board and EPA, biodiesel emissions of volatile organic compounds are 93% lower and emissions of nitrogen oxides are 13% higher

*This article is a synopsis of a Master of Science in Technology Applied Project entitled *Meeting the 8-Hour Ozone Standard in Maricopa County, Arizona by Implementing Alternative Fuels as a Substitute For Petroleum-Derived Diesel*. For more information on the subject, please contact the author at adr_research@yahoo.com.

than those emissions expected from petroleum-derived diesel.

Fischer-Tropsch Fuel

Another cleaner burning substitute for petroleum-derived diesel is Fischer-Tropsch fuel. Fischer-Tropsch fuel has been used to some degree since the 1920's. However, it is not currently being widely used in the United States. The Fischer-Tropsch technology converts coal, natural gas, and low-value refinery products into a high-value, cleaner-burning fuel. The most common formulation is a blend of 33% Fischer-Tropsch fuel and 67% petroleum-derived diesel fuel. According to the National Renewable Energy Lab, Fischer-Tropsch fuel emissions of volatile organic compounds are 22% lower and emissions of nitrogen oxides are 13% lower than those emissions expected from petroleum-derived diesel.

Is Biodiesel or Fischer-Tropsch Fuel the Better Alternative?

Many factors can be studied to determine whether biodiesel or Fischer-Tropsch fuel is a better alternative when looking to replace petroleum-derived diesel. Several of these factors include: capital costs for new production plants, infrastructure costs to retrofit locations that are currently providing petroleum-derived diesel to their customers, the ease of use for customers, actual fuel costs, vehicle modifications to accommodate the new alternative fuel or costs associated with new vehicles operating on biodiesel or Fischer-Tropsch fuel, and emission reductions. Of the six criteria studied, research showed that capital costs, fuel costs and emission reductions are key factors when taking these two alternative fuels into consideration.

Capital Costs

The first area of research centered on capital costs. As of the writing of this article, there are biodiesel production plants operating throughout the United States. Fischer-Tropsch fuel, on the other hand, is much less widely available. Currently, there are only three Fischer-Tropsch pilot plants operating in the United States. Studying the costs associated with the existing plants, it was determined that the cost to build a plant within the United States to produce Fischer-Tropsch fuel is approximately twice the cost to build a plant within the United States to produce biodiesel.

Fuel Costs

The next area of research centered on fuel costs for both biodiesel and Fischer-Tropsch fuel. Research showed that:

- The retail cost of biodiesel is 3.01% higher than the retail cost of conventional petroleum diesel on the West Coast.
- The retail cost of Fischer-Tropsch fuel is estimated to be 11.12% higher than the retail cost of conventional petroleum diesel on the West Coast.
- When compared to each other, the retail cost of Fischer-Tropsch fuel is 8.3% higher than the retail cost of biodiesel.

Emission Reductions

The last area of research centered on the emission reductions achieved through the implementation of biodiesel and Fischer-Tropsch fuel. Volatile organic compounds (VOCs), nitrogen oxides (NOx), and particulate matter (PM) are all released from vehicle exhausts. However, this research was limited to only those emissions which lead to photochemical smog. Therefore, emission calculations were only performed for VOCs and nitrogen oxides. The following

assumptions were made while performing these emission calculations:

- Information was obtained from Maricopa County Environmental Services Department's 2002 Periodic Emissions Inventory for Ozone Precursors.
- Research showed that VOC emissions are 95% lower when biodiesel is used and 22% lower when Fischer-Tropsch fuel is used.
- Nitrogen oxide emissions are 13% higher when biodiesel is used and 13% lower when Fischer Tropsch fuel is used.

By making the assumption that 25% of all diesel burning vehicles are converted to either biodiesel or Fischer-Tropsch fuel, the following results were obtained for Maricopa County's 2002 ozone season:

- If 25% of the vehicles were converted to biodiesel, then 603,283 pounds of VOCs were emitted into the atmosphere.
- If 25% of the vehicles were converted to Fischer-Tropsch fuel, then 747,676 pounds of VOCs were emitted into the atmosphere.
- This compares to 791,191 pounds of VOCs emitted into the atmosphere if all the vehicles had been operating on petroleum-derived diesel.

This leads to the following conclusions regarding VOC emissions:

- By converting to a 25% biodiesel fleet, 187,908 fewer pounds of VOCs were released into the atmosphere during the 2002 ozone season. This is a difference of 23.75%.
- By converting to a 25% Fischer-Tropsch fuel fleet, 43,516 fewer pounds of VOCs were released into the atmosphere during the 2002 ozone season. This is a difference of 5.5%.

Turning our attention to nitrogen oxide emissions, the following results were obtained for Maricopa County's 2002 ozone season:

- If 25% of the vehicles were converted to biodiesel, then 107,619,488 pounds of nitrogen oxides were emitted into the atmosphere.
- If 25% of the vehicles were converted to Fischer-Tropsch fuel, then 100,844,411 pounds of nitrogen oxides were emitted into the atmosphere.
- This compares to 104,231,950 pounds of nitrogen oxides emitted into the atmosphere if all the vehicles had been operating on petroleum-derived diesel.

This leads to the following conclusions regarding nitrogen oxide emissions:

- By converting to a 25% biodiesel fleet, 3,387,538 more pounds of nitrogen oxides were released into the atmosphere during the 2002 ozone season. This is an additional 3.25%.
- By converting to a 25% Fischer-Tropsch fuel fleet, 3,387,538 fewer pounds of nitrogen oxides were released into the atmosphere during the 2002 ozone season. This is a difference of 3.25%.

Since the question being raised in this paper is what other measures can be taken to offset emissions in an area that is growing at a rapid pace, it is important to look at future emissions of VOCs and nitrogen oxides from biodiesel and Fischer-Tropsch fuel based on future projections of population growth.

Based on population growth projections obtained from the
Continued on pg 13



Sustainability and Sustainable Development

Nicholas R. Hild, PhD.

