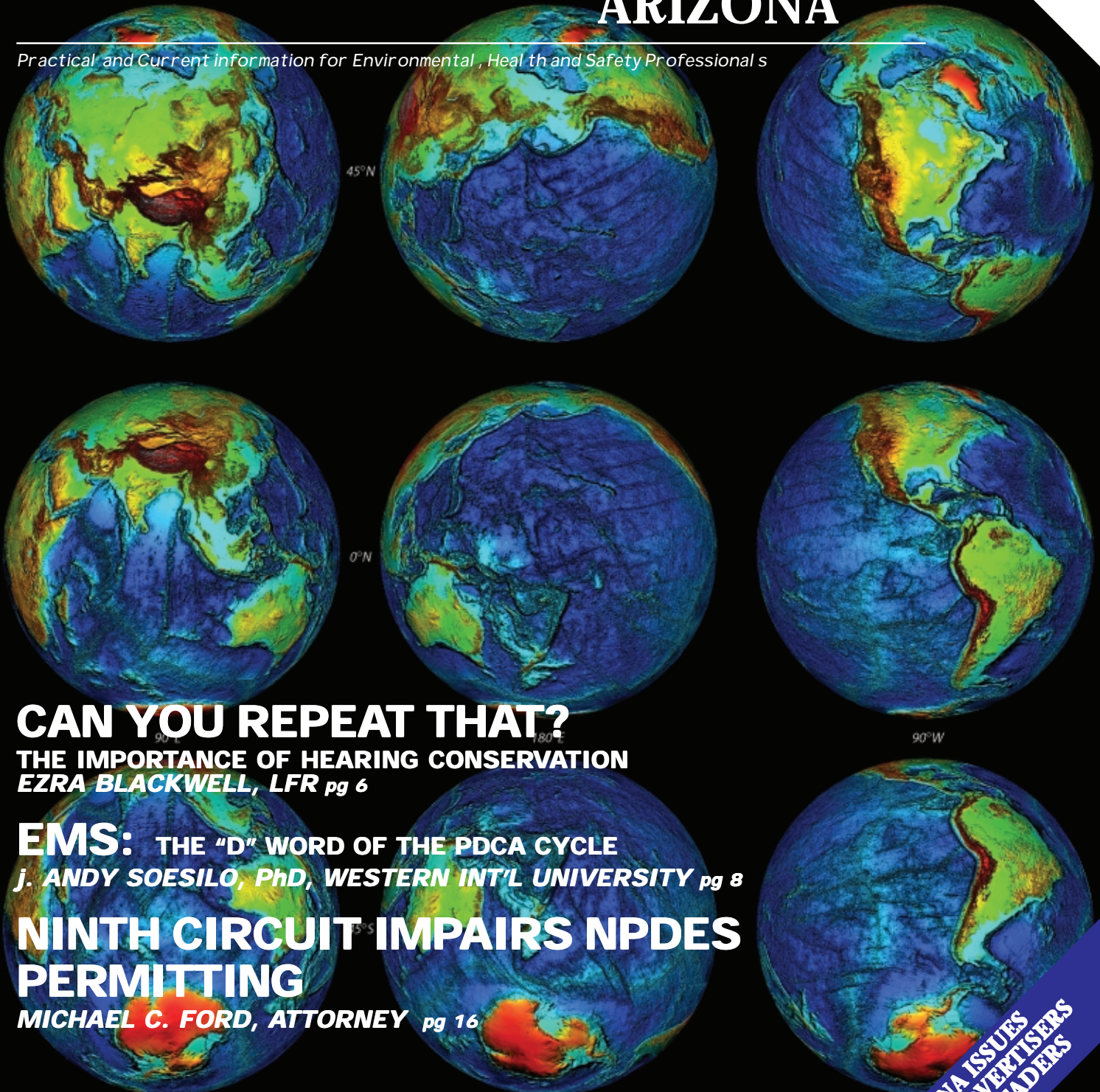


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From the Editor



The Journal continues to focus on our mission of providing "practical and current information" for Arizona's environmental management community. As we enter our sixth year of publication, I think it is an appropriate time to stop and re-examine the question: who is the "environmental management community" and how large is the field in Arizona?

Working within a specific field, such as environmental management in Arizona, it is easy to visualize the scope of the community to include those we know and work with on a regular basis, and to forget how many other people are part of the Arizona environmental community. Let's examine some of the known data:

A recent review of the ADEQ RCRA EPA ID data, as of November 30, 2007, shows 3343 active hazardous waste generators in Arizona: 293 Large Quantity Generators, 1213 Small Quantity Generators, and 1837 Conditionally Exempt SQG's. Not all generators have full-time environmental personnel, however, each must employ or contract with responsible personnel trained in the technical, safety, and regulatory aspects of handling hazardous materials and hazardous waste. Other facilities may not be hazardous waste generators, but are part of the "community" because they fall under air quality and/or water quality regulations. In addition to these "core" businesses, many others are part of the environmental management field, including: service providers, suppliers, consultants, laboratories, transporters, attorney's, regulators, and educators.

This data suggests a total of at least several thousand environmental professionals working in Arizona. The Journal is not yet reaching all, but we do reach a large part of the Arizona environmental management community, with a current mail list of over 3200.

Sincerely,

Jim Thrush, MS Environmental Management
Publisher & Editor

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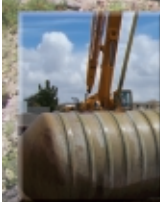
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ARIZONA

February / March 2008

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Can You Repeat That?

The importance of hearing conservation and OSHA compliance in the commercial and industrial sectors

by Ezra Blackwell

Healthy communication is an essential component within America's work force. Owners and managers in the industrial and commercial sector are responsible for safety and are challenged daily to sustain the health of their employees. To maintain this responsibility, an understanding of the consequences of failure is necessary to deter negligence and to preserve a healthy work environment.

Arizona is well-known for having large industrial and commercial manufacturing facilities, and noise safety compliance is important because of the heavy machinery involved in the manufacturing process.

The Occupational Safety and Health Administration (OSHA) regulates the exposure and monitoring of occupational health hazards in industry, including noise exposure and hearing loss. It also provides a wealth of information to support company managers in prioritizing their employees' health and safety plans for all work environments.

