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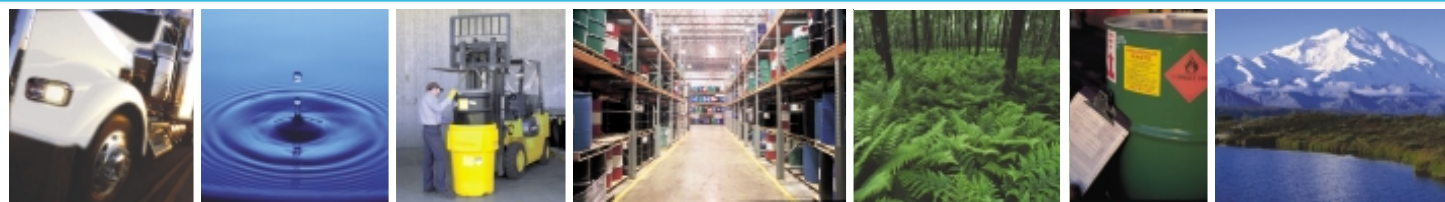
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Volume 4 Number 3

Contents

FEATURES AND ARTICLES

- 6** **McPHEE STAYS ABOVE THE COMPETITION**
 BY DARIN WEBB
- 8** **IS YOUR COMPANY TSCA COMPLIANT?**
 2006 BRINGS NEW INVENTORY RULE REQUIREMENTS
- 21** **FIRE EXTINGUISHER BASICS**
 STAY SAFE: CHUCK PAULAUSKY

COLUMNS

- 20** **IT'S ALL ABOUT CHEMISTRY**
 ETHANOL REVISITED
 LARRY OLSON, PHD.
- 15** **SUSTAINABLE DEVELOPMENT**
 KILLING PROGRESS TOWARD SUSTAINABILITY
 NICHOLAS R. HILD, PHD.
- 16** **REGULATORY DEVELOPMENTS**
 GLOBAL WARMING REALITY CK / DR. ROBERT BALLING
 MICHAEL C. FORD, ATTORNEY
- 26** **PROSPECTING: FOR ENV. BUSINESS**
 TRAINING RESOURCES FOR BUS. DEV. PERSONNEL
 JOE C. HOLMES, ENVIRONMENTAL DATA MGMT.

DEPARTMENTS

- 4** **FROM THE EDITOR**
- 22** **NEWS BRIEFS**
- 16** **ASSOCIATIONS PAGES**
- 25** **ADVERTISERS INDEX**
- 15** **CROSSWORD CHALLENGE**



Focus on *McPhee Inc.*
page 6



Are you TSCA compliant? page 8

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From the Editor



Fifty new graduates at Arizona colleges and universities have just received their degrees in various EH&S related fields. The Journal welcomes these graduates into the field and congratulates them on their accomplishment. See page 14 for a complete list of the graduates.

The Journal does not usually have an issue "theme" as many magazines do, but if we did, this issue the theme would be global environmental issues. First, courtesy of NASA and the website Visible Earth (<http://visibleearth.nasa.gov/>), we have a striking image of the planet Earth as our cover photo. According to Visible Earth, this "blue marble" image is "the most detailed true-color image of the entire Earth to date." It was based on a collection of satellite-based observations, and was stitched together "into a seamless, true-color mosaic of every square kilometer of our planet." Visible Earth offers these high-resolution images free to educators, scientists, museums, and the public.

Continuing on the global environmental theme, Attorney Michael C. Ford of Bryan Cave, LLP, presents a "global warming reality check" with Dr. Robert Balling, Professor of Climatology at ASU. If you have been wondering if the "global warming" sky is falling or not, read Mike Ford's "Regulatory Developments" column starting on page 12.

Finally, Dr. Larry Olson, PhD., Associate Professor at ASU, addresses the ethanol as a fuel question — does the making of ethanol use more fuel than it produces? See Dr. Olson's "It's All About Chemistry" on page 20.

Sincerely,

Jim Thrush, MS

Journal of Environmental Management Arizona

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Journal Welcomes New Staff

The Journal of Environmental Management Arizona welcomes two new staff members, Amanda DuBose and Darin Webb

Amanda DuBose was hired last month as the Journal's Office Manager. A native of Iowa, Amanda holds a BS in Hotel and Restaurant Management from Northern Arizona University. In addition to managing the office, she will also be working with circulation and advertising. You can contact her at 480-422-4430 x48 or Amanda@jem.phxcoxmail.com

Darin Webb is the new Managing Editor. He received his BA in English Literature from Arizona State University and currently teaches writing to kids in an after school program. He will help with articles, layout and design, data entry, and editing. You can contact him at 480-422-4430 x46 or Darin@jem.phxcoxmail.com.



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PHOTO: McPhee staff (left to right): Eric Kaupanger, P.E., Lisa Gantter, Jesse McFarland, Lisa Culbert, George Armstrong, Mike Boyd, NOT PICTURED: Sheri Stockhaus, Bill Armstrong, Ed Pflug, Chris Christoffers

McPhee Stays Above the Competition

And Still Has Time for Chicken Fajitas

by Darin Webb

Water treatment is a cutthroat industry. In order to stay afloat, you have to be ready to seize every opportunity. No one knows this better than McPhee Environmental Supply.

When the new Federal Maximum Containment Levels for arsenic found in public water systems



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

was lowered from 50 parts per billion to 10 parts per billion in January, McPhee saw this as a great opportunity for the implementation of technological

advances in the water treatment services field, as well as a great opportunity to get ahead.

"The lower regulatory level has helped McPhee launch a whole new product line," says Lisa Culbert, Vice President of Marketing for McPhee, a water treatment organization that also provides consumable products for spill prevention or cleanup.

This new product line is a new hybrid-iron adsorption media AsX^{np} / ArsenX^{np} for arsenic removal systems, and it's changing the way water is treated. A system using this technology does not require media backwashing or chemical

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additives, and it creates no waste residuals for the water system to handle. It can also be reused, a marked contrast to the single-use-throw-away granular iron medias.

The new product is not only doing good things for the environment, it's doing good things for McPhee. "The last



Above: McPhee staff at a recent environmental seminar.
Left to right, Chris Christoffers, Jesse McFarland, Mike Boyd

year has been a period of incredible growth for us," says Culbert, citing that McPhee has nearly doubled its employment since the new regulations, which went into effect in January. McPhee started in Cortez, Colorado back in 1983. It relocated to Phoenix ten years later. In addition to comprehensive water treatment services for water and waste water applications, McPhee also makes consumable environmental products for spill prevention and cleanup. They recently began providing engineering services for the permitting and design of water and waste water systems. And, as if that wasn't enough, they make drink cozies emblazoned with the phrase "Arsenic sucks."

A company suddenly growing at this magnitude in their twenty-sixth year is nearly unheard of, but McPhee makes it work. "We have found that as a smaller company with less overhead, we can provide our products and services for less, as well as dedicate the time required to provide excellent customer service," says Culbert. "We strive to exceed the expectations of our customers and are dedicated to the relationships that we build with them."

However, if they continue at their current rate, they might not be considered a 'smaller company' for too much longer.

But company president George Armstrong doesn't let the sudden growth affect his

strong principles. "George's philosophy is that his employees usually put their 40 plus hours in each week by Friday at noon," Culbert says. "If projects and schedules allow for it, we close the office each Friday at noon and wrap the week up with lunch together at George's favorite place, Chuy's."

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Is Your Company TSCA Compliant?

2006 brings new inventory
rule requirements. Will they
apply to your facility?

By Greg Fisher

For many of us, most of our regulatory compliance time is involved with air, waste, wastewater, and OSHA compliance. Another EPA program that may not have the same regulatory visibility, but has been

in existence since 1976, is the Toxic Substances Control Act (TSCA). TSCA gives EPA the authority to regulate the manufacture, use, distribution in commerce, and disposal of chemical substances. A major objective of TSCA is to characterize and evaluate the risks posed by a chemical to humans and the environment before the chemical is introduced into commerce. EPA has the authority to ban the manufacture or distribution of a chemical, limit the use, require labeling, or place other restrictions on chemicals that pose unreasonable risks.

Historically TSCA focused on chemical registration (the TSCA Inventory) and specific chemical families that were identified for potential carcinogenicity and detrimental environmental affects such as: Chromium, Lead, Polychlorinated Biphenyls (PCBs), Chlorofluorocarbons (CFCs), Dioxins/furans, and Asbestos.