Sustaining Our Efforts:

Many People In Many Places

Sometimes, we need to pause to give credit to some folks within the community of professionals who have worked long and hard *on behalf of* the Arizona environment in their daily quest to put bread on the table. These aren't the people you read about because they make waves and attract attention; these folks go about the business of really making a difference without fanfare. They are the real heroes who implement sampling, remediation, laboratory testing, and communications programs to reduce environmental degradation throughout the Arizona Territory and we need to thank them publicly for all their efforts.

What got me thinking about writing about a few of these unsung (environmental) heroes was the recent announcement you probably didn't see buried in Section D, Page 3, subparagraph E, Lines 4, 5, and 6 of the local newspapers, that Jim Thrush (yes, the same man who edits and publishes this very Journal) has taken on yet another task as President of the Arizona Environmental Strategic Alliance (AESA). The Alliance, for those of you unfamiliar, is a non-profit organization that has a half-dozen or more Arizona corporation members who are recognized as leaders in their respective industries in implementing environmental programs that are "beyond compliance." Most are, in fact, recognized internationally as leaders in creating sustainable environmental practices. Most recently, the Alliance teamed with EARTH 911 to bring you an ONLINE Waste Exchange service (www.azrex.org) that is helping with disposal of wastes in ways that minimize impact to the Arizona environment.

The mission that AESA has is to use their collective

member company experiences in mentoring other companies to help design and promote better and more sustainable Environmental Management Systems, thereby raising the bar for environmental stewardship in Arizona. As the President, Jim's task is to "manage" the member participants and find resources to continue bringing in new member companies that also meet "*beyond compliance*" criteria and sustain efforts to make Arizona industry's environmental impact a bad memory.

There are a whole lot of other environmental professionals who need to be recognized for their dedication to the environment, also. If you look at the advertising in this Journal, from the smallest to the largest spaces taken, you will see some of those environmental professionals who've put their money where their heart is. One of the most notable is David Kirchner, and his trusty dog Dusty, whose cows have been outstanding in their field on the back cover of every issue. Like a few others mentioned here, his environmental firm has been helping folks understand and remedy contamination all over Arizona since the early 1980's, so David is a perfect example of environmental professionals who are quietly working to make the Arizona environment better.

Some of our environmental pros will be over-looked here but here are a few to whom Arizona owes a great big "thank you." Nancy Turner of Turner Labs, Beth Proffitt at Transwest Geochem, Kathy Lacy at the (former) Chemonics Lab, Don Weber who pioneered mobile lab test services, Pete Allard and Bruce Scott of SA&B, Phil Lagas at Brown & Caldwell, Bill Wiley & Ed Fox at APS (and formerly an ADEQ Director), former Maricopa County Environmental Services Director, Al Brown (now at ASU), Norm Weiss, former AD at ADEQ (now with his own consulting firm and ASU), Rich Polito with Maricopa County and AZElm, Inc., Beverly Westgaard (Alliance Advisor/ADEQ), Jeff Homer at General Dynamics, and Tucson's Richard Carter, longtime Hispanic environmental advocate for our friends across the border. Then, we don't want to forget some of the greatest environmental legal minds west of the Big Muddy: David Kimball, Roger Ferlund, Rolf vonOppenfeld, Dan Brendon, Steve Wheeler, and AZDEQ's Steve Owens who helped write Arizona's comprehensive regulatory structure that underpins our environmental "management" practices.

As noted, there are many more and I apologize for those I didn't mention but this gives me a good entrée for asking each and every one reading this to stop and think about the Arizona environmental professionals that *you* know, who really put sustainable solutions on the ground. Then, think of how you can give them public recognition for what they are doing everyday for our Arizona environment. Then, *do it*. ... for our children's, children's, children.

Nicholas R. Hild, PhD., Professor, Environmental Technology Management, Arizona State University College of Technology and Applied Sciences, 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.

Sexton: Palo Verde Nuclear Generating Station

Continued from pg 9

staff and the workers charged with implementing the environmental controls established for each job.

"Whether I'm walking through the plant conducting satellite accumulation area inspections or answering a question on the phone, I know that if I can establish myself as a helpful resource, workers will contact me to get answers to their questions BEFORE a waste is generated instead of waiting until the job is done," says Alan Chamberlain, Palo Verde Environmental Scientist.

If you would like to know more about how Palo Verde provides electric service to about 4 million customers in the Southwest while minimizing hazardous waste generation, contact Tom Hillmer at (623) 393-5606 or email Thillmer@apsc.com.

Michael S. Sexton is an Environmental Sr. Scientist at Palo Verde Nuclear Generating Station. Michael can be reached by email at MSEXTON@APSC.com.

Holmes: Value of Association Memberships

Continued from pg 23

more the technical people are involved, the greater the association's value.

From the sales standpoint, association benefits are similar but with more emphasis on the networking aspects. We sales folks need to be careful though. Strong associations can sometimes become heavy with sales people looking to make that "next big contact," changing the dynamic of the group and causing disinterest among the technical people. If the technical people don't show, the value drops for everyone. It is so very important for business development people to respect the position of the membership and make specific efforts to keep the sales pitch to a separate forum.

I close with a story provided by Rob Barnett from Ping Golf that shows how association contacts can help an operation. It goes like this: "I used contacts met through an association to help solve an epoxy dispensing problem encountered during our manufacturing process. I figured with all the composite fabrication that Boeing does for aviation, they would have some good advice, so I called them to help me. Boeing suggested a vendor that will allow us to avoid a learning curve and allow us to jump to the solution. We are planning to return the favor by showing them how our EMS is integrated into the company and how it works." Good Stuff!!

Thanks to Rob and all who contributed this issue! Until next time.... thank you for all the comments and please keep the suggestions coming!

Joe C. Holmes is National Director of Sales & Marketing with Environmental Data Management. Joe can be reached by email at Joe.holmes@edm-usa.com.