Whistle-Blowing

Every employee is protected by OSHA's whistle-blowing policy in section 11c of the Occupational Health and Safety Act which "prohibits any discharge or any discriminating actions to be directed towards the employee. This code is predicated on the fact that the employee will have to show that he/she engaged in protected activity, where the employer subjected him/her to an adverse employment action".¹

Acts of discrimination depending on the circumstances can include:

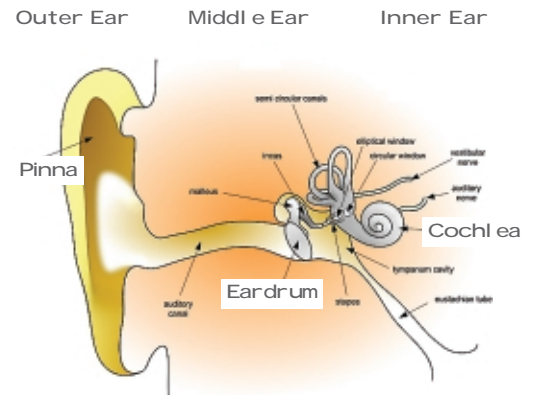
- Firing or laying off
- Blacklisting
- Demotion
- Disciplining
- Denying overtime or promotion
- Reassignment affecting prospects for promotion
- Failure to hire or re-hire
- Intimidation
- Denial of benefits
- Reducing pay or hours

Information about noise exposure safety, measurement, and mitigation is code-specific and can be hard to understand and implement. In most cases, the expertise of a well-trained and certified acoustic consultant who understands the various codes and statutes on the Federal, State, and County level is an invaluable asset in helping a company to create a work environment which abides by OSHA's noise exposure guidelines.

Hearing Loss

The principal problem of hearing loss, regardless of age of the affected individual, occurs in the diminution of a person's ability to understand speech. To better understand how hearing loss occurs in the first place, let's briefly review the ear's anatomy.

The ear consists of three major divisions: (1) the **outer ear**, which collects the sound and converts it into vibratory motion of the eardrum,



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(2) the **middle ear**, which mechanically couples the eardrum to the fluid-filled inner ear, and (3) the **inner ear**, within which the nerve signals originate before transmission to the brain via the auditory nerve.

The **outer ear** is called the **pinna** (or "auricle"). Its shape aids in the reception of sound and provides the entrance to the ear canal which conducts sound waves to the eardrum (also known as the "tympanic membrane")

The stimulation of the nerve endings involves a complex structure on the basilar membrane known as the **organ of Corti**. The **inner** and **outer hair cells** are components of the organ of Corti critically involved in the nerve stimulation process. Damage to these hair cells appears to be related to noise induced hearing loss. In fact, the location of maximum damage on the basilar membrane relates closely to the frequency at which greatest loss of hearing is observed.²

A healthy human is capable of hearing sounds over a frequency range of 20 hertz (Hz) and up to 20 kilohertz (KHz).¹ Most people with noise-induced hearing impairment first lose hearing acuity at high frequencies, making it difficult to distinguish consonants, especially s versus f, and t versus z. These individuals must strain harder to understand conversations.³

Achieving Compliance

So how is OSHA noise compliance accomplished? The first step a company should take is to conduct a site walk with a qualified noise control consultant in order to assess and identify potential noise sources that may impact the employee and/or machine operator. Noise sources within an industrial and commercial setting could be on-site industrial manufacturing machinery, power tools and/or heavy machinery for construction. Once the offending noise sources have been identified, the next step is to establish an on-site noise monitoring program using a sound level meter specifically designed to collect time weighted noise data. This instrument is called a noise dose meter, or dosimeter.



The American National Standard Institute ANSI S1.25 contains specifications for a noise dose meter. Slow time-weighted sound pressure is integrated with 5-db exchange rate in accordance with U.S. OSHA regulations³

A noise dosimeter is a device that measures the percentage of the maximum daily noise dose that is permitted by regulations. It is designed to be attached on the employee and operational during a daily work schedule. The noise dose instrument includes a microphone and amplifier, set for collecting A-frequency weighted data, with a squaring device, a time integrator, and an indicator.²

Once the data has been collected, an analysis, assessment, and mitigation report can be prepared and presented to the owner. The final step is to develop a Hearing Conservation Plan for the noise affected areas of the manufacturing facility which meets or exceeds the OSHA compliance code. In 1910.95(b) (1) Of the OSHA standard it states that "When

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EMS: The "D" Word of the PDCA-Cycle

By: J. Andy Soesilo, PhD, REM
Western International University

P DCA is an acronym which is widely used to describe the progression of subsystems within an Environmental Management System (EMS). The acronym stands for Plan-Do-Check-Act and depicts an unbroken sequence of actions, or a cycle, that signifies

the continual improvement attribute of an EMS. The "P" word of the PDCA cycle, or the planning aspect of an EMS, has been discussed in the Journal of Environmental Management Arizona issue of October/November 2007 ("Building a P2-Based EMS").

That article described the EMS planning process starting from management's commitment to the system and the formation of an EMS committee led by an EMS coordinator, to the development of EMS objectives and targets. Objectives and targets are developed to address the facility's environmental aspects which have significant impacts on the environment. Once objectives and targets are formulated, the next step is to design a program for achieving them. This article addresses the "Do" word, or the implementation of the EMS program.

The Platform

In this article, the five major EMS components are briefly reviewed. Taken altogether, these components represent a significant platform for the facility to control its environmental aspects from negatively impacting the environment. The five components are: (1) operational controls, (2) employee training, (3) communication, (4) emergency preparedness and response, and (5) recordkeeping. These components

are used to implement the EMS program to achieve objectives.

The EMS implementation program involves a twofold strategy. First, the EMS committee needs to identify EMS requirements which are applicable to a particular EMS component. Then, wherever possible, those EMS requirements are compared to the existing environmental management procedures and practices. The comparison will enable the EMS committee to decide for that particular component, whether to develop a new procedure or modify the existing procedures and practices in meeting the EMS requirements, including compliance with environmental regulations and permit conditions.

Operational Controls

The term operational controls refer to a facility's operating procedures and work instructions. Both function as a mechanism to control the facility's environmental aspects. There should be an operating procedure or work instruction for any process in the facility, which if uncontrolled, would have a detrimental effect on the environment. Because of this reason, the first step in developing an operational control is to find out which aspects of the facility's operation need an operational control.

Once the required EMS operational controls have been identified, the EMS committee has to find out whether the facility has such operation procedures or work instructions already in place. Then, the EMS operational controls will be developed from the facility's existing operational procedures and work instructions.

The operation controls should be written by the department that oversees the operation.

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Employees who are going to be involved in the operations should be trained on the operation procedures or work instructions. To guide the responsible departments to write their operational controls, the EMS committee needs to provide them with a protocol for writing the general EMS operational controls.