TSCA's continuing and expanding role to protect human health and the environment from the thousands of chemicals that are manufactured and used is now focusing more on the toxicity effects of chemicals initially listed on the TSCA Inventory.

One way that TSCA updates the information on existing chemical substances is by the Inventory Update Rule (IUR), 40CFR Part 710. Every four years, U.S. industry must submit basic data on many of the over 76,000 chemicals listed on the TSCA Inventory. The IUR program is viewed as a tool for regularly updating EPA and subsequently the public with data on potential human and environmental exposure to chemical substances.

This article will review the IUR requirements and primarily focus on the new requirements. Before you assume that this regulation does not apply to your company, be sure to read through all of the changes that are being implemented this year.

Reporting Requirements during 1986 - 2002

The Inventory Update Rule was initially published as a final regulation under §8(a) of TSCA on June 12, 1986. Beginning in 1986 and every four years thereafter chemical manufactures and importers are required to report if they manufactured or imported 10,000 lbs or more of a reportable substance. A "reportable substance" is any chemical

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substance listed on the TSCA inventory as of August 25 of the reporting year. The IUR report, Form U, requires the following information:

- Chemical identity: name and CAS registration number
- Production Volume
- Plant site identity
- Whether the substance is manufactured or imported
- Site limited status (i.e. manufactured or processed only on site and not distributed commercially)

Additional Requirements to be Included in the 2006 Report

On January 7, 2003¹ and December 19, 2005² the EPA published significant Inventory Update Rule Amendments (IURA). These revised rules are applicable to the IUR reporting that is due with the 2006 submission.

Manufacture or Import $\geq 25,000$ lbs.
but $< 300,000$ lbs.

The threshold reporting limit has been increased from 10,000 lbs. to 25,000 lbs. of production. The data that is required to be reported is based upon the last calendar year completed. Chemical usage data from calendar year 2005 will be used for the 2006 IUR report. The 2006 IUR report must be submitted between August 25 and December 31, 2006.

Companies meeting or exceeding the 25,000 lb threshold will now have to report substantially more information than required in prior years.

In addition to the reporting requirements established during 1986 – 2006, submitters will be required to provide information regarding:

- The total number of workers likely to be exposed to the reportable chemical substance at each site

- The maximum concentration of each reportable chemical substance at the time it is sent off-site
- The physical form(s) of the reportable chemical substance as it is sent off-site
- The percentage of the total production volume of each reportable chemical that is associated with each physical form

All manufacturing information is required to be reported to the extent that it is “known to or reasonably ascertainable by”³ the submitter.

Manufacture or Import $\geq 300,000$ lbs.

This category of manufacture or import has information requirements that may be difficult to obtain due to activities

Continued on page 10

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TSCA: New Req's

Continued From Pg 9

pertaining to downstream users.

The following data is required in addition to all of the 25,000 threshold information described above. EPA is requiring this data to be reported in ranges (the specific criteria for ranges are found in the regulations).

- The type of industrial processing or use at each site including downstream user sites.
- North American Industrial Classification System (NAICS) codes for the identified industrial operations.
- Industrial function category designations that describe how the substance is used downstream.
- Estimated percentages of the submitter's production volume for each processing or use code and corresponding industrial function category.
- Approximate number of sites and estimated number of workers reasonably likely to be exposed to each chemical substance.
- Commercial and consumer product categories that describe the uses including whether the products are intended for use by children (up to age 14).
- Maximum concentration in each commercial and consumer product category.
- Estimated percentages of the submitter's production volume for each commercial or consumer product category.

Inorganic Substances

For the first time, inorganic chemical producers and importers must file a Form U. For the 2006 submission, inorganic substances will be exempt from having to report process and use information required for substances $\geq 300,000$ lbs. In subsequent IUR periods, inorganics will be subject to full reporting.

Exemptions

There are several categories of substances that remain exempt from the IUR: polymers, microorganisms, certain forms of natural gas, and naturally occurring chemical substances.

Exemptions are also allowed for R&D, importation in an article, and non-isolated intermediates.

However, there are no exemptions for substances if they are presently subject to a proposed or final rule under these sections of TSCA.

§4 Testing requirements mandated by EPA

§5(a)(2) Significant New Use Rules (SNURs)

§5(b)(4) EPA list of substances determined to present unreasonable risk of injury to health or the environment

§5(e), §5(f) TSCA Orders

§ 6 PCB's, Hexavalent Chromium, Asbestos, CFCs, Metalworking Fluids.

Partial Exemptions

The IUR now has new categories of "partial exempt" substances. These substances are still reportable but exempt from the exposure-based requirements that are triggered for quantities $\geq 300,000$ lbs. Reference the list of chemicals at §710.46(4)(b).

Small Business Exemption

TSCA provides Small Businesses with an exemption if they meet either of these criteria:

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Electronic Submittal

In 2006, industry will be able to submit the IUR Form U online through EPA's Central Data Exchange (CDX). CDX is an information exchange system previously developed and used for EPA electronic reporting. Industry will still be able to submit Form U either by hardcopy or on CD-ROM.

Confidential Business Information (CBI)

§710.38 provides guidance on submitting information and asserting a business confidentiality claim for the information.

Requirements for reporting years after the 2006 report:

The 2005 amendments changed the reporting interval and the due dates.

The reporting interval has shifted from four years to five years. The next reporting year will be 2011. The 2011 IUR report will pertain to calendar year 2010 activities.

The 2011 IUR report will be due between June 1 and September 30.

References:

1. 70 FR 75059ff December 19, 2005
2. 68 FR 848ff, January 7, 2003
3. 40 CFR §710.52, Introductory paragraph.

Greg Fisher, President of Aegis Environmental Strategies, Inc. is a Certified Hazardous Material Manager (CHMM) with over 20 years of experience in environmental and safety regulatory compliance. Greg provides consulting expertise in Toxic Substances Control Act (TSCA) compliance; Environmental regulatory permitting and reporting; compliance with OSHA's Safety standards, written programs, and training; and ISO14001 / EMS programs. He can be reached at 602-770-6961 or by email at gafisher@cox.net.

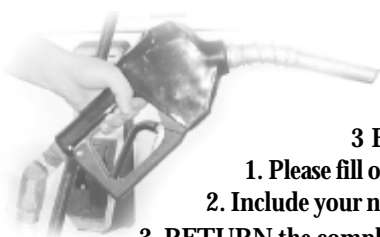


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**For information contact Dan Roe at 602-231-6345 or
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Michael C. Ford, Attorney

Regulatory Developments

Global Warming: A Reality Check With Dr. Robert Balling

With temperatures into the triple digits, hurricane season upon us, and the debut in theaters of yet another global warming thriller, I thought it would be a good time to check in with our own local climatology expert, Dr. Robert Balling for a “global warming reality check.” Dr. Balling is Professor of Climatology in the climatology program in the Department of Geography at Arizona State University. Over the past 20 years, Dr. Balling has been involved in a variety of interrelated climatological issues. He has published over 125 articles in the professional scientific literature, received over \$3,000,000 in research grants, presented lectures throughout the United States and more than a dozen foreign countries, and appeared in a number of scientific documentaries and news features. He has served as a climate consultant to the United Nations Environment Program, the World Climate Program, the World Meteorological Organization, the United Nations Educational, Scientific and Cultural Organization, and the Intergovernmental Panel on Climate Change. Dr. Balling’s first book on climate change is entitled *The Heated Debate: Greenhouse Predictions Versus Climate Reality*; his second book is entitled *Interactions of Desertification and Climate*, and his newest book is entitled *The Satanic Gases: Clearing the Air about Global Warming*.

FORD: *The stories that make it into the news seem to constantly assure of us of a “growing consensus” on the existence, cause and effect of and solution for “global warming,” but as an environmental*

professional, I tend to get skeptical when proponents cite an alleged consensus rather than the underlying science. Is all the data in and the debate really over?

BALLING: The public may believe some rift has divided the climate community regarding the greenhouse issue, but in reality there is far more common ground than disputed turf in the global warming debate. The climate of the Earth has always been in a state of change ranging from long periods when the planet was extensively covered by ice to warm periods with no ice caps whatsoever. The Earth’s climate is highly variable, can change rapidly, and we should not expect the climate of our day to persist over long periods of time.

The concentration of atmospheric carbon dioxide (CO₂) has increased, due largely to the use of fossil fuels to run cars and electric power plants. Other human activities release assorted gases (methane, nitrous oxide) into the atmosphere that also have the ability to trap heat energy that would otherwise escape into space, thereby warming up our planet.