Ratynski: Alternative Fuels

Continued from pg 11

Maricopa Association of Governments (MAG), Maricopa County is expected to grow from 3,072,149 residents in 2000 to over 6,000,000 in 2040. Using this data as well as estimation techniques for calculating VOC and nitrogen oxide emissions into the atmosphere, the following results were obtained:

- By 2040, there will be a total of 1,214,478 pounds of VOCs and 216,650,379 pounds of nitrogen oxides emitted into the atmosphere from those vehicles assumed in this study to be operating on biodiesel.
- There will be a total of 1,505,152 pounds of VOCs and 203,011,372 pounds of nitrogen oxides emitted into the atmosphere from those vehicles assumed in this study to be operating on Fischer-Tropsch fuel.

Conclusion

In conclusion, if VOC emissions are the limiting factor in Maricopa County's ozone nonattainment airshed, then biodiesel is the fuel to implement as an alternative to petroleum-derived diesel. On the other hand, if nitrogen oxide emissions are the limiting factor in Maricopa County's ozone nonattainment airshed, then Fischer-Tropsch fuel is the fuel to implement as an alternative to petroleum-derived diesel.

Angela Ratynski is a recent graduate from Arizona State University with a Master of Science in Technology. Angela can be reached by email at adr_research@yahoo.com.

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Associations Pages

ACHMM Thunderbird



UPCOMING EVENTS:

- Oct. 19, 2005 Thunderbird Chapter meeting
- Oct. 25, 2005 Multi-group Social/Networking Event
- Nov. 16, 2005 Thunderbird Chapter Meeting
- Dec. 7, 2005 Thunderbird Chapter Holiday Party
- Feb. 21-22, 2006 Gatekeeper Reg. Round-up
- Feb. 28 - Mar. 3, 2006, CHMM Overview Course

Upcoming Events! Katrina Fund- EPAZ kicked off this effort to collect donations for the environmental clean-up in Louisiana. The Thunderbird Chapter quickly matched their donation, followed by Romic Environmental Services. Don't miss this opportunity to do your part! Contact Eddie Martinez at 480-785-0043, x234 for details.

ACHMM, EPAZ, and The Auditing Roundtable have combined forces to host a **Special Multi-Group Social & Networking Event!** This is a great opportunity for EHS professionals to become familiar with the members and missions of these related organizations

Mark your calendars for the **2nd Annual Gatekeeper Regulatory Roundup** on Feb 21-22, 2006! The Thunderbird Chapter will once again team with EPAZ and AZSERC to offer a bigger and better event. And don't forget the upcoming **CHMM Overview Courses**. The Chapter will be offering the course in February 06 in Tucson as part of the Waste Management Symposium, and again next April in Phoenix. Watch for details (see ad on page 4).

Regular monthly dinner meetings start with a social/networking opportunity at 5:30 PM on third Wednesdays. **New meeting location: Macayo's Mexican Kitchen**, 4001 N. Central Ave., Phoenix. Details: www.thunderbirdchmm.org.

Chuck Paulausky,
Vice President



EPAZ



EPAZ holds monthly luncheon meetings on the 2nd Thursday of the month. EPAZ also gathers on the last Wed. of the month for a casual cocktail mixer. Visit <http://www.epaz.org> for more details regarding upcoming meetings and our monthly mixer location or contact Eddie Martinez at (480) 785-0043 ext. 234.

September's meeting "AZPDES - What's Going On?" was presented by Mitchell J. Klein, Bryan Cave LLP. Mr. Klein brought us up to speed with the latest and greatest regarding the recent 9th Circuit Court of Appeals decision to vacate the EPA's approval of Arizona's Pollution Permitting Application. Mitch shared how EPA and the ADEQ have been responding to this decision and what it may mean to you as an AZPDES permit holder. Stay tuned as we report on this continuing saga.

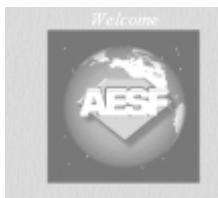
The September mixer will be held on the 28th at Rock Bottom located at Desert Ridge Mall. October's meeting will be held on the 13th and will feature Dr. Paul C. Johnson, Associate Vice-President of Research at Arizona State University. The topic of his presentation will be on the problem of intrusion of organic vapors from contaminated soils and/or groundwater into buildings.

The October mixer will be held on Tuesday, October 25 at Aunt Chilada's at Squaw Peak (16th Street & Morton) and will co-hosted by EPAZ, the Thunderbird Chapter of the ACHMM and the Auditing Roundtable. Planned topics for the November and December meetings are developments in Air Toxics and Renewable Energy.

Eddie Martinez,
President



AESF



Come join the Greater Arizona AESF (American Metal Plating and Surface Finishers) for meetings on metal finishing, plating, regulations, waste, and environmental issues affecting the industry. The event and speaker schedule for 2005-2006 season is still under review. The next meeting is planned for November, you are not required to be a member to attend.

Please call if you would like to be notified of upcoming AESF events and receive our news letter or have your business/business card listed on the news letter please call or send an e-mail to Barry Westerhausen at bwesterhausen@lachim.com (480) 206-4107 or Mark Thede at markthede1@cox.net (480) 695-4344.

Barry Westerhausen,
Sergeant at Arms





*Michelle R. Freeark,
President*

The 2005 Binational Pollution Prevention Seminar: P2 on the Right Track held on Thursday, September 22nd was a great success. A special thank you to all of the seminar sponsors and ALCOA Fastening Systems for hosting a facility tour for the afternoon session. SAEMS is seeking mentors for the City of Tucson Brownfields Job Training Grant program. SAEMS role is to provide a successful mentoring program to help keep the students motivated and prepare them for a career in the environmental field. Your commitment is approximately 5 hours per month over 8 months. This is a great opportunity to help students make a career in the environmental field. Please contact Michelle Freeark if you are interested in becoming a mentor. The training program begins in January 2006.

SAEMS will soon be offering polo shirts and hats with the SAEMS logo embroidered for sale to our members. The merchandise will be available for purchase at each luncheon meeting for your convenience.