The operational controls protocol contains a set of rules which describe the content and requirements of operating procedures or work instructions. It should include (1) the purpose and scope of the protocol describing the precise process or activity in which the operation control apply to, (2) the responsible person in charge of developing and implementing the operation control and the identification of employees affected by the protocol, (3) the procedural contents of the protocol itself, (4) the corrective action provisions if deviation occurs in the operation, and (5) the description of the handling of records generated as a result of implementing the procedure or work instruction.

Employee Training

EMS requires that all personnel who have responsibility or authority over operations that have significant environmental impacts must be trained in a job-related training. The job-related training provides the affected employees with information and updates on the procedures or work instructions, the explanation as to why the changes (if any) are necessary and which changes will affect the employee's daily activities. Employee awareness and training to involve employees in pollution prevention planning and implementation to the maximum extent feasible should be required.

Job-related training should encourage employees to look for opportunities to conserve water, energy, and natural resources and to reduce or prevent waste generation, wastewater discharge and air emissions. Although regulatory compliance may not be directly related to the employees' work, the employees need to be aware of the potential environmental impact of their activities.

Exposure to the concept of resource conservation and pollution prevention as well as the indirect role of the employees in the regulatory compliance through job-related training provides an impetus to move forward with the EMS awareness training. Here the employee will be informed about EMS, the rationale why the facility is adopting an EMS, and the many ways the employees can contribute to the success of the EMS program.

In addition to job-related training and EMS awareness training, there is a number of training required by law. To name just a few of them: health and safety, hazard communication, hazardous waste management, spill prevention control and countermeasure, and storm water pollution prevention.

A training program must be developed covering the identification of all types of training in the facility and the tracking of the training implementation. Training records which are used to monitor the facility's training program represent a documentation of completed training activities that will satisfy EMS requirements. The documentation demonstrates that employees receive adequate training to perform their duties in a safe and environmentally sound manner. In many facilities, the human resources department manages the employee training program.

EMS requires that a training protocol be established and maintained. The protocol describes the designated persons who will identify employee training needs, who will be responsible for coordinating the training, who will be assigned to develop the training modules, and who will be responsible for handling training records. The description of training topics should be covered in the modules.

The format of the training protocol may follow the one used for the operation controls. It should include the purpose and scope, the responsible department that handles the training program, the procedural

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Plan-Do-Check-Act

Continued From Pg 9

contents of the training protocol, periodic updates and reviews, and the recordkeeping provision of the employee training program.

Communication

Employee awareness through training encourages the employees to take part in the EMS program. To facilitate employee participation, effective internal communication must be available in the facility. In addition to internal communication, EMS also requires facilities to strengthen external communication on environmental issues to the local community, environmental groups, government agencies, and the public.

To develop a communication plan for the facility, the facility needs to identify currently used communication mechanisms at the facility, compare them with the EMS requirements, and develop a communication plan utilizing existing communication techniques as far as possible. Typical internal communication techniques include memo, email, newsletter, posted notices on bulletin board, and suggestion boxes. External communication mechanisms include correspondence, hotline, press releases, open house, website, facility tours, workshops, and sponsorship of community events.

EMS requirements consist of the communication of internal and external environmental information to management, and the communication from management to others of the facility's intentions regarding environmental impacts. Items to be communicated internally include the facility's environmental policy, the status of environmental compliance, and the EMS objectives and targets. Also included in the communication program is the facility's procedure for internal reporting and external reporting on environmental activities of the facility.

The facility's communication program must demonstrate management's commitment to the environment, address issue about the organization's environmental activities, describe the facility's strategic environmental management approach, and establish a line of communication that defines responsibilities. The EMS coordinator is responsible for coordinating the communication program. The responsibility includes developing a communication protocol which outlines the types of communication, when the protocol must be updated, and the responsible person for the updates.

Emergency Preparedness and Response

The philosophy behind emergency preparedness and response is to address an emergency situation by actions to mitigate, reduce, and eliminate the environmental health and safety impacts. EMS requires that a facility establishes and maintains procedures to identify potential for and respond to emergency situations and for preventing and mitigating the environmental impacts that may be associated with them. The EMS coordinator is usually the person assigned for this task.

The EMS requirement implies that planning for emergencies starts with the identification of the sources of emergency inside a facility. This means to identify areas, equipment, or processes that would require an emergency response in the event any of those sources triggers an emergency situation. Examples of things to look for: storage tanks, chemical storage areas, loading and unloading docks, truck routes within the facility, process equipment involving chemicals, pollution control equipment, and any situation that can create spark or fire.

To address emergencies, most facilities have in place some form of emergency response plan and procedures as required by EPA, OSHA, or DOT. These documents provide the EMS coordinator with information on available emergency response equipment, fire safety, communication equipment, maps, chemical data (such as material safety

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Sustainability and Sustainable Development

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*Topsy - Part II

(not by Cozy Cole)

**If you are old enough to remember who/what this was, send me an email)*

In Part I in the last Journal issue, it was pointed out that a lot of lip service is being directed at greenhouse gas reduction by people who don't have a clue about what it is they are saying. I've retitled Part II, therefore, as "**Topsy**" because that is what this whole subject is to the lay-public who are bombarded daily with 'facts' and 'stats' that support or refute each other.

Recently, for example, one of the favorite tactics being promoted by the 'experts' (i.e. Hollywood stars and Rock & Rollers), is planting trees to "offset" our personal greenhouse gas emitting habits. The assumption that trees absorb carbon, is of course, quite correct, but its not as simple as just "buying" a few offsets from one of the NGO's that "sell" credits and plant trees to *handle* your car's emissions, —(or your portion of that commercial air flight you needed to appear for the Academy Awards night in LA)—

According to a 2007 report by Transnational Institute's Carbon Trade Watch, there is another reality about the 'offset' mentality:

"...the sale of offset indulgences is a dead-end detour off the path of action required in the face of climate change."

And, further, the Carbon Trade Watch group sums it up more succinctly, saying—

"...carbon offsets are like the medieval practice of selling indulgences to wash away sins: It may feel good, but it doesn't solve much."

Offset promoters use averages to estimate how much carbon a given tree or forested acre can capture. Some, like the non-profit Conservation Fund, figure each tree planted sequesters a little less than a ton and a half *over a hundred year lifetime*,

although few trees actually live that long. Using that equation, even a 50 year old tree has absorbed just a little less than one metric ton of carbon in the photosynthesis process during its lifetime. But all trees will release carbon in the decaying or dying process when it recombines with oxygen once more in making CO₂ again.