Most climate scientists would agree that a continued buildup of greenhouse gases will lead to warming, assuming all else is held constant. But theoretical predictions are similar to of next weekend’s weather forecast – it’s the best guess we can make, but reality may look very different from the prediction.

While opinions vary on how to measure global warming, the inescapable fact emerges that the temperature record shows statistically significant warming in recent decades – and it is tempting to blame human activity for the upward trend. But have humans caused the observed warming or is it the result of the natural swings in the global climate system? One thousand years ago, temperatures were as high or higher than what we experience today. It is noteworthy that climate scientists chose the term “Climate Optimum” to describe that period. The good times ended and much of the Earth plunged into “The Little Ice Age” five hundred years ago, which thankfully ended in the late 19th century. This climate reality raises the question of whether the warming of the past century was part of the natural ebb and flow of the climate system or indeed was caused by human activity. On that topic, there is a great deal of ongoing debate, and nothing close to a “consensus.” Even those outside the climate community to do not agree on the conclusions we can reach from the existing evidence. To compare two recent examples, Al Gore’s *An Inconvenient Truth* concludes global warming is the greatest threat facing mankind. Michael Crichton, on the other hand, examines the same scientific evidence, and in his book *State of Fear*, concludes global warming is something of a hoax. So without even having to delve into the scientific literature and studies, you can see the enormous uncertainties surrounding the global warming issue.

FORD: *After last year’s hurricane season, global warming seems to be mentioned in every story covering an usual weather event. Is our weather now at the mercy of the global warming bogeyman?*

BALLING: Although popular visions of the greenhouse world inevitably include images of more severe storms and increased

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.

climate variability, the scientific community hardly agrees. No conclusive evidence exists to link extreme weather episodes to increased greenhouse gas concentrations. The world's leading scientists do not link tsunamis to climate change, they find no relationship between warming and recent hurricane activity, and they are reluctant to link extreme weather events to the greenhouse effect. Even the latest report from the United Nations Intergovernmental Panel on Climate Change (IPCC) confirms that "No systematic changes in the frequency of tornadoes, thunder days, or hail events are evident in the limited areas analyzed" and that "Changes globally in tropical and extra-tropical storm intensity and frequency are dominated by inter-decadal and multi-decadal variations, with no significant trends evident over the 20th century." But I have no doubt that with news stories on weather events, we will continue to see "global warming" mentioned and implicated as the culprit.

FORD: *Hollywood has jumped on to the global warming bandwagon with everything from special effects disaster epics to animated children's films pushing the alarmist message, and now comes the product of Al Gore's latest hobby. What are your thoughts on the film and would you characterize it as a documentary, action/adventure, horror, or date movie?*

BALLING: "An Inconvenient Truth" is billed as the scariest movie you'll ever see. Thanks to Hollywood, we sweltered through "Waterworld" in 1995 only to freeze to death in "The Day after Tomorrow" in 2004. Gore pours through the evidence and concludes global warming is the greatest threat facing humanity. However, the film ignores more inconvenient truths that it exposes.

For example, many of Gore's conclusions are based on the infamous "Hockey Stick" graph that shows near constant global temperatures for 1,000 years with a sharp increase in temperature from 1900 onward.

The record Gore chooses in the film completely ignores the Medieval Warm Period of 1,000 years ago and Little Ice Age that started 500 years ago and ended just over 100 years ago. Despite evidence from throughout the world (dare I say a consensus?) that these climate episodes existed, Gore's Hockey Stick reduces these inconvenient eras to nothing more than insignificant fluctuations.

Gore also claims that sea level rise could drown the Pacific islands, Florida, major cities the world over, and the 9/11 Memorial in New York City. No mention is made of the fact that sea level has been rising at a rate of 1.8 mm per year for the past 8,000 years. Even the IPCC notes that "No significant acceleration in the rate of sea level rise during the 20th century has been detected."

Gore discusses glacial and snowpack retreats atop Kenya's Mt. Kilimanjaro, implying that human induced global warming is to blame. But Gore fails to mention that the snows of Kilimanjaro have been retreating for more than 100 years, largely due to declining atmospheric moisture, not global warming. Gore does not acknowledge the two major articles on the subject published in 2004 in the *International Journal of Climatology* and the *Journal of Geophysical Research* showing that modern

glacier retreat on Kilimanjaro was initiated by a reduction in precipitation at the end of the nineteenth century and not by local or global warming.

There are more, but you get the picture. So the film is certainly not the most accurate depiction of the state of global warming science. But if you are a fan of science fiction, by all means, see this film.

FORD: *If the U.S. would just get in line and sign onto the Kyoto protocol, would everything be OK?*

BALLING: The Kyoto Protocol is aimed at stabilizing emissions of greenhouse gases, not their concentrations in the atmosphere. Even if Kyoto could stabilize CO₂ emissions today (and Kyoto seeks to stabilize emissions to 1990 levels), we still would pump billions of tons of these gases into the atmosphere each year, and we would still achieve a doubling of concentrations somewhere near the middle of this century. The Kyoto Protocol would have little impact on greenhouse gas concentrations, and the climate impact would be trivial and absolutely undetectable for many decades to come. Kyoto suffers from an infinitely indefensible cost/benefit ratio associated with its high economic costs and zero climate impacts.

Keep in mind the Kyoto Protocol was negotiated in December of 1997 giving the Clinton – Gore administration more than three years to present the Protocol to the United States Senate for ratification. Given Gore's position in the senate and his knowledge and passion for global warming, one must wonder why then Vice President Gore did not seize on what appears to have been an opportunity of a lifetime?

FORD: *It seems all we ever hear about are the negatives of global warming, but you mentioned scientists have labeled a warmer era as "climate optimum." This begs the question - aren't there any positives that balance out the global warming effect equation?*

BALLING: Thousands of experiments conducted worldwide continue to confirm the benefits associated with elevated levels of atmospheric CO₂. It causes plants to grow faster and bigger, produce more fruit and usable biomass, become more efficient in their use of water and nutrients, and increases resistance to drought and other stresses. Virtually every plant in the global biosphere is already reaping the benefits that come from higher concentrations of CO₂. There are potentially positive implications for global food supply and hunger issues, water conservation, and species habitat and diversity, to name a few, but these do not get much play in the press, and do not make for great movie plots.

FORD: *Any predictions for what the future of the global warming debate will hold?*

BALLING: Scientists and policy makers will continue to vigorously debate the greenhouse issue, but we should keep an eye on the common ground. The debate makes great TV, but doesn't reflect the enormous knowledge base that is not in dispute. As Mark Twain once said, "Get your facts first, and then you can distort them as much as you please!"



Hazard Prevention Institute (HPI)
Safety, Environmental & Emergency Management Solutions

Training & Consulting Services

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President

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Website: www.hazardprevention.com

HOLMES: BUS DEV TRAINING

This article begins on page 26

that is pretty good. I would not consider these substitutes for a comprehensive training program, but they are good resources for fresh ideas and current information.

- www.marketingsherpa.com Very marketing oriented and full of papers and articles about marketing tactics and strategies for a variety of industries. The site has unique stuff like a sales & marketing comic that is emailed to you every month.
- www.raintoday.com Very professional site directed at higher level sales & marketing professionals. Comprehensive set of resources with a good variety of support for selling products and services.
- www.hillsgroup.com Focused on selling professional services without primarily focusing on their own consulting services. Obviously their goal is to engage their services, but they offer some interesting articles.
- www.guerrillaconsulting.com The Guerrilla books are pretty popular and the site offers them as well as other books for sale. The site has good papers and articles associated with marketing consulting services.
- www.sellingtobigcompanies.com This is my favorite by a long shot, not just for the resources, but for the commentary provided by Jill Konrath. Her philosophy about the modern sales person, the sales profession and our role in the evolving business world is refreshing and very insightful. She conducts phone seminars that we have found very helpful and the printed materials are great.

Thank you for reading 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.