SAEMS



WWW.SAEMS.ORG

LUNCHEON MEETINGS HELD ON THE LAST WED. OF THE MONTH AT 11:30 A.M.

At **THE MANNING HOUSE**
450 W. PASEO REDONDO, Tuc.

Luncheon Topics:

October 28: Tim Thomure, Tuc.
Water; 50-year Master Plan
Nov: No Meeting
Dec. 7: Frank Bonil I as, Tucson/
PC HHW Program; HHW
Program Transfer to COT



*Ed Collette,
Secretary*

Black Boxes In Vehicles:

Air Bag Black Boxes are installed in your vehicle by the manufacturer to record crash data.

The Black Box can record in five one-second intervals preceding impact the vehicle speed, engine speed, brake status and throttle position. It also shows whether the driver's seat belt state is On or Off, the passenger's airbag is in the enabled or disabled state, and if the Airbag Warning Lamp status was On or Off. It will also indicate the time from vehicle impact to airbag deployment, max. delta-V (DV) for near-deployment event, delta-V (DV) vs. time for frontal airbag deployment event, time from vehicle impact to time of maximum Delta-V (DV) and time between near-deploy and deploy event (if within 5 seconds)

Another type of Black Box System can be purchased and installed in your own car. This Black Box System reduces the likelihood of a vehicle crash and creates a safer driving environment for drivers. It does this by encouraging the elimination of unsafe and aggressive driving behaviors and increasing the driver's awareness while behind the wheel. Any time an unsafe driving condition is detected by the "Black Box", an immediate audible warning is given to the driver. Unsafe conditions include high speed driving, failure to fasten seat belts, hard cornering, aggressive "pedal-to-the-metal" acceleration, hard braking, street racing, etc. With this immediate audio feedback, the driver is reminded to stop the unsafe condition at the moment it is happening, the same as if you were in the car sitting next to them.

American Society of Safety Engineers

For information on Meetings and Training:

visit <http://southaz.asse.org>
or call Edward Collette
at 520-740-2656 or
edward.collette@wm.pima.gov



*Peter Kroopnick,,
President*

Fresh off the 2005 AHS Annual Symposium held in Flagstaff in September, October marks the return of our regular meeting schedule. AHS Chapters have a variety of meeting topics and activities planned for the next couple of months.

In Phoenix, Basil Boyd of City of Tempe will talk about Tempe Town Lake at the October meeting, and Dr. Stephen Reynolds of ASU will present information about Geowall in November. The November 8 will be held in conjunction with AEG.

The Tucson Chapter is organizing a field trip to the Nogales International Wastewater Treatment Plant in October. Later, the November 8 dinner meeting in Tucson will feature Janet Napolitano's Chief of Staff, Alan Stephens, who will be leading a discussion on Arizona's Drought Water Task Force. Our Flagstaff Chapter often coordinates their meetings with presentations at NAU, so stay tuned.

For more information on AHS membership and activities statewide, please visit our website at www.azhydrosoc.org.

Arizona Hydrological Society



please visit the AHS web
site: <http://www.azhydrosoc.org>

AZ ELM



For Information Visit
www.azelm.org or call
Rich Polito at
623-582-8112

The Annual AZELM SEED event will be held again at the Orange Tree Resort in Feb. 2006. As this year's conference starts to take shape, we would like your input on content considerations that could be integrated into the SEED event program. The new meaning for 2006-SEED is "Strategic Environmental & Economics Dynamics." This year we will provide some national speakers that showcase models that have been developed showing potential cost savings when managing environmental obligations. The theme for the AZELM Conference will be "Greening-up your Bottom line." If your company would like to be a Vendor or Sponsor please go to our website www.azelm.org and click on vendor/sponsor contact information. It is also time for a call for nominations for the 2006 "Bill Kicksey Environmental Leadership award." We would love to hear from individuals from around our great state who could help in our mission to be an efficient and effective educational organization for Arizona.

With your support we could all provide adequate personnel and other resources for a coordinated and unified approach to pulling environment and leadership together. The great thing about AZELM is not so much where we stand today, as what direction we are moving tomorrow. Models have been developed by numerous organizations; however, the choice of what ELM model to follow is best decided by individuals, business professionals and, community leaders. Remember that opportunities don't always knock; sometimes you have to find the door yourself and know when to open it. Business is all about connections; together we can open a lot of doors with www.azelm.org. Contact me at 623-582-8112 or by email at rpolito2@cox.net. Richard Polito, past Air Quality Resource Center manager.



Richard Polito

Valley Forward



**VALLEY FORWARD
PRESENTS TOP
ENVIRONMENTAL
AWARD
TO McDOWELL
SONORAN LAND
TRUST**

For information, call
(602) 240-2408 or visit
www.valleyforward.org.

The McDowell Sonoran Land Trust in Scottsdale won top honors – the President's Award – in Valley Forward's 25th Annual Environmental Excellence Awards program, Arizona's oldest and most prestigious environmental competition.

Judges for the program acknowledged that protecting a 1.8 billion year-old treasure is a lofty responsibility and recognized MSLT for creating a powerful alliance for preserving 57-square-miles – one third of the city of Scottsdale – as natural, public open space. A grass-roots, volunteer-driven non-profit organization, MSLT has worked in tandem with the city for 15 years to ensure completion, management and public appreciation of the McDowell Mountain Preserve.

The award was announced last month at Valley Forward's silver anniversary gala, held in partnership with SRP. Nearly 700 community leaders attended the event.

Valley Forward and SRP recognized 46 projects submitted by Valley businesses, government agencies and non-profit organizations for significant contributions to the environment. In addition to the President's Award, 18 first-place Crescordia awards and 28 awards of merit were presented. For more information or a listing of locations hosting the awards exhibit, call 602-240-2408.



Diane Brossart,
President

AAI

AAI's Webpage:
www.azind.org

AAI's 3rd annual energy summit will be held on Wednesday November 2nd at the Scottsdale Plaza Resort. This year's conference will address a number of important energy issues including generation, transmission, capacity, and distribution. Please mark your calendars and plan to attend. For more information contact James Tunnell at 602-252-9415 or go to AAI's web page as www.azing.org. Sponsorship opportunities are available.