And, by the way, all that oxygen produced during a tree's lifespan gets reclaimed during the dying process, too, even if the dying takes place over 50 years of use as lumber in a structure—Its mother nature's way of keeping everything in balance—so remember:

"...Nature always bats last and, by the way, also owns the stadium!"

Patrick J. Michaels, who is one of the scientists who helped compile the Fourth Assessment Report, published results from a study of satellite data in *Science* in October, 2006, showing that Greenland was losing less than 25 cubic miles of ice per year. That equates to about 0.4 percent of Greenland's ice per century. Somehow that information didn't make it into the Report summary but it is noted in the body of the actual report which the most vocal of critics seem to have avoided reading.

Michaels also noted that temperatures in the most recent decade are not at all warm compared with the 50 years between 1915 and 1965. His point is, if Greenland ice melting didn't raise sea level appreciably during that long period, why will it suddenly do so now? —More '*Topsy-Part II...*'—

Adding fuel to the '*Topsy*' fire is this news from the EU—On October 2nd of 2007, the European Union British High Court ruled that Gore's movie is too "*partisan*" and "*political*" and riddled with misleading exaggerations and factual errors that it can no longer be shown in EU public schools without disclaimers—The court said they feared that "*children forced to view the doomsday film would be traumatize and feel guilty for not being able to control their own futures.*"

That is unfortunate for several reasons, the most obvious being that the attendant publicity from his film and presentations have heightened and sensitized the general public's concerns about the issue of climate change. Without his film and tireless promotion, these issues might not have been addressed for several more years—so despite the fact that *Inconvenient Truth* has little supporting documentation, we owe Al Gore a debt of gratitude for bringing this issue into the political and public policy arenas—we **do** need to address this issue now!

And, most importantly, we don't want to have to answer the questions about why we procrastinated so long, when, in the not-too-distant future, we have to defend today's climate change strategies to our future children's, children's, children.

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

RCRA Generator Training Requirements

Hon. Ken Reilly, J.D.



As most readers already know, Hazardous Waste compliance is a requirement at both the federal and state level. Too often there exists the mistaken belief that Regulations are either not laws or less important than Statutory laws. So let's take a brief visit to the Courtroom.

Most citizens are aware that the power of a Judge to punish for a statutory violation, includes Contempt, Fine, Injunction (both preventative and mandatory), and in severe cases, Incarceration. Did you know that each of the above judicial options is also available to any Judge hearing a Complaint regarding violation of a state or federal regulation? And, by the way, while the regulations governing Large Quantity Generators are a bit more severe than those governing Small Quantity Generators, nevertheless each category has the same exposure to lawful compliance obligations.

Perhaps the most frequently asked question of this Trainer is, "Where does it say that I have to take this Annual Training?" The answer is confusing even to some attorneys; but, can best be summarized as follows: a close reading of 40 CFR 262.34(a)(4), a part of the regulations which appears to deal only with Accumulation Time, discloses the method by which a generator is allowed to avoid the need to obtain a Permit for the storage of hazardous waste. That defines the method as compliance with 40 CFR 265.16, which is the actual statement of the Annual Training Requirement. Yes, it is true that this part of the regulations was originally intended to govern the training requirements of HazWaste disposal facility personnel, but it was made applicable to LQGs and SQGs by the clever language added at the end of 40 CFR 262.34(a)(4).

Hon. Ken Reilly, J.D., serves as Presiding Municipal Court Judge of the City of Montgomery, Texas. He has provided environmental training for over 21 years. Judge Reilly can be reached at Reillytalk@aol.com.

Plan-Do-Check-Act

Continued From Pg 10

data sheets), external emergency responders, and regulating agencies for emergency notification.

The documents can be used to evaluate whether the existing plan and procedures are adequate for the type of emergency which can happen in the facility. Major provisions to be included in an emergency plan are: (1) emergency training, (2) emergency drill which is conducted annually or as required by regulation, (3) designation of emergency coordinator, and (4) emergency response flowchart showing a response procedure in the event of an emergency.

The emergency preparedness and response procedures must be reviewed and revised where necessary to accommodate changes in processes or regulatory requirements. The review must also be conducted after the occurrence of an emergency.

Recordkeeping

Records are information recorded at a point in time and never changed thereafter. EMS requires that a facility establishes a recordkeeping system for the implementation of EMS and to record the extent to which environmental objectives and targets have been met. The recordkeeping system contains requirements for keeping, indexing, retaining, updating, and maintaining EMS records. These requirements are written in the facility's EMS recordkeeping protocol.

Records to be kept include applicable environmental permits, complaint records, incident reports, training records, equipment inspection and calibration records, audit results, management reviews, and any other pertinent data on processes, products, facility's contractors and suppliers. Proper account should be taken of confidential business information.

The records can be decentralized at the point of generation, or kept in a central location. Regardless, the records must be identifiable and locatable. The record retention schedule is necessary for compliance with the regulatory requirements, or is based on facility's necessity.

Summary

The obvious thing about EMS implementation is the documentation. This documentation is crucial because it provides the facility with reference as to how the company is doing, where the organization is at with concerns to its plan, and where they are going. Ironically, the documentation commitment is also one of the reasons that makes a facility think twice before it decides to adopt an EMS.

J. Andy Soesilo, PhD, REM is a Professor at Western International University, and has over 20 years experience working in the environmental field and pollution prevention in Arizona. Andy can be contacted at jasoesilo@wiu.mailcruiser.com.



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Larry Olson, PhD.

It's All About Chemistry

Second Generation Biofuels

A recent article in *Science* is entitled "How Green Are Biofuels?" (J. Scharlemann and W. Laurance (2008), **319**, p. 43). Any alternative fuel, biologically derived or not, should be economically competitive with fossil fuels, produce more energy than is consumed in making it (Net Energy Balance, NEB), reduce greenhouse gas emissions, and have minimal other impacts on the environment. Some of these other environmental effects include whether or not crops such as sugarcane are planted in place of tropical forests, runoff of fertilizers and pesticides from agricultural lands, and release of nitrous oxide, a potent greenhouse gas derived from denitrification reactions of nitrogen fertilizers. Economic impacts are important as well when highly productive land is used for fuel rather than food crops.

Hill, et al (Proceedings of the National Academy of Sciences (2006), **103**, p. 11,206) considered the two most prominent biofuels in the U.S., corn based ethanol and soy biodiesel. The NEB for both fuels was positive, but was much greater for biodiesel. Corn based ethanol produced only about 25% more energy than it consumed and most of this was due to the energy credit for the distillers dry grain with solubles (DDGS) that is an animal feed by-product. This low NEB is primarily due to the high energy input for growing and processing corn.