N. Weiss Associates, Inc.

Environmental Compliance Services

Experience Counts

Contact: Norm Weiss @ (602) 870-5504

Web Site: www.nweissassoc.com

Congratulations New

EHS Graduates

The Journal would like to extend its congratulations to this year's college graduates in Environmental, Health, and Safety related fields. We welcome them and wish them luck in their new line of work. Thank you to ASU, U of A, NAU, and Gateway College for the following list of graduates. *This list is not exhaustive.*

Northern Arizona University

Brian Blacketer, BSE Environmental Engineering
John Lawrence, BSE Environmental Engineering
Mark Abrahams, BSE Environmental Engineering
Michael Brown, BSE Environmental Engineering
Noah Schadel, BSE Environmental Engineering
Benjamin Ciampa, BS Environmental Sciences – Applied Geology
Matthew Germansen, BS Environmental Sciences – Applied Geology
James Androwski, BS Environmental Sciences – Applied Geology
Jessica Popp, BS Environmental Sciences – Communication
Ashley Mott, BS Environmental Sciences – Management
Lauren Meding, BS Environmental Sciences – Management
Amy Fuller, MS Environmental Sciences & Policy
Dmytro Vysotsky, MS Environmental Sciences & Policy
Kirsten Larsen, MS Environmental Sciences & Policy
Shawn Newell, MS Environmental Sciences & Policy
Tina Salata, MS Environmental Sciences & Policy

Arizona State University

Mario Lattanzio, MS Environmental Tech. Management
Eric Madsen, BS Environmental Tech. Management
Brandt Vogel, BS Environmental Tech. Management
Paul Runyan, BS Environmental Tech. Management
Matthew Kucharski, BS Civil/Environmental Engineering
Patricia Quintana, BS Civil/Environmental Engineering
Damien Tonnelle, BS Civil/Environmental Engineering
Miles Costanza, BS Civil/Environmental Engineering
Troy Benn, MS Civil/Environmental Engineering
Nirav Hingoo, MS Civil/Environmental Engineering
Timothy White, MS Civil/Environmental Engineering
Carolina Baertsch, MS Civil/Environmental Engineering
Brooke Mayer, MS Civil/Environmental Engineering
Pramod Tipparaju, MS Civil/Environmental Engineering
Nikole Fales, MS Civil/Environmental Engineering
Hynjoo Rah, MS Civil/Environmental Engineering

University of Arizona

Mark Arneson, BES Environmental Sciences
Todd Gaston, BES Environmental Sciences
Lynsey Gould, BES Environmental Sciences
Victoria Kuzmina, BES Environmental Sciences
Christopher Morrison, BES Environmental Sciences
Travis Nauman, BES Environmental Sciences
Terence Paige, BES Environmental Sciences
Chester Phillips, BES Environmental Sciences
Briana Rogers, BES Environmental Sciences
Anthony Salvucci, BES Environmental Sciences
Francis Steward, BES Environmental Sciences
Zahra Tashvighikhoob, BES Environmental Sciences
Ryan Van de Merwe, BES Environmental Sciences

Gateway Community College

Timothy Olson, AA Applied Science – Hydraulic Studies
Mark Pederson, AA Applied Science – Hydraulic Studies
Todd Davis, AA Applied Science – Occ. Safety and Health Tech.
Bennie Padilla, III, AA Applied Science – Occ. Safety and Health Tech.
Lisa Hawkins, AA Applied Science – Water Technologies

Crossword Challenge:

Theme: Environmental Key Words

For fun this issue, we thought we would try something different. Please let us know how you like this new feature. Do you want to see more EH&S related puzzles? Was this too easy? Too hard? Contact Amanda DuBose at 480-422-4430 x48, or Jim Thrush at x42.

Across

1. Banned in the US in 1972 because of its persistence in the environment and accumulation in the food chain.
3. The "I" in EIS.
5. An excellent fertilizer, an ocean weed.
7. Home to bees.
9. Vertical structural element.
12. An alternative automotive fuel, derived from grain and corn, usually blended with gasoline.
14. Word represented by "L" in LD50.
15. This container gets its name because of its location in the ground.
18. Unit of measurement.
23. This structure impedes flow of water.
24. Provision of the CWA which prohibits discharge of pollutants into waters of the United States without a permit.
27. A tough, environmentally indestructible plastic that releases hydrochloric acid when burned.
28. Have the same atomic number of protons but different number of neutrons.
29. Synthetic washing agent used to remove dirt and oil, can contribute to algae growth in bodies of water.
30. Area of water extending into land from lake or sea.
32. Quantity of heat.
33. Shallow pond.
36. A one-page form used by haulers transporting waste.
38. Submerged offshore ridge or mound of sand or gravel.
39. Capable of burning/causing a fire.
42. A measure of radioactivity.
44. Refers to a thin area of ozone.
46. Gas given off by solids or liquids at ordinary pressure and temperature.
47. Federal agency responsible for developing rec. health and safety standards.
49. A site used to dispose of solid waste without environmental controls.
51. Rootless plants growing in sunlit waters.
52. Thermal spring that ejects with force.
54. Radioactive, inert gas formed by decay of radium atoms in soil or rocks.
56. Refers to mud and/or sand deposited by flowing waters.
57. Under environmental law _____ liability for a violation means you are automatically guilty and liable, intent does not matter.
61. Evaporates easily.
64. Small tank or storage facility used to store water for a home or farm.
66. A test for a particular chemical or effect.
67. Arizona's Superfund

68. Describes alkaline water containing dissolved salts.

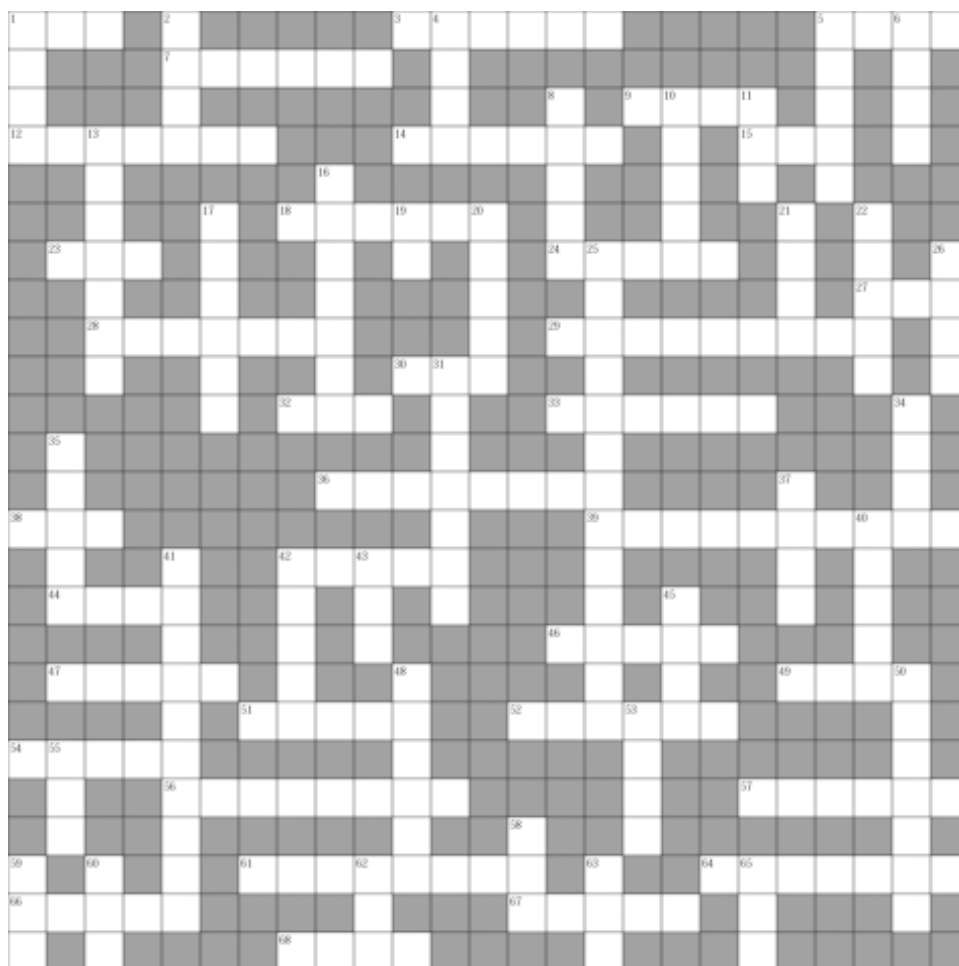
Down

1. A low wall than acts as a barrier to prevent a spill from spreading.
2. Form of H₂O, can affect vac. plans.
4. Unit of measurement in chemistry
5. City where 160 nations agreed to reduce greenhouse gas emissions.
6. Good soil
8. Submarine depression.
10. This brief type of exposure to a toxic substance may result in severe biological harm or death.
11. Unit of light measurement.
13. Pertains to liver.
16. Liquid or solid material used to dilute or carry an active ingredient.
17. The underside or belly.
19. Amount of haz. waste released from a facility into the environment that must be reported immediately.
20. Refers to people's tendency to avoid allowing hazardous sites to be located near by.
21. Ether compound used to raise oxygen content of gasoline.
22. Describes a drum after contents removed using common practices, and certain requirements met.
25. This principle states that when information about potential risk is incomplete, decisions should be made with a preference for avoiding unnecessary health risks rather than avoiding economic expenditures.
26. Corrosive solution/pH less than 7.
31. An underground geological formation containing water.
34. Beak.
35. The _____ point is the lowest temperature at which evaporation of a substance produces sufficient vapor to form an ignitable mixture with air.
37. Fine or intermediate sized mineral particles.
40. A proliferation of algae or aquatic

plants in a body of water, often related to pollutants that accelerate growth.