AAI's Air Subcommittee continues to participate in the ADEQ HAP's stake holder process and to meet regularly to review and discuss the materials and proposals being presented at these meetings. The association's Water and Waste and Remediation Subcommittee's also continue to meet routinely to discuss emerging and ongoing issues. Contact Jeff Homer at 480-441-6672 for more information.



Jeff Homer,
EHS Committee
Chairman



It's All About Chemistry
***The End of
Cheap Oil***

Larry Olson, PhD.

A headline to make you sit up and take notice – that was the cover of National Geographic for the June 2005 issue. In the wake of Hurricanes Katrina and Rita, the reliance of America on vulnerable Gulf Oil wells and refineries has frightened financial markets and exposed the fragility of our entire energy system. For how much longer can we live, in Daniel Yergin's term, in the "Age of Hydrocarbon Man?"

First, some undisputed facts. However you define sustainability, the way in which the world is using an irreplaceable asset does not measure up. We are not in imminent danger of running out of oil, but world demand is now about 80 million barrels per day (with the U.S. share of that being about 20 million barrels per day). The relentless growth in demand shows no sign of slowing down, not just in the U.S., but in regions of the world that until recently used comparatively little petroleum. China has already, or soon will, pass Japan to become the second largest consumer at over 5 million barrels per day. Since no new oil is being produced (at least not at a rate which will benefit any of us), there will be a point at which demand outstrips supply. The question is when?

U.S. oil production peaked in 1970, when domestic sources could supply about 2/3 of the nation's requirement. Since then, decreased production and increased demand has meant that the U.S. now has to import 58% of the oil it uses. While it is true that new U.S. sources may exist in ANWR (Alaska Natural Wildlife Refuge) or in deep waters off the Gulf, the United States doesn't even make the top ten in proven oil reserves by country. Any arguments about the U.S. trying to achieve energy independence by increased drilling, reliance on shale oil, etc. aren't realistic. As long as we remain dependent upon petroleum we will be dependent upon imported oil.

Even though U.S. production has peaked, the amount of oil produced worldwide continues to grow. But the gap between supply and demand is narrowing and there is serious disagreement about the extent of worldwide reserves and the ability of technical advances to continue to make the recovery of previously inaccessible oil profitable. Pessimists predict that the "tipping point," that is the point at which world production peaks and then begins to fall may be only a few years away. Optimists say that this momentous event won't happen for a generation or more. Which side is right will have a huge impact in the short term on oil prices, political events, and disruptions to our daily lives. But in the long run, it doesn't really matter. Oil is going to become significantly more scarce and more expensive in our lifetime or our children's. Whether it is 5 years or 50 years, we will have to find alternatives to simply burning up a wonderfully complex and valuable starting material for drugs, polymers, plastics and solvents. The sooner we start, the less painful it will be.

In the next few issues, we'll look at some of the most promising alternatives to using petroleum as a fuel such as biomass, hydrogen, solar and new ways to use coal.

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



Michael C. Ford, Attorney

Legal news you can use

Regulatory Developments

Ninth Circuit Vacates AZPDES Program

The shockwaves are still reverberating around the state and beyond in the aftermath of the *Defenders of Wildlife v. U.S.E.P.A.* decision issued on August 22, 2005.¹ In case you haven't heard, the Ninth Circuit Court of Appeals vacated the Environmental Protection Agency's (EPA) delegation of Clean Water Act National Pollutant Discharge Elimination System (NPDES) permitting authority to the State of Arizona, finding that EPA failed to meet its duty under the Endangered Species Act (ESA) to insure that the delegation is not likely to jeopardize protected species or adversely modify their habitats. Even for the infamous Ninth Circuit, this decision is a shocker, particularly considering that 44 other states have previously obtained authorization without being found to have run afoul of ESA requirements.

Prior to EPA's delegation of NPDES permitting authority to Arizona in December 2002, activities permitted under the NPDES program had to meet certain criteria to satisfy EPA's obligations under the ESA, which can significantly delay and increase the expense of permit issuance. ESA certification has not been a requirement for permits issued under the Arizona Pollutant Discharge Elimination System (AZPDES) program.

In a nutshell, the court concluded that under the ESA, prior to delegating CWA permitting authority, EPA was required to evaluate the impact of delegation on endangered and threatened species and their habitat. Although EPA had in fact evaluated the impacts, EPA's position waffled, and EPA clearly did not want the court to decide this issue, going so far as declining to take any position on the issue at the oral argument in the face of direct questioning from the judges. The court then found that the evaluation EPA had conducted (based on a "biological opinion" issued by the U.S. Fish and Wildlife Service) was defective because, among other reasons, it failed to properly

consider the potential impacts of permitted activities, particularly construction-related activities, on endangered/threatened species and critical habitat.

The ruling throws into question the validity and status of permits issued and managed under the AZPDES program, including the construction general permit for stormwater discharges, the multi-sector general permit for stormwater discharges from industrial activities (MSGP), the "de minimus" general permit, as well as individual AZPDES permits. Among the questions raised are:

- What is the status of the AZPDES program pending the effective date of the court's order?
- Does EPA and/or ADEQ intend to file a petition for review?
- Does ADEQ even wish to retain primacy?
- If primacy is vacated, what will be the impact on AZPDES permits, particularly those issued since delegation?

Aside from the obvious turmoil the decision creates for construction projects, it also comes at a crucial time for permittees under the federal MSGP, which is set to expire at the end of October. A revised MSGP (MSGP-2005) is expected to be published by EPA soon, but ADEQ has spent several years drafting its own version of the MSGP intended to replace the federal MSGP in Arizona (AZMSGP). ADEQ had hoped the AZMSGP would be ready before the MSGP-2005 takes effect, but ADEQ will likely hold off on releasing the AZMSGP until the *Defenders* decision is resolved, which could force permittees to file for coverage under EPA's MSGP-2005, and then subsequently transition to the AZMSGP upon resolution of the *Defenders* case.