Soybean diesel, on the other hand, produces about 93% more energy than it consumes. Taking into account all greenhouse gases, corn ethanol only reduced emissions by 88% compared to gasoline while soy biodiesel reduced them by 59% compared to diesel.

But an even bigger problem is the impact of supply and demand. U.S. production of corn ethanol in 2005 was 15 billion liters, utilizing 14% of the crop. Some estimate ethanol production could reach 37 billion liters by 2010 which would use 30% of the nation's corn (K. Cassman and A. Liska, 2007, *Biofuels, Bioproducts, and Biorefining*, **1**, 18). But if the entire 2005 U.S. corn and soybean crop had been devoted to producing ethanol and biodiesel, it would have supplanted only about 12% of the gasoline and 6 % of the diesel used in that year. Both these crops are major contributors to the human food supply and already the price of crops that can be used for both food and fuel are being determined by their value as fuels. In the next 50 years, we will need to produce twice as much food as we do presently. What effect will that have on food prices, not just in the U.S. but around the world? Will high demand tempt farmers to increase yields by using more fertilizers and unsustainable cultivation methods?

This is not to say that biofuels don't have a place in future fuel feedstocks, but we need a new generation of biomass sources. Ideally biofuels should not compete with food crops, should be able to utilize marginal agricultural lands not suitable for food, require low agricultural inputs, and consume less energy in conversion to fuels. Perennial cellulosic crops such as switchgrass, algae and waste oil are all being touted as potential replacements for corn and soy. Major hurdles remain with each, but progress is being made. Schmer et al (Proceedings National Academy of Sciences, 2008, **105**, 464) have measured inputs on switchgrass managed as a biomass energy crop. They estimate that switchgrass can produce > 500% more energy than it consumes, with greenhouse gas emissions 94% lower than gasoline. Most of the land used for perennial biomass crops is projected to come from the Conservation Reserve Program (CRP) which paid farmers to remove fragile cropland from production and preserve the soil by planting grasses and trees. So we're not there yet, but there are some very promising alternatives on the horizon. Biofuels, but not necessarily the current ones, should have a place at the table.

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

Associations Pages

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



EPAZ

www.EPAZ.org

The 4th annual Gatekeeper Regulatory Round-up conference was held on January 28 and 29, 2008. The theme of "Super Sustainability" was in recognition of this year's conference occurring just prior to the NFL championship game. Keynote speakers included Dr. Jim Holway, Associate Director of ASU's Global Institute of Sustainability and Shannon Williams of the Arizona Super Bowl Host Committee. The conference covered topics about all environmental media, safety, and hazardous material management and planning with presenters from industrial, academic and governmental organizations. EPAZ Scholarship awards totaling over \$8000 were presented at the conference.

During our December meeting, Travis Behrens from the Maricopa County Air Quality Department gave an overview of regulations on building demolition and renovation required to ensure asbestos emissions are controlled in accordance with NESHAPs requirements.

EPAZ holds monthly luncheon meetings on the 2nd Thursday of the month from 11:30 am to 1:00 pm. 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 or contact Mannie Carpenter at (602) 393-4800.



*Mannie Carpenter,
President*

**SESHA AZ Chapter
Semiconductor
Environmental Safety
& Health Association**
www.seshaonline.org

The Arizona Semiconductor Environmental Health and Safety Association (SESHA) had no activity in the last quarter due to member company's commitments and business activities. The start of the New Year brings with it newly elected officers for the 2008 year. The first order of business will be a planning meeting scheduled for either January 30th or February 1, 2008 at the Rohm & Haas facility in Phoenix. The coming year promises to be an eventful one with many new faces and planned activities. For membership information or details, please contact Christine Pomerence at (602) 470-4408 or email her at cpomerence@rohmmaas.com or Martin Fekete at (480) 266-7915 or email phaseone@q.com. Guests and new members are always welcome.



*Marty Fekete,
President*



www.azchamber.com

As of Jan. 1, 2008, the merger between the Arizona Association of Industries and the Arizona Chamber of Commerce is complete. AAI's Environment Committee, along with its associated subcommittees, has been incorporated into the Arizona Chambers organizational structure under the direction of the Arizona Manufacturing Council. Mark Dobbins, former Chairman of the Board of Directors for AAI, along with a number of others, have been added to the Arizona Chamber's Board of Directors and Jeff Homer and David Kimball will serve as Co Chairs of the Arizona Chamber's Environment Committee. AAI's Environment Committee monthly breakfast meetings will continue under the name of the Arizona Chamber of Commerce and will be held on the 2nd Wed. each month at the Sheraton Phoenix Airport Hotel located at 52nd St. and Broadway in Tempe as they have in the past. Look for email announcements for meeting details. Contact Dan Romm at 602-263-0086 to have your name added to the meeting notice distribution list. For questions contact Jeff Homer at 480-441-6672.



*Jeff Homer,
Co-Chairman
Environment
Committee*



www.SAEMS.org

We should have hit the ground running in 2008. Facility Annual Reports, Tier II reports and annual refreshers are probably our top priorities right now. Plans are also underway for the 2008 SAEMS sponsored seminars. The Gatekeeper seminar was held on January 30 and the RCRA seminar is rapidly approaching.

The SAEMS 20th Anniversary celebration in early December was a success and it was good to remember past events and recognize those who have contributed to SAEMS' success. But now it's time to look to the future. And the future holds highway clean-ups, a wildcat dump clean-up, monthly luncheon meetings, scholarship application reviews, and seminars. We hope you will take advantage of the educational/training and community service opportunities.



*Jeff Christensen,
President*

**ASSE
American Society of
Safety Engineers**

The Southern Arizona Chapter of the American Society of Engineers were fortunate to have Charles A. Schable, M.S. as a guest speaker. Mr. Schable was the Associate Director for Emergency Response and Preparedness, National Center for Infectious Diseases (NCID), Centers for Disease Control and Prevention (CDC) and Director of NCID's Bioterrorism Preparedness and Response Program. Mr. Schable talked about his role in planning for response to a bioterrorism event. Mr. Schable told the group that accurate, early recognition of a problem is one of the most important elements to successful defense. Along with that, having systems in place to protect citizens from infectious diseases, environmental threats and

terrorism is also critical. In case of a bioterrorist attack in the U.S. CDC would work with other agencies such as the Department of Health and Human Services in putting together the public health response. CDC could provide medical materiel housed within the Strategic National Stockpile; deploy subject matter experts to assist in managing the efforts to control and monitor the attack; provide recommendations for the treatment, isolation or quarantine of individuals; and assist in identifying and addressing safety issues for the first responders.