41. Word represented by "R" in RACT.
42. Man-made watercourse.
43. Reference Dose
45. Heart of a nuclear reactor.
48. Draw off the upper layer of liquid after the heaviest material has settled.
50. Warning sign.
53. Particles between .05 and 2.0 MM in diameter.
55. The mineral content of a product remaining after complete combustion.
58. Form of H₂O found on plantlife at lower temperatures.
59. Untreated sewage.
60. This type of facility requires a permit under the hazardous waste programs.
62. O₂ 21%, N₂ 78%.
63. A layer of clay or other impermeable material installed over the top of a closed landfill to prevent entry of rainwater and minimize leachate.
65. Electrically charged atom.

Answers: Find KEY to puzzle at www.ehshomepage.com. Link is at bottom of the homepage.



Associations Pages

Valley Forward



Valley Residents Claim Urban Sprawl is a Problem Yet Most Won't Live in More Compact Communities.

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

The majority of Valley residents, 85 percent, believe that sprawl is a problem in Maricopa County, with 41 percent indicating it is a "big" problem, 31 percent deeming it a "moderate" problem and 13 percent saying it's a "small" problem, according to a recent Valley Forward telephone survey of more than 400 residents conducted by WestGroup Research.

At the same time, more than three-fourths of the respondents, also indicated they would oppose high-density development, such as smaller lot sizes, apartments or condos, in their own neighborhood.

In addition, only one in five Valley residents, 19 percent, believe local communities have plans in place to effectively handle the continued rapid growth projected for Maricopa County. Conversely, residents do not feel that they have the ability to influence planning decisions in their community, with 67 percent saying they have no voice.

On a more positive note, the majority of Valley residents, three in five, indicated their quality of life had either been positively impacted by the county's rapid growth or said growth has not affected them at all.

The research suggests that while most Valley residents feel growth and land use patterns negatively impact the livability and sustainability of our region, residents are still positive about their own personal lifestyles. It's clear we need to do a better job of educating the public about the planning process and how they can get involved. Apparently, most people do not feel empowered to make a difference, and we're here to say they most definitely can.

A 37-year-old environmental public interest organization, Valley Forward advocates for a balance between economic growth and environmental quality. For more information about the organization or its survey, call (602) 240-2408 or visit www.valleyforward.org.

Diane Brossart,
President



American Society of Safety Engineers

Southern AZ Chapter

For information on
Meetings and Training:
visit <http://southaz.asse.org>
or call Edward Collette
at 520-740-2656 or
edward.collette@www.pima.gov

The chapter will hold its Annual Awards Banquet on May 19th at the Pima Air and Space Museum. We will be honoring Bruce McDermaid as the 2006 Safety Professional of the Year and the State Comp Fund of Arizona will receive the 2006 Community Safety leadership Award.

The new officers will take the reins on June 1st.

They are Chuck Gessner – President, Thomas Wilson – Vice President, Gerry Coley – Treasurer, Shari Di Peso – Secretary, Mark Grushka – Delegate to HOD, Brandy Kadous – Member at Large, and David Baker – Past President.

Our 2006-2007 Year will start with the joint Southern Arizona Safety Council Meeting at 8:30 a.m. on August 15th at Granite Construction, 4115 E Irvington Road. The main speaker will be Lt. Col. Doug "Odie" Slocum of the Arizona Air National Guard. Lt. Col. Slocum has developed a program that is being adopted by the US Air Force. The program looks at human factors in regard to the safety side of error reduction, while doing more (and better) with less. The goals are increased efficiency and improved safety. The seminars have been described by folks as "the best training they've ever received in the military."

Ed Collette,
Secretary



AZ Chapter Semiconductor Environmental Safety & health Association

Contact Information:

www.seshaonline.org

Several Arizona members recently attended the SSHA 28th Annual International High Technology ESH Symposium and Exposition in Santa Clara, CA. Emerging EHS topics affecting the semiconductor industry were presented by national speakers in the field. This was a great opportunity for professional development and networking among peers in the EHS profession. Do not miss next year's annual symposium in Las Vegas, NV.

Participation in SSHA Arizona chapter activities can assist you in staying up-to-date on new regulatory compliance issues and important process safety information, and can provide insight into possible solutions to many of the environmental, health and safety challenges present in the high technology industries. Information and membership application can be obtained at www.seshaonline.org.

The local Arizona chapter holds quarterly meetings with local EHS professionals presenting. A meeting was held in June with an Overview of ASU EHS Programs, HAP Rule Changes and Avian Flu Pandemic Planning at ASU. As always, the local meetings offer timely information and the opportunity to network.

John Bucciarelli,
President





Michelle R. Freeark,
President

Another fiscal year has come to an end. The new fiscal year starts on June 1, 2006, which will bring a new Executive Board to guide the organization for the next year. Currently, elections are under way in preparation for the installation of the new Board at the Annual Meeting, June 28, 2006. The candidates for this year's elections are Shari Bauman (Vice President), Sarah Sillman (Secretary), Norma Lopez (Communications Coordinator), and Jeff Christensen (President-Elect). Bob Estes will assume the position of President for 2006-2007. Korky Vault remains the Treasurer as the position is for a two-year term, which she assumed in 2005.

On May 11, 2006 SAEMS held its 16th annual RCRA training seminar. This year's event included over 200 paid attendees at the Tucson Convention Center and was a very successful event. SAEMS would like to thank the attendees and most importantly the sponsors of the seminar who helped make it so successful. Profits from the RCRA seminar benefit environmental education.

The June 28 luncheon meeting will also recognize SAEMS dedicated members who made the past year one to remember! Please make plans to attend!

SAEMS



VISIT OUR WEBSITE AT
WWW.SAEMS.ORG

SAEMS MONTHLY LUNCHEON
MEETINGS HELD ON THE LAST
WEDNESDAY OF THE MONTH
STARTING AT 11:30 A.M. AT:

THE MANNING HOUSE
450 W. PASEO REDONDO (N. OF
CONGRESS ON GRANDA) TUC., AZ

LUNCHEON TOPICS:

JUNE 28: Dick Lukso, Secura plant; Alternative to PCE for the Dry Cleaning business

JULY 26: Dave Burns, Burns, Wal d-Hopkins; LEEDs Design Strategies

AUGUST 30: To Be Announced



Peter Kroopnick,
President

AHS members are busy preparing for the 2006 AHS Annual Symposium to be held this September 13-16 at the Glendale Civic Center. This year's focus is "Water & Water Science in the Southwest — Past, Present, & Future." In addition to 2 days of technical sessions and posters, there are several workshops scheduled for the day before the conference and field

trips planned for the day after. Visit our website at www.azhydrosoc.org for a complete topic listing, symposium details and updates, and sponsorship opportunities.

Monthly chapter meetings are generally held the second Tuesday of the month. June's meetings feature "Rainwater Harvesting, Low Impact Development Strategies, and Meeting the NPDES Stormwater Discharge Standards" presented by Heather Kinkade-Levario, Arcadis G&M, in Phoenix, and a "Mini-Symposium on Wells" presented in Tucson by Gary Burchard, Metro Water; Jeff Tannler, ADWR; and Gary Woodard, Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA). Please visit our website for details.