EPA provided some answers in a letter to ADEQ dated September 9, 2005 confirming "EPA's position that unless and until the court's mandate is issued, Arizona's authorization to issue NPDES permits and implement the program remains in effect."² The Ninth Circuit's order will take effect on October 14 unless a petition for rehearing is filed within the 45-day appeal period. If a petition is filed, the order will not take effect until the court takes further action in response to the petition.

Early indications are that at least one petition for rehearing will be filed by the private party interveners (led by the National Association of Home Builders). As of this writing, EPA and ADEQ were still evaluating whether to file petitions, and had met to discuss their options during the week of September 19, although conventional wisdom has it that both will also petition. No doubt the *Defenders of Wildlife* are unhappy with EPA's position on the interim validity of the AZPDES program, and are evaluating their appeal strategy as well. By the time this column is published, the positions of the various parties should be more clear. However, the final outcome may not be known for several months, or even years, and ultimately could result in a petition to the Supreme Court.

¹ 420 F.3d 946 (9th Cir. 2005)

² See <http://www.azdeq.gov/download/strauss.pdf>.

Michael C. Ford is an Attorney with the Phoenix office of Bryan Cave, LLP, practicing environmental and occupational safety law. His practice is focused primarily on regulatory compliance advice and enforcement defense. He can be reached at 602-364-7417, or by email at mcford@bryancave.com.



*Rob Barnett,
Chairman*

Check out AESA's new web site! <http://www.azalliance.org>. We have been working diligently to improve our web site and add user friendly links and supply membership information.

Also, don't forget to register at www.azrex.org to help your company improve your bottom line and recycling needs. There have already been numerous exchanges that benefited both the lister and end-user. If you don't see what you need, you can even register for what you are looking for and have notifications sent to you!!!

AESA Members are comprised of an elite group of companies and organizations from throughout Arizona that have established themselves as environmental leaders, adopted environmentally responsible practices, demonstrated commitment to environmental quality, and maintained exemplary environmental compliance records.

If your company is interested in attending our next meeting or need additional information, please contact Jim Thrush at 480-422-7392 or Rob Barnett at 602-687-5000.

Arizona Environmental Strategic Alliance



*Charlie Popeck,
President*

Fall is always a busy time for Green Building and this year is no exception. The annual Green Building Expo, sponsored by the cities of Phoenix, Scottsdale and Tempe was held at the Scottsdale Center for the Arts on September 23rd and 24th and was a huge success!

The Arizona Chapter of the USGBC will be hosting a presentation on November 1st featuring Christine Ervin, the former CEO of the U.S. Green Building Council. The event will be held at the Desert Botanical Gardens and will feature Christine's unique insight on where the sustainable building movement is headed. Please see the "Chapters" section of the USGBC website at www.usgbc.org for registration information.

The U.S. Green Building Council's largest event of the year-GreenBuild will be held in Atlanta, Georgia at the Georgia World Congress Center from November 9th to the 11th. The purpose of the conference is to educate the public with three days of learning, networking and exploring everything you would ever want to know about the latest in sustainable design, construction, project financing and building operations.

To contact me call 602-512-0557 or email at Charlie@Egreenideas.com.

US Green Building Council Arizona Chapter



**Local Green
Building Expo A
Huge Success.**

**GreenBuild Coming
up In November**



*Tim Jones,
President*

SESHA had our summer chapter meeting in June which featured speakers on the latest arc flash rules, OSHA's top ten, and TSCA rules.

We are looking forward to exciting activities this fall. Don't miss the SESA/

CREATE Emerging Technologies Mini-conference October 31 through November 1, 2005.

The mini-conference is sponsored by SESA, CREATE/ASU, SEMI, SIA, and International SEMATECH. It will be held at the Sheraton Wild Horse Pass Resort located in Chandler, Arizona, 5594 West Wild Horse Pass Blvd. The registration flyer can be obtained on the SESA web site at www.seshaonline.org.

AZ Chapter Semiconductor Environmental Safety & Health Association

Contact Information:
E-mail : sesha@burkinc.com.

news briefs

Current AZ Performance Track Application Period Nears Close

❖ Arizona Performance Track Applications are available on the ADEQ website (www.azdeq.gov/function/about/track.html), but hurry — the current application period ends October 31st. The program is a voluntary partnership between ADEQ and businesses that recognizes and rewards environmental leadership. "Arizona Performance Track is designed to encourage companies to go above and beyond the minimum requirements of the law," said Owens. "We are looking forward to working with businesses that are good environmental stewards."

Owens launched the Arizona Performance Track effort in March. ADEQ will be accepting applications for inclusion in the program during two periods each year: February 1 - April 30 and August 1 - October 31. ADEQ also coordinates application reviews with the other participating departments - the air quality departments of Maricopa, Pima, and Pinal counties.

The Arizona Performance Track is modeled after a national Environmental Protection Agency program. Benefits of participating in the Arizona Performance Track include reduced inspection frequency, flexibility of permit conditions and consolidation of reporting requirements. In order to be eligible for the program, a company must demonstrate a history of compliance, a comprehensive environmental management system and a pollution prevention program.

Presto Casting Company Fined for Illegally treating Potentially Explosive Magnesium Particles

❖ ADEQ Director Owens recently announced a \$95,000 Penalty Against Presto Casting Company for Hazardous Waste Violations. The Glendale-based aerospace company Presto Casting will pay a \$95,000 penalty for illegally treating potentially explosive magnesium fines, or particles.

During a routine inspection in Jan. 2004, ADEQ inspectors caught Presto personnel treating magnesium fines, a reactive hazardous waste, with water in an open dumpster, releasing hydrogen gas.

"This was a dangerous, uncontrolled reaction because the magnesium particles were spilling out of the dumpster and releasing gas," Owens said. "If our inspectors hadn't intervened, this dangerous conduct could well have led to a serious fire or explosion."