Shari Di Peso,
Secretary

Grand Canyon Section Air & Waste Management

www.awma-gcs.com

The Grand Canyon Section of Air and Waste Management Association enjoyed a busy and productive fall schedule. We look forward to this carrying over into the spring. The board is working on an exciting spring meeting schedule including meetings featuring Doug Erwin with the Maricopa County Air Quality Department, Roger Ferland from Quarles and Brady LLP, a Tucson meeting, and a site visit to a local environmental project.

In December we held our annual election resulting in a new slate of officers and directors. Congratulations to our newly elected and returning officers and directors. The Grand Canyon Section is currently accepting applications for its annual environmental scholarship. If you know anyone who might be interested have them check out the scholarship page on our website.

Meetings are generally the 3rd Thurs. of the month with our next meeting scheduled for Feb. 21, 2008. This will be an evening meeting held in conjunction with the Environmental and Natural Resources Law Section. Visit our website at www.awma-gcs.com for more information or contact Kale Walch at 520-866-6960.



Kale Walch,
President



ACHMM Thunderbird

www.thunderbirdchmm.org

The Thunderbird Chapter wants to extend its congratulations to three Az. students in Environmental programs in Arizona, winners of its 2008 Thunderbird Chapter Scholarships: Kelly Jaramillo- Graduate student in the ETM program at ASU-Polytech; Amanda Reeve- Graduate student in the ETM program at ASU-Polytech; Dane Whitmer- Senior in Civil Engineering with env. emphasis at University of Arizona.

The Thunderbird Chapter will offer a course May 5-8, 2008 on the "Essentials of Hazardous Materials Management," a great course for all EHS professionals, as well as good preparation for CHMM candidates. (See ad on page 23.) Thunderbird Happy Hour is on 1st Thursdays, 5:30 PM - ?? ACHMM/EPAZ monthly lunch meetings are at the ASU MERCADO from 11:30-1:00 on the 2nd Thurs. each month.

Meeting details: www.thunderbirdchmm.org or www.epaz.org.

Calendar Items: Mar 6 - T-Bird Happy Hour, TBA; Mar 13 - Luncheon Meeting, Public Records; Apr 3 - T-Bird Happy Hour, TBA; Apr 10 - Luncheon Meeting; May 5-8 - Essentials of Hazardous Materials Mgmt., Phoenix, AZ



Chuck Paulausky,
Board Member



www.eia-az.org

"Free Environmental Seminars" scheduled throughout Arizona and in New Mexico. The Association will continue quarterly dinner meetings with guest speakers covering an array of topics. We are also happy to announce the return of the "Contractor's Forum". This group of contractors, consultants, business owners and regulators meet monthly to discuss issues and concerns regarding the state of the environmental industry and ways to make it better. They are a proactive group with high energy!

Please visit our web site at www.eia-az.org or call 602-437-3737 ext. 123 for info. on upcoming events sponsored by EIA-AZ.



Laura Adams,
President



www.azalliance.org

The Alliance elected officers for 2008 at its November board meeting. Officers for the new year are: Chair: Scott Davis, APS; Vice Chair: Len Drago, Intel; Treasurer: Dan Casiraro, SRP; and President: Jim Thrush. The Alliance extends its great appreciation to Rob Barnett, Ping Inc., who served the Alliance as Chair for three years!

ReUseAZ, our recycling/reuse assistance program, now has a Tucson area phone number: 520-664-3550. This is in addition to the Phoenix area number (602-325-4705). The website remains the same for the entire state (www.reuseaz.org). The Tucson area will soon have its own ReUseAZ program coordinator working to assist local businesses to find recycling and reuse solutions. Feel free to call. More about this in the next issue! Contact the Alliance at 480-422-7392



Scott Davis,
Chairperson



www.azhydrosoc.org

The Arizona Hydrological Society has made it through the holidays without missing a beat. The Flagstaff Chapter is busy at work on the 2008 Annual Symposium that will be held jointly with AIPG, Sept. 20-24, 2008 in Flagstaff. The call for abstracts has been sent and the deadline for submissions is April 15, 2008. There are many sponsor opportunities also available at this time. Visit the web site at <http://www.aipg.org/2008/AIPG-AHS-3IPGC.htm>.

The Tucson and Phoenix Chapters continue to hold monthly meetings on the 2nd Tues. of each month. Visit www.azhydro.org and check the calendar for exact locations and speaker/topic information. AHS continues to grow in numbers and looks forward to more exciting and educational events in the coming year.



Jeanie Merideth,
Society Manager



Michael C. Ford, Attorney

Regulatory Developments

Ninth Circuit Impairs NPDES Permitting

Environmental decisions from the Ninth Circuit are almost always interesting, though often short-lived.¹ The court's recent decision interpreting NPDES requirements² is a showstopper for its far reaching implications for prospective permittees, and water quality improvement efforts. The decision involves Arizona's own Carlota Copper project, but it is not just about mining (although it certainly attests to the potential difficulties in permitting a new hard rock mine in the United States). It poses an enormous roadblock to many new dischargers in the Ninth Circuit (which includes Arizona), and possibly beyond.

Carlota's project involves construction of an open pit copper mine near Miami, Arizona, with associated processing facilities, and waste rock piles. Carlota's quest to obtain regulatory approvals for the project began over a decade ago, and has involved an alphabet soup of regulatory agencies and environmental decision documents, including ADEQ,³ EPA, USFS, ACOE, EIS,⁴ EA,⁵ TMDL,⁶ SEA,⁶ ROD, FONSI,⁷ EAB⁸ and SSS,⁹ as well as a who's who phalanx of anti-mining extremist groups.¹⁰

In the NPDES subplot to the saga, Carlota sought to obtain permit coverage for storm-water runoff from its waste rock piles, a type of discharge routinely covered by a general permit for industrial storm-water (*e.g.* MSGP 2005).¹¹ However, early in the process (ca. 1997), Carlota reluctantly acceded to EPA's request to apply for an individual permit. EPA's concerns stemmed in part from the fact that Pinto Creek had been designated as "impaired" for copper, due primarily to discharges from abandoned mines in the drainage, including the "Gibson Mine" site.¹²

EPA's permit regulations include a provision restricting the issuance of permits for new discharges to a water not meeting applicable water quality standards, which states:

No permit may be issued:

(i) To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards ... and for which the State ... has performed a pollutants load allocation for the pollutant to

be discharged, must demonstrate, before the close of the public comment period, that:

(1) There are sufficient remaining pollutant load allocations to allow for the discharge; and

(2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.¹³

Carlota and EPA agreed to include a special condition in Carlota's NPDES permit whereby Carlota would be required to undertake a cleanup project at the Gibson Mine prior to discharging from its operations. The project was designed to substantially improve runoff from the Gibson Mine site, and water quality in Pinto Creek, by removing the identified major sources of copper contamination in the drainage. The water quality benefits of this project are projected to dwarf any pollutant contribution of Carlota's operations, thereby "offsetting" the discharges allowed by its permit.