Arizona Hydrological Society



please visit the AHS web
site: [http://
www.azhydrosoc.org](http://www.azhydrosoc.org)



Chuck Paulausky,
President

ACHMM 2006 NATIONAL CONFERENCE- Open to all EHS Professionals

Every year, the Academy of Certified Hazardous Materials Managers hosts a National Conference for environmental, health and safety professionals. The 2006 National Conference is being held on September 17-20, 2006 at the Omni Orlando

Resort at ChampionsGate, in Orlando, Florida.

This year's Conference, "*The Wonderful World of Hazardous Materials Management-Expect the Unexpected*," includes several days of sessions on a wide variety of topics, and special events, plus networking/professional development opportunities. The conference is open to anyone wishing to attend. If you are a CHMM, CSP, or CIH, you can earn certification/maintenance points by attending the Conference.

For more information about the Conference, go to: <http://www.kuce.org/achmm/>

The ACHMM/EPAZ monthly lunch meetings will be at the Radisson Hotel, 427 N. 44th Street in Phoenix, from 11:30 ~ 1:00 on the second Thursdays of each month. Meeting details: www.thunderbirdchmm.org or www.epaz.org.

ACHMM Thunderbird



Calendar Items

June 8, 2006 Luncheon
meeting: TBA

July 13, 2006 Luncheon
meeting: TBA

August 2006, 2006 No
Meeting - Summer Break

September 14, 2006
Luncheon Meeting: TBA

Arizona Environmental Strategic Alliance



The alliance:
WWW.AZALLIANCE.ORG

arizona resource exchange:
WWW.AZREX.ORG

The Arizona Environmental Strategic Alliance (Alliance) is proud to announce that the first two Arizona companies and City to join the Arizona Performance Track program are all members of the Alliance. The three inaugural members of Arizona Performance Track are:

Intel Arizona's Ocotillo Campus in Chandler, which manufactures semiconductors, aims to reduce non-hazardous solid waste generated by 21 percent, or 1,500 tons annually, and save 70 million gallons of water. The company also reduced use of volatile organic chemicals (VOCs) and committed to reduce VOC use further.

PING, Inc., in Phoenix, which designs, manufactures and services golf clubs and other golfing equipment, has already reduced water usage by 3 million gallons per year and hazardous waste generation by almost 40,000 pounds per year. They've also committed to reducing air particulate emissions by 16% and to further reducing materials use and non-hazardous waste generation.

City of Scottsdale is being recognized for committing to add 1,200 acres of land and habitat to the McDowell-Sonoran Preserve, an increase of more than 10 percent to the 11,000 acres the city has previously purchased or preserved, and for reducing non-transportation energy use by installing more efficient heating, ventilation and air conditioning equipment.

The city has pledged to use biodiesel in the city's fleet of diesel vehicles, which will help reduce particulate matter air pollution; to replenish the underground aquifer with treated effluent; and to construct future buildings to conform to the energy-efficient Leadership in Energy and Env. Design (LEED) standard.

The AZ Performance track is a voluntary partnership between ADEQ, businesses and other regulated entities that recognizes and rewards environmental leadership for going above and beyond the minimum requirements of the law. If your company is interested in being part of the AESA, contact Jim Thrush, President, at 480-422-7392 or Rob Barnett, Chairperson, at 602-687-5255.

Rob Barnett,
Chairman



AAI

AAI's Webpage:

www.azind.org

AAI's 15th Annual Environmental Summit and Golf Classic will be held on August 9th through the 11th at the Hilton El Conquistador in Tucson. Topics will include industrial accidents in Arizona, European environmental initiatives, waste issues in Arizona, industrial incident response and many others. Presenters come from industry, regulatory agencies and other experts. A reception will be held the evening of Wednesday, August 9th, a full-day seminar on Friday August 10th and a golf tournament on Friday August 11th.

For more information for both events go to AAI's web page at www.azind.org or contact Kathy Hackett at 602-252-9415. (Please also see the Summit advertisement on page 25).

Jeff Homer,
EHS Committee
Chairman



EPAZ



Our May meeting featured Evelyn Dawson, Senior Chemist, Innovative Technical Solutions, Inc (ITSI). Evelyn did an excellent presentation titled "Overview of Analytical Methods and Data Review." She reviewed Analytical Methodology, QAPP's, and Data Review.

Our June 8th speaker featured Rolf von Oppenfeld P.C., Attorney, Team for Environmental Science and Technology Law (TESTLaw). Mr. von Oppenfeld covered some changes concerning development of local limits in pretreatment permits, and the new pretreatment streamlining rule which has been finalized and the RCRA Clean Water Act interface, and the proper handling of hazardous wastewaters prior to any sanitary sewer discharge.

Our Second Annual Golf Tournament was held on June 10th at the Foothills Golf Course, the proceeds benefited our scholarship fund. Thanks to all who participated and if you missed it be on the look out for next year's tournament. A special thanks to Ping Golf and Allied Waste for being our Premier Sponsors.

EPAZ holds monthly luncheon meetings on the 2nd Thursday of the month from 11:30 am to 1:00 pm. Cost is \$20 members/\$30 non-members. EPAZ also gathers on the last Wednesday of the month for a casual cocktail mixer. Visit our web site at <http://www.epaz.org> for more details regarding upcoming meetings and our monthly mixer location or contact Eddie Martinez at (602) 708-9179.

Eddie Martinez,
President





Sustainability and Sustainable Development

Nicholas R. Hild, PhD.

"THE DEATH OF ENVIRONMENTALISM" IS ALSO KILLING PROGRESS TOWARD SUSTAINABILITY—

—“Gonzo” Journalism, and Other
Disconnected ‘things’ . . .

A number of ‘things’ got me thinking recently about what stands in the way of our ability to inculcate “sustainability” in the minds of middle Americans. To be sure, there are ‘institutional’ barriers like HOA rules and zoning restrictions that won’t allow gray water use at your property, or solar collectors to be visible from the street, or minimum square footage requirements for cookie-cutter ‘custom’ homes that devour copious amounts of energy. But, what are the real impediments, the ones we might not be aware are in place and operating against us, keeping us from spreading the gospel of sustainable development and becoming more sustainable?

The first of those seemingly unconnected ‘things’ included another reading of Grist Magazine’s (2004) paper, *“The Death of Environmentalism”* by Breakthrough Institute’s Michael Shellenberger and Ted Nordhaus, who is an opinion research expert. It’s one of the best summaries in recent times that makes critical observations about why the environmentalist community seems to have lost their power to get things done at the congressional level (and, no, it’s not just because the Bush administration has a death-wish for all environmentalists).

It is a great paper and very eye-opening for those of us who’ve generally not had a lot of time or love for “environmentalists” in the last 35 years they’ve been influencing government policy. But, in the mish-mash of ‘things’ that seem

disconnected, I also read an obituary piece on the late Bill Cardoso, a reporter for several liberal newspapers from the late ‘60’s through the ‘90’s, who was there during the birthing years of radical ‘60’s environmentalism. It was Cardoso who coined the term “gonzo journalism” to describe Hunter S. Thompson’s first wildly successful, 1970 publication, *The Kentucky Derby Is Decadent and Depraved*. Cardoso’s labeling and praise encouraged Thompson to write, and magnanimously title, his next book, *Fear And Loathing In Las Vegas*, in 1972, showing once again as Jack Kerouac and the other ‘beat generation writers’ before him, that it was evidently a whole lot easier to write meaningful works of literary significance while being totally stoned. The critics, at least, tended to take such writing more seriously and ‘gonzo’ became popular in both extreme literature as well as the dialog style of the more radical fringe elements in the environmental movement at the time.

Connecting the dots to those mish-mashed, seemingly disconnected ‘things’ tells me that, it probably is NOT a good thing that the environmentalists are losing their influence because, as the paper by Shellenberger and Nordhaus asserts,

“...Lessons learned from Europe are the wrong lessons... whereby (environmentalists) closely scrutinize policies without giving much thought to the politics that made the policies possible... (and) we will never be able to turn things around as long as we understand our failures as essentially tactical, and (continue) making proposals that are essentially technical.”

If memory serves, it was the environmentalists’ ‘gonzo style’ (journalism *and* rhetoric) that got them their place at the table back in the ‘60’s. Now, running on empty, yet still on the shoulders of their radical forefathers who successfully gained access to the political machines of the ‘70’s and early ‘80’s with their ‘gonzo’ tactics that worked so well back then, these new millennial environmentalists would do well to unite in a common cause.