Owens added that a second inspection in April 2004 revealed that Presto was still improperly treating the waste magnesium fines. "This was an unacceptable situation," Owens said.

ADEQ issued two Notices of Violation, citing Presto for illegal treatment and disposal of hazardous waste as well as failure to operate the facility in a way to prevent fires and releases, meet container management requirements, provide training to employees and post emergency information.

Fifth Annual P2 Seminar in Tucson Has Great Turnout

❖ The Fifth Annual P2 Seminar, presented by ADEQ, SAEMS, Tucson Fire Department, and the U. of A. Dept. of Risk Management and Safety, was held September 22nd in Tucson on the Pima Community College campus, followed by a tour of Alcoa Fastening Systems. Organizers were pleased with the largest turnout yet to the P2 Seminar, which featured presentations on P2 Fundamentals and Resources, Environmental Management Systems, Pollution Prevention case studies, the Arizona Resource Exchange, and a panel discussion on Arizona's Performance Track and Mexico's Clean Industry Program. A few photos from the P2 Seminar are shown below and on opposite page at top left.



Above: Andy Soesilo, ADEQ, spoke on ADEQ's P2 EMS Template.

Photo Below: Performance Track Panel Discussion. Left to right: Tim Wolfe, Motorola - Ocotillo; John Swanson, Sumex/Xerox; Henry Darwin, ADEQ.





Photo Above: Attendees listen to a question being asked at the "P2 On the Right Track" Seminar held September 22nd in Tucson.

Nano-Particle Technology Now Operating in Arizona to Remove Arsenic

❖ **McPhee Environmental Supply, LLC**, announced recently several system installations utilizing the hybrid-iron absorption media **ArsenX^{np}** to remove arsenic from public drinking water. Systems are now operating in Green Valley, Buckeye and Camp Verde, Arizona as well as Albuquerque, New Mexico. The systems were designed and installed by Conestoga-Rovers & Associates, Narasimhan Consulting Services, Odell Engineering and **McPhee** to meet the new arsenic limit of 10 ppb by the upcoming compliance deadline of January 23, 2006.



Green Valley Water Co. 1,400 gpm arsenic removal system under construction. *Photo courtesy of Conestoga-Rovers & Associates.*

McPhee is marketing arsenic removal systems utilizing the **ArsenX^{np}** technology within the states of Arizona, California, Nevada, New Mexico and Nebraska. **ArsenX^{np}** is a unique technology that is regenerable at exhaustion instead of the costly single-use media competitors. For more information about this technology contact Lisa Culbert, VP of Marketing at (888) 608-4637 or locally at (602) 943-9565.

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The Value of Association Memberships



For this issue we take a look into the value of industry association membership; from the business development perspective as well as the technical perspective. To help, we solicited input from environmental associations statewide and would like to thank EPAZ, ACHMM and the Arizona Environmental Strategic Alliance for their response and valuable insight. If there is one thing that can be taken away from this article it's this: "If you go to the trouble of being a member.... participate." The common consensus is that associations provide participating members:

- Exposure to the most current industry developments that directly affect your business,
- Opportunities for you and your company to be seen as an industry leader,
- Legislative input that influences rules and regulations that govern the industry,
- Opportunities to meet and associate with regulatory agency personnel,
- Professional certifications,
- Professional development through education, certification, participation and employment opportunities,
- Networking and relationship building,
- Personal Benefits: associations are a great place to make new friends, and you can't have too many friends.

Individuals place different value on each of these and the decision to become a member depends on what a person desires out of the organization and how much they are willing and able to contribute. Add in budget constraints and the time commitment and you quickly realize that it is difficult to belong to more than one or two associations, and carefully choosing which to belong to can reap benefits. By the way, did I mention how important it is to participate? An important part of deciding what organization to belong to should involve how much time you are willing to contribute.

For the technical professional, the ability to collect tangible technical advice, ideas, or processes to take back to the workplace is where belonging to an association really hits home, and, where most associations struggle. It is difficult for any organization to be everything to everyone and this is also why it is so important for a wide representation from the technical community to stay involved and share their expertise. The



Joe C. Holmes

Continued bk on pg 13

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Turner staff photo: Back row, left to right: Carl McClellan, Ron DiCenzo, Juan Hernandez, Patrick Leach, Kirti Patel. Front row: Terri Garcia, Justine McNeil, Nancy Turner and Shari Bauman.

Turner Labs Celebrates 22 Yrs

Loyal clients, vendors, and a
great staff were key to
recovering from adversity

by Nancy D. Turner

So, you think you know what's going on in your small company? Late in 2003 we discovered that our small company was the victim of fraud and embezzlement – something that had been going on for many years, not months or days. Two long term employees that had been with the company from the beginning were now gone. What was going to happen?

How did we carry on after learning that the losses were in the

millions? The people you see in our staff photo (above) are an incredible group of people. They pulled together to complete the large and small projects we were working on and helped with the smallest of details to keep laboratory functioning at full capacity.

Many loyal clients that were aware of the difficulty stuck with us and offered encouragement along the way. Then there were many loyal clients that never step foot in our facility and were not aware of the problems. Our staff continued to provide the high level of service that was expected and business continued as normal.

Our recovery would not have been complete without the assistance of



Photo: Justine McNeil, left, and Ron DiCenzo working in lab.



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our vendors. Those vendors include other laboratories across the country that we use as sub-contractors. Many were gracious enough to wait for payment while we sorted out our situation. Communication was the key and good old fashioned common courtesy helped us through this time.

We are proud of our accomplishments during this difficult time. We added new equipment, implemented new procedures, and kept operating while change happened daily. Life in a laboratory is always about change, but usually not so dramatic or unexpected. We would like to thank all who have helped us survive this tragedy and we look forward to serving Tucson and the Southern Arizona community for another twenty years.

Nancy D. Turner is President of Turner Laboratories, Inc. Nancy can be reached at 520-882-5880 and by email at turnerlabs@aol.com.



Above: Patrick Leach prepares samples.