Under the offset concept, Carlota's discharge would not be construed as "causing or contributing" to the impairment of the receiving water, rendering the remainder of the regulation (load allocations and compliance schedules) inapplicable. This approach is consistent with EPA's longstanding interpretation of its own regulations, and is designed to encourage innovative approaches to improving water quality, while allowing discharges with a net-positive water quality impact. The NPDES permit was issued in July, 2000.

The NGOs challenged the permit at every juncture, first forcing the permit to be withdrawn while the agencies undertook additional assessment, and then challenging it before the Environmental Appeals Board after EPA reissued the permit in February, 2002. (Ironically, the ongoing NGO challenges delayed for many years the cleanup of the acknowledged major source of contamination in the drainage at the Gibson Mine, and the water quality improvements provided for in the permit). The EAB issued an exhaustive decision in 2004 upholding the permit, which was then followed by the subject appeal to the Ninth Circuit.

Before the Ninth Circuit, EPA and Carlota argued that the 122.4(i) restrictions were not applicable because Carlota's operation would not "cause or contribute" to the impairment given the offset provided by the Gibson Mine cleanup condition.¹⁴ EPA/Carlota also argued that even if the restrictions applied, the conditions were met because the TMDL study EPA completed includes sufficient load allocations to allow Pinto Creek to meet applicable water quality standards, and because EPA had included appropriate discharge limitations in the permits it had issued to other dischargers along the creek.

The three judge panel of the Ninth Circuit¹⁵ rebuffed EPA/Carlota at every turn, concluding that the 122.4(i) restrictions prohibit *any* quantity of discharge from a new source/new discharge to an impaired water whatsoever, regardless of any offsets, unless a TMDL has been performed demonstrating load allocations will be met (query how exactly an agency could make such a demonstration), *and* EPA has imposed at least "compliance schedules" on all dischargers to the impaired water (not just permitted, point sources).¹⁶ In doing so, the court accorded absolutely no deference to EPA's interpretations of its own regulations, and in fact did not so much as mention this well-accepted principle of judicial review.

The Carlota court's interpretation of the 122.4(i) discharge restriction, if it survives appeal, may effectively prohibit the issuance of NPDES permits, including general permit authorizations, to new dischargers on impaired waters. The § 122.4(i) restriction applies to state NPDES program, including Arizona's,¹⁷ and thus the decision could affect NPDES programs beyond those in the Ninth Circuit. As in most states, Arizona has many water segments not meeting applicable standards (over 100), and the process of developing TMDLs takes

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years due to, among other factors, the challenges of gathering sufficient data in a desert environment. This fact is aptly illustrated by Pinto Creek, where the TMDL process has been ongoing for over 10 years. The process of developing "compliance schedules" for every discharger on an impaired segment, as mandated by the Carlota court, could take many more years, and in fact may not be possible under NPDES authorities, which extends to point sources, but not non-point sources.

The decision could be broader still if construed to apply to all types of new point source discharges (process- and storm-water), including storm-water from construction projects. The decision also severely undermines any incentive for prospective permittees to undertake innovative offset projects to improve water quality (such as Carlota has done at the Gibson Mine), which will have a detrimental impact on water quality. Prospective new dischargers impacting impaired segments would be left to engineer facilities to a "no discharge" standard (rarely a guarantee, due to the potential for floods or malfunctions/breakdowns, etc.), hope for extraordinary agency efforts to develop the requisite TMDLs and compliance schedules for all dischargers (often a practical impossibility due to budgetary and workload realities), move the project elsewhere, or abandon it altogether.

Carlota filed a petition for rehearing with the Ninth Circuit on January 18, 2008, but the Department of Justice (on behalf of EPA), in another surprising development, unfortunately declined to file its own petition. *Amicus* briefs are due February 5, 2008 (after this article went to press), and at least a few stakeholder groups should file in support of Carlota, given the drastic and far reaching impacts of the decision. We can expect to hear this Spring as to whether the full Ninth Circuit will reconsider the case, or Carlota will be left with a last resort petition to the Supreme Court.

Footnotes:

1 19 of 22 9th Circuit cases reviewed by the Supreme Court last term were reversed or vacated. <http://www.latimes.com/news/opinion/la-oe-fitzpatrick11jul11.0.6274474.story?coll=la-opinion-righttrail>.

- 2 *Friends of Pinto Creek v. EPA*, No. 05-70785, slip op. 13505 (9th Cir. Oct. 4, 2007).
- 3 *Final Environmental Impact Statement for Carlota Copper Project*, U.S. Department of Agriculture, Forest Service, Tonto National Forest, July 1997.
- 4 *Supplemental Environmental Assessment (EA), Final Section 404(b)(1) Evaluation, Public Interest Review, Section 404 of the Clean Water Act [33 USC 1344]*, Permit Application Number: 944-0899-MB, Applicant: Carlota Copper Company, United States Army Corps of Engineers, January 1998;
- 5 *Total Maximum Daily Load for Copper in Pinto Creek, Arizona*, U.S. Environmental Protection Agency, Region 9, April 2001.
- 6 *National Pollutant Discharge Elimination System (NPDES) Permit Conditions for the Carlota Copper Project, Gila and Pinal Counties, Arizona, Supplemental Environmental Assessment*, EPA, May 2001.
- 7 *Amended Record of Decision/Finding of No Significant Impact Statement, U. S. Forest Service, and Supplemental Environmental Assessment, U.S. Army Corps of Engineers, and Supplemental Environmental Assessment, U.S. Environmental Protection Agency, for the Carlota Copper Project*, U.S. Environmental Protection Agency, Region IX, February 2002.
- 8 *In re Carlota Copper Company, NPDES Appeal Nos. 00-23 & 02-06*, Environmental Appeals Board, September 2004.
- 9 *Draft Pinto Creek Site-Specific Water Quality Standard for Dissolved Copper, Salt River Watershed - HUC# 15060103-018, Gila, Maricopa and Pinal Counties, Arizona*, ADEQ, March 2007.
- 10 *E.g.* National Wildlife Federation, Arizona Wildlife Federation, Grand Canyon Chapter of the Sierra Club, Mineral Policy Center, Maricopa Audubon Society.
- 11 Carlota's storm-water retention basins would contain either the 10-year/24-hour or 100-year/24-hour storm event, so discharges would only occur during larger rain events.
- 12 After further study, ADEQ has since concluded (too late for purposes of this case, as Carlota's bad luck would have it) that Pinto Creek would not meet applicable water quality standards due to natural background conditions *alone*, and recently proposed a higher "site specific" copper standard for Pinto Creek to reflect natural conditions. *Supra*, fn. 9.
- 13 40 C.F.R. § 122.4 (2000).
- 14 Also in the category of post-decision developments, the Gibson Mine reclamation work was recently completed, thanks in no small part to Carlota's decision to fulfill the condition in reliance on the EAB's opinion upholding the permit.
- 15 Opinion by Judge Hug (appointed by President Carter), joined by Judges Gould and Tashima (appointed by President Clinton).
- 16 *Friends of Pinto Creek*, at 13515.
- 17 *Ariz. Admin. Code R18-9-A903(7)* (2002). Arizona was granted NPDES primacy during the ongoing Carlota dispute.