So, here is the key for today’s environmentalists: it only means moving back just a little toward the middle (i.e. their Strategic Values Project already shows that there has been a clear conservative shift in America’s values since 1992 so one step back and two steps forward is still progress, right?). So go ahead and embrace sustainability and sustainable development as *THE* common tactic to reignite your efforts. Shellenberger and Nordhaus never used those terms in their paper, but sustainability/sustainable development really *IS* the common cause the environmental community is searching for to once again become a force to be reckoned with in the game of environmental politics.

We can only hope that left and right alike will go ‘gonzo’ once more, uniting and embracing sustainability. . . for the future of 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.

It's All About Chemistry

Ethanol Revisited

Larry Olson, PhD.



A recent article in *Environmental Science and Technology* was entitled “How Green is Ethanol?” (*ES&T*, **40**, p. 1722, 2006). It highlights the vigorous debate over whether to make a major move towards ethanol based fuels which involves questions such as the Net Energy Value, of ethanol (whether more energy is produced than is consumed in making ethanol), ethanol’s impact on CO₂ emissions and on air quality, and infrastructure issues involving transport of both biomass and liquid fuel. But some answers are beginning to become clearer.

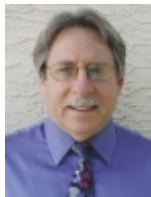
Farrell, et al (*Science*, **311**, p. 506, 2006) and Hammerschlag (*ES&T*, **40**, p. 1744, 2006) have both looked at the Net Energy Value, NEV, (or what Hammerschlag calls return on investment r_e) of manufacturing ethanol. Both found that producing one MJ of energy from ethanol required far less non-renewable energy than producing one MJ of energy from gasoline. The return on investment r_e is defined as the total product energy divided by non-renewable energy input in its manufacture. Gasoline has a r_e of 0.76. Hammerschlag found that for corn ethanol $0.84 \leq r_e \leq 1.65$ and for cellulosic ethanol it is $4.40 \leq r_e \leq 6.61$. Thus, even corn ethanol, with its high agricultural inputs such as fertilizer, produces more energy than is consumed. But the real breakthrough comes when non-starch feedstocks, such as switchgrass, are used. This is because in cellulosic ethanol the entire plant is used. Cellulose and hemicellulose are fermented to ethanol and even lignin can be burned to provide energy for the manufacturing process. The problem is that no commercial facilities for cellulosic ethanol currently exist, though pilot plants are in the works.

It will be critical to develop cellulosic ethanol, because there are limits to the use of corn ethanol. As Morrow, et al (*ES&T*, **40**, p. 2877, 2006) point out, the current U.S. production capacity is 17 billion L of ethanol, which consumes about 11% of the U.S. corn crop. To fuel the entire Light Duty Vehicle (LDV) fleet with E10 (10% ethanol, 90% gasoline) would require 49 billion L of ethanol. This would likely create market saturation for some of the co-products of corn ethanol, which changes the economics of corn ethanol. It would also require a huge expansion of the 4.5 million hectares of land that are currently planted in corn.

Use of other crops for cellulosic ethanol expands the geographic range in which biomass can be grown and permits more widely dispersed ethanol plants. It is important to reduce the distance biomass must be transported to a manufacturing facility, as well as the distance that liquid ethanol must be moved to consumers. Although 6.4 billion L of petroleum products are moved each day in the U.S, two thirds moves by pipeline. Only 4% of petroleum moves by truck and 2% by rail, but since there are no pipelines for shipping ethanol or ethanol blends of gasoline, most will need to be moved by truck. Current pipelines can’t be used for ethanol products because of water in petroleum lines. Thus, before a substantial new pipeline infrastructure can be constructed, minimizing transportation costs could be crucial to ethanol’s competitiveness.

So is there a place for ethanol in the nation’s energy supply? Like coal, nuclear, or petroleum based energy, ethanol is not a perfect solution. There are major hurdles to overcome. But we don’t need armies and aircraft carriers to guard our ethanol supplies. I suspect that the tipping point for ethanol use will continue to become more favorable in future decades.

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



Stay Safe

Fire Extinguisher Basics

Chuck Paulausky



A city councilman, during a debate on safety requirements for the city, once made a motion: "I move, Mr. Chairman, that all fire extinguishers be examined a minimum of ten days before every fire." This sounds like a great idea if you can schedule your fires, but obviously, it isn't too practical. However, the point is important! Fires can cause huge losses to a company and there are steps you can take to prevent these losses.

An effective fire safety plan can help prevent them, but occasions can arise where your employees may need to know about proper use of fire extinguishers.

TYPES- Fire extinguishers are classified by the type of materials that is burning:

A for fires involving combustible materials like paper or wood. The numerical rating on these indicates the amount of water it contains. A larger number for a larger fire.

B for flammable liquids, gases, and gasoline. The numerical rating indicates the approximate size of fire in square feet that the extinguisher can put out.

C for electrical fires involving wiring and equipment. These don't have a numerical rating. The contents are non-conductive. Never spray water on an electrical fire.

ABC for fires involving combinations of materials. These are the most common type of extinguisher, but contain a material that could damage electrical equipment.

D for combustible metals like sodium, magnesium, & lithium. These have no numerical rating, but are usually specific to a particular metal. Never use these for any other kind of fire.

K for cooking fires involving fats, grease, and oils.

LOCATIONS/SIGNS- Fire extinguisher must be located properly, easy to find and access.

- Make sure you have fire extinguishers within the required "travel distance" from any point in the building. This distance is usually 50-75 feet, depending on the type of extinguisher.

- Make sure the extinguishers are not blocked and have signs indicating their location.

INSPECTIONS- Inspect the extinguishers at least monthly. Make sure they are accessible. Most extinguishers will have a color-coded gauge:

- The gauge should be in the green area indicating that it is fully-charged. If it's in the red area to the left of the green, it's discharged and may not work properly. Replace it immediately!
- CO₂ extinguishers must meet weight requirements.
- Have a service inspect, test, and maintain all the extinguishers annually.

TRAINING- If you expect employees to use extinguishers, they must receive training, including hands-on instruction.


- General principles- Know what type is the right one, and when to use them, and not use them.
- Know how to use them. Follow the "PASS" method:

Pull the pin	Aim at the base of the fire
Squeeze the trigger	Sweep back and forth

Fire extinguishers can save your assets, but be sure to follow the rules established by OSHA, NFPA, and your local fire department.


Chuck Paulausky, CHMM, is President of CP Safety & Environmental. He is also President of the Arizona Chapter of the Academy of Certified Hazardous Materials Managers and is a member of the Chandler Chamber and AZ Small Business Association Safety Committees. Chuck can be reached at: 480-694-1975, or by email at cpaulausky@cpsafety.net.


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news briefs

ADEQ Announces New Performance Track Members

❖ The City of Scottsdale, Intel Arizona's Ocotillo Campus in Chandler, and Ping, Inc., in Phoenix have all recent joined the Arizona Performance Track program, according to two recent announcements by ADEQ Director Steve Owens.

The Arizona Performance Track program is a voluntary partnership between ADEQ, businesses and other regulated entities that recognizes and rewards environmental leadership for going above and beyond the minimum requirements of the law.

The two inaugural company members of Arizona Performance Track are: **Intel Arizona's Ocotillo Campus** in Chandler, which manufactures semiconductors, aims to reduce non-hazardous solid waste generated by 21 percent, or 1,500 tons annually, and thereby save 70 million gallons of water. The company also reduced use of volatile organic

chemicals (VOCs) and committed to reduce VOC use further.

Ping, Inc., which designs, manufactures and services golf clubs and other golfing equipment, has already reduced water usage by 3 million gallons per year and hazardous waste generation by almost 40,000 pounds per year. They've also committed to reducing air particulate emissions by 16% and to further reducing materials use and non-haz. waste generation.

Scottsdale is being recognized for committing to add 1,200 acres of land and habitat to the McDowell-Sonoran Preserve, an increase of more than 10 percent to the 11,000 acres the city has previously purchased or preserved, and for reducing non-transportation energy use by installing more efficient heating, ventilation and air conditioning equipment.

Scottsdale also committed to use biodiesel in the city's fleet of diesel vehicles, which will help reduce particulate matter air pollution; to replenish the underground aquifer with treated effluent; and to construct future buildings to conform to the energy-efficient Leadership in Energy and Environmental Design standard.

"The Arizona Performance Track program is a win-win program, which provides benefits to participants in recognition of their commitment to environmental protection," Owens said. "The program not only encourages companies to be good environmental stewards, it also allows ADEQ to protect public health and the environment more effectively by focusing our resources on facilities and entities that need the most attention."