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Romic Environmental Technologies Corporation is a hazardous waste recycling facility located within the Gila River Indian Community's Lone Butte Industrial Park south of Chandler. Romic took over recycling operations from Southwest Solvents in 1988. The site was contaminated when Romic acquired it. As a condition of occupying the site, Romic agreed to a consent order from the Environmental Protection Agency to clean up the site, and spent several years and hundreds of thousands of dollars to do so. The Environmental Protection Agency issued a letter to Romic in December of 1993 stating that Romic had completed the requested site clean-up. All areas of the facility where hazardous wastes are handled or stored were built with a liner underneath the concrete to prevent the possibility of chemical spills and leaks from seeping into the ground. All storage warehouses and tanks are within secondary containment, which prevents leaks and spills from entering the environment.

In August of 2005 Romic was fined by the Environmental Protection Agency Region IX for violations as a result of inspections conducted in 2001, 2002, and 2003. Romic has reached agreement with the Environmental Protection Agency (EPA) on 14 citations issued by the agency regarding Romic's operations at its facility near Chandler, Arizona. No citations allege any release of hazardous waste to the environment or the surrounding community, and no customers have incurred any increased liability. Romic paid a fine of \$67,888 for citations involving labeling, storage and recordkeeping issues. EPA Region IX has recognized that Romic corrected all violations, and Romic is focused on implementing changes in technology, record-keeping, and housekeeping to ensure both the government and the community are confident in the excellence of our operations. We look forward to an ongoing quality relationship with our neighbors at the Chandler facility.

Additionally, Romic had asked the EPA that it be allowed to do a Supplemental Environmental Program (SEP) with a portion of the fine funds. A SEP is a program that allows a regulated facility to provide upgrades to the facility that go above and beyond the scope of the regulations, or provide upgrades to community entities that interface with the facility. Romic requested that a portion of the fine be used for technical equipment to support community environmental and fire department programs. EPA Region IX granted this request. Romic has spent over \$100,000 on technical equipment for the Gila River Department of Environmental Quality and the Gila River Fire Department. The purchases include a trailer-mounted ambient air monitoring station, air particulate monitor, meteorological unit, data logger, thermal imaging camera, vehicle mounted weather station, and equipment for the HazMat response vehicle.

Romic-Southwest's core business is the recycling of industrial waste by-products, especially solvents. These include lacquer thinners, common cleaning solvents, antifreeze, and many other hazardous and non-hazardous industrial solvents. These recyclable waste materials are processed through distillation and are reclaimed and returned back into the generating industry or open market. By-products from the recycling of these materials, and other suitable incoming wastes, may be bulked and shipped off-site for use as alternative fuels in the manufacturing of cement.

For many years, Romic has taken great pride in the ability to offer its customers recycling options for their waste materials. Romic has also established a nationwide and international network of recyclers for various wastes that can be recycled offsite. Romic has a network of vendors for recycling acids, bases, waste waters, electronic waste, batteries, light tubes, and precious metals. Many other wastes, such as rags and debris that contain BTU value and can be shredded, can also be used as alternative fuels in the cement industry or in waste to energy programs. Certain industries can use these materials to burn in place of natural resources such as oil, diesel, and natural gas.

Romic also has a Field Service Department that provides offsite emergency response, remediation, demolition, decontamination and lab packing services to a wide range of customers.

As with all hazardous waste facilities, Romic Southwest is highly regulated. The Environmental Protection Agency Region IX has primary oversight for compliance at Romic Southwest, and they regularly conduct routine facility inspections. The Department of Transportation regulates Romic-Southwest's transportation fleet, and federal OSHA conducts safety inspections to ensure that Romic is complying with all rules and regulations under their jurisdictions. Locally, Romic Southwest is regulated and inspected by the Lone Butte Industrial Park, Gila River Department of Environmental Quality, and Gila River Fire Department.



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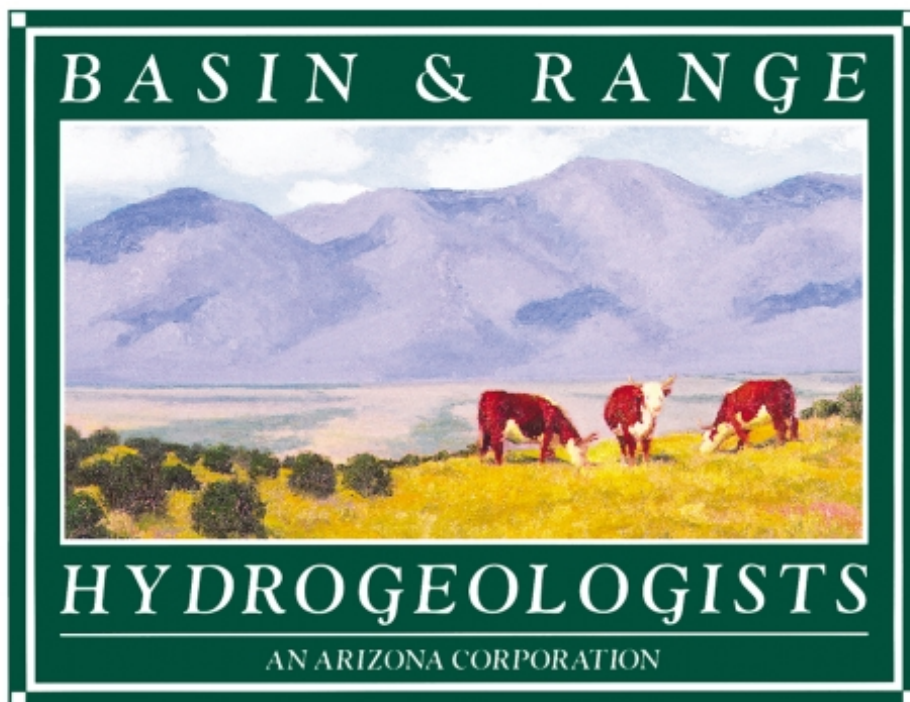
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