The Arizona Performance Track is modeled after a national EPA 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 in addition to performing two past and four future projects with quantifiable environmental benefits.

More information about Arizona Performance Track is available on ADEQ's Web site at <http://www.azdeq.gov/function/about/track.html>. *NOTE: See also the related ASEA article on page 18.*

EDM Lands International Contract

❖ Environmental Data Management (EDM) has recently been awarded a contract with WABTEC, A Westinghouse Corporation, to provide compliance software and support services enterprise wide. WABTEC, headquartered in Pittsburgh PA, manufactures and assembles locomotives and transit trains at over 30 facilities in 10 countries. EDM's software, Comm-Trac™ will be deployed to help organize all EHS compliance data, documents and tasks in an effort to support the organizations requirements under Sarbanes Oxely. *EDM can be contacted at 480-315-0227, and maintains a website at www.edm-usa.com.*



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20th Anniversary Celebration at Ninyo & Moore

❖ The Phoenix office of Ninyo & Moore recently welcomed over 200 guests to celebrate the 20th anniversary of Ninyo & Moore's incorporation. Ninyo & Moore was established in 1986 to provide high-quality consulting services in geotechnical engineering, construction inspection and testing, engineering geology, hydrogeology, hazardous waste remediation and environmental assessment. The company has over 300



employees company-wide, and nearly 60 employees in the Phoenix office, and has provided services to private corporations, public agencies, and professional consultants on more than 1,200 projects since the Phoenix office opened in August 1998. Ninyo & Moore maintains a web presence at www.ninyoandmoore.com.

Eligibility for UST Contamination Cleanup Funds Ending June 30th

❖ ADEQ Director Steve Owens recently reminded the public that June 30, 2006 is the cut-off date for owners and operators of underground storage tanks (USTs) to be eligible for state funding to clean up contamination caused by leaking USTs.

In 2004, the Arizona Legislature voted to abolish the State Assurance Fund (SAF), the state fund that cleans up leaking USTs in Arizona, by 2013. As a step toward the eventual elimination of the SAF, the Legislature also declared that ADEQ had to be notified of contamination at a site by June 30, 2006, for SAF money to be used to help clean up the site. If ADEQ is notified of contamination at a leaking UST site after June 30, the site is not eligible for a state-funded cleanup, and the owner or operator of the USTs must pay for the cleanup without state assistance.

"The State Assurance Fund has been a valuable financial tool to help with cleaning up soil and groundwater



Ninyo & Moore Celebrate 20th Anniversary

contamination caused by leaks from thousands of underground storage tanks throughout Arizona," ADEQ Director Owens said. "UST owners and operators need to make sure that they notify ADEQ about their contaminated sites before June 30, or else they will bear the full cost of cleaning up the sites themselves."

Underground storage tanks have been utilized for decades at gas stations to store gasoline and diesel fuels. While the majority of underground storage tanks contain and dispense these fuels safely, leaks from USTs have contaminated soil and groundwater.

Although UST owners and operators already are required by law to have pollution liability insurance or otherwise demonstrate they have the financial ability to cover cleanup costs, eligible owners and operators have been able to partially rely on the SAF to cover those costs. "UST owners or operators that do not already have insurance or some other form of financial assurance need to do something quick to make sure they can cover cleanup costs for any contamination we learn about after June 30," Owens said.

Owens noted that more than 6,600 leaking tanks have

Continued on page 23



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SAEMS RCRA 2006

SAEMS, the Southern Arizona Environmental Management Society, held its annual RCRA seminar in Tucson on May 11th.

The one-day seminar, which fulfills the annual RCRA retraining requirements for employees working with hazardous waste, featured speakers from ADEQ, EPA Region 9, law firms, laboratories and

environmental businesses. The seminar provided an opportunity for over 200 attendees to network with each other and with regulators, suppliers and vendors. For more information, visit the SAEMS website at www.saems.org.



Above: left to right: Thomas Mohr, Norma Lopez, Michelle Freeark, Korky Vault. Below: attendees visit with vendors.



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News Briefs:

Continued from page 23

been cleaned up to date using funding from the SAF, but he added that over 1,500 known petroleum releases still remain to be cleaned up. "And that figure does not include any new sites that we might receive notice about before the June 30 deadline," Owens said. "The challenge will be to make as much progress as possible cleaning up those sites before the fund completely disappears."

Under the 2004 law, a site will be eligible for SAF cleanup money only if there is a "confirmed" release of petroleum at the site that is reported to ADEQ by close of business on June 30, 2006. To demonstrate a confirmed release, a UST owner or operator must submit laboratory results showing the presence of petroleum in the soil or groundwater at the site. Notice of merely a "suspected" release and without laboratory test results will not be eligible for cleanup funding, even if it is reported by June 30.

City of Tucson Resolves to Adopt Higher Environmental Building Standards

❖ The City of Tucson has recently resolved to adopt higher environmental standards for city buildings and other major building renovations. The new policy, backed by the Arizona Chapter of the US Green Building Council (USGBC), requires at least a Silver Certification Level in the Leadership in Energy and Environmental Design (LEED) Program.

The LEED Program was created by the USGBC in 1998 to provide a list of standards for environmentally sustainable construction. Buildings are categorized into four levels of accomplishment: Certified, Silver, Gold, and Platinum. The policy reflects LEED's status as the most popular and respected guide for green building in the United States. For more information about the LEED Program or the US Green Building Council, Arizona Chapter, call 602-840-2900 or email ArizonaChapter@Chapters.USGBC.org.

Advertiser Index

Advertiser	Pg
AAI Environmental Summit	25
Aegis Environmental Strategies	24
ARCADIS	7
Az State University EH&S Seminars	27
Az State University E. Ofc. of Env. Tech.	24
Carter Affiliates, Inc.	22
Chemical Transportation, Inc.	8
Clear Creek Associates	5
Diggins Safety Consulting, Inc.	10
Diversified Transportation Inc.	22
Eddie Martinez, Realtor	24
Emergency Response, Inc.	21
Emergency Restoration Experts	4
Env. Compliance Solutions, Inc.	7
Envirosure Solutions	10
GEC SA&B	27
Hazard Prevention Institute	14
Levine-Fricke (LFR)	27
Liquid Environmental Solutions	3
McPhee Environmental Supply, LLC	26
MP Environmental	5
N. Weiss Associates, Inc.	14
Romic Env. Technologies Corp.	28
SAEMS PS Seminar	26
Transwest Geochem	6
Trinity Consultants	5
Terracon	9
Turner Laboratories, Inc.	24
Univar USA Inc.	2
Verdad Group, LLC	23

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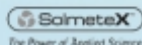
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Welcome to another edition of "Prospecting". As the weather heats up I hope your business does the same and your "pipeline" is filled with promising opportunities for the remainder of the year. For this issue, we look at training for business development personnel.

It is difficult for many organizations to fit in time for on-going sales training when our day-to-day grind creates priorities we tend to instead. In the EHS business, technical training programs play a large role and regulations dictate most of the training that takes place, focused on technical personnel. What about on the business side? Consider all the training that takes place in your organization: from HAZWOPER and Hazcom, to OSHA 40-Hour and Fall Protection, even internal policy and procedural training. For all this training how much effort is spent delivering information about new marketing strategies, business development tactics or customer service lessons to the people responsible for creating and sustaining your firm's client base? I would bet very little. And where does management look to first when revenues slip? You might think, in an industry required to conduct training on such a comprehensive level, that the sales & marketing side of things might benefit from the philosophy; not typically so.

In our industry, most firms don't have large marketing departments that support sales staff and customer service teams so those responsible for business development are often called upon to organize it as best they can with limited resources and staff. This puts an even tighter reign on our ability to fit in pro-active, outside training programs. If your company has established pro-active and sustained business development training programs, congratulations to them and lucky for you! But, for most of us, we look to the easiest and quickest way to get good information helpful to our sales & marketing efforts. Where might that be? Of course... the internet! There are an overwhelming number of web sites offering everything from in-person sales training programs to lead generation services and motivational speakers. But many times all we need are

some good ideas, articles or papers that we can give out to staff, or use in our day-to-day efforts. I have been using a few internet sites to assist in our sales efforts and have conducted some additional research for this column and compiled some of my favorites. Some offer subscriptions to get their full library of resources, but most have free stuff



Joe C. Holmes

Continued bk on pg 14

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