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Guest Column:

It's All About Survival

Hey, can i bum a Camel off of you?

Last month, the Journal of Environmental Management Arizona celebrated its 5th birthday, and its 5th year performing a terrific job of serving Arizona's environmental community. Jim Thrush, the father of JEMA — the founder, the publisher, the editor, the entrepreneur, and the brains behind it all — has developed a successful and quite useful resource for the State of Arizona. All of us should help Mr. Thrush to celebrate his many fine achievements and support his efforts to help JEMA's continued success: for JEMA to have its own "children," so to speak. Let's publish his Journal in *every* State of this great country of ours.

Thrush's success is called, "survival." To use the word, "survival," is not much different, really, than using the overused buzzwords, "sustainable development," or the word "sustainability." After all, if we *don't* survive there may not be any children, or Dr. Nick Hild's now famous Children's Children's Children.

Sustainability? Sustainable Development? Let's be simple and truthful and call it what it truly is; it's plain old survival. Somehow, I doubt that generations of dinosaurs stood still (or stomped around in the mud) for 200 million years talking about sustainable development. Obviously, for some reasons, they were not able to adapt to climate change — and now, residuals of their children's children's children are fueling our hybrid cars and providing for the most-advanced human civilizations in world history. But the dinosaurs lasted about 50,000 times longer than humans have been stomping around. Of course, 65-million years after their demise, debate rages on about how the dinosaurs became extinct (meteorites slamming into Earth? Deccan Traps? Global Warming? Climate Change? Smoking filterless Camels?). Nevertheless, humans are capable of adapting to changing climates. We can't change the temperature of the Earth. But we can survive, and we can make humanity sustainable — that is, if we do it right.



David L. Kirchner

As a geologist, it bugs the dinosaur-poop out of me to hear and read all this stuff about *human-caused* global warming and climate change and carbon foot prints (petrified dinosaur foot prints are a lot cooler). What bothers me most about it is that in the past five years, it has become socially acceptable and politically correct to talk about *saving* the environment and offering "green" solutions that are totally stupid. For

the most part, it appears that non-scientists and celebrities are pushing for these stupid solutions, and they are getting all the limelight. Much of this greening has happened in the past year or two. And yes, some is driven by corporate competition (financial greed and business survival), as best illustrated by the flourishing carbon credits market and advertisers trying to illustrate how wholesome and green their clients are.

Unfortunately, most of the so-called greenies simply do not understand — or they are unwilling to adhere to — the scientific method. And some of them believe that the next president's top priority is to "fight global warming." Mistakenly too, some believe that this next presidential election cycle will be "the biggest environmental story of 2008." Sorry. Mother Nature will easily trump the elections.

While it is somewhat of a good thing that "the public" is finally coming around to paying attention to the environment and wanting to brag about how green they are (most often when they are not even close to being green), I believe it is creating unintended negative consequences for our country (higher tax rates, bigger government, more sluggish bureaucracy, mis-directed resources — and fewer people surviving).

The most interesting statements that I have read thus far regarding the so-called "debate" about global warming/climate change (excluding Al Gore's and John McCain's claim that the "debate has ended") are ones by George Will, "Interesting — is it not? — that no one considers it necessary to insist, "the debate has ended" about whether the Earth is round. People only insist that a debate stop when they are afraid of what might be learned if it continues." Cogitate further on George Will's statement whilst you prepare to say good-bye to the entire State of Florida and look for beachfront properties in Yuma, Arizona and Austin, Texas.

In America, we are in the midst of another presidential election campaign; we know that one candidate will "survive", and we know that the climate will change no matter what we do (just like it has been doing for about the last 4.5 billion years). But if you believe what many of the presidential candidates are saying to the American/World public, we will soon face disasters beyond our wildest imaginations if we don't act NOW to stop global warming and do exactly what their political platforms say we must do.

David's Recommendation #2008-01: Let's spend more of our time and money doing things that really matter, and let's solve the real societal problems that exist on the planet today (i.e., relying on the scientific method to help people survive), rather than relying on junk science and political consensus and wasting precious resources fussing-around with horrible things that *might* happen.

David's Recommendation #2008-02: Let's create JEMA's "children" as productive actions, with new Journals in every State, including an organized fight for more science and math education, and well-orchestrated pushes for government policy decisions based on strong environmental science, instead of on weak, blow-with-the-wind political consensus, hysteria, and celebrity-mouthed mass-media-driven sound-bites. After all, dinosaurs are out there in our future depending on us to bring them back from extinction.

David L. Kirchner is owner and founder of Basin & Range Hydrogeologists, Inc. He can be reached at 602-840-3333, or by email at kirchner@basin-and-range.com.

Can You Repeat That?

Importance of Hearing Conservation
Continued From Pg 7

employees are subjected to sound exceeding those listed in table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table".⁴

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES⁴

Duration per day, hours	Sound level dBA
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

Footnote (4) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C(1)/T(1) + C(2)/T(2) + \dots + C(n)/T(n)$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

Historically, research and field data clearly show that exposure to excessive noise sources or impulse noise sources in the workplace can deteriorate the physiological and psychological health of the individuals exposed. Once the inner ear cells are damaged, human communication is compromised leading to a decrease in the employees' capability to perform job functions safely and effectively. Ultimately the loss of hearing can lead to serious health problems and higher insurance costs to the company and out of pocket expense for the employee. OSHA penalties listed in Section 17 of the OSHA act of 1970 include an intense investigation, and there are penalties which range from \$1,000 to \$70,000 with possibilities of jail time for each infraction of the standard.



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3 Raichel, Daniel *The Science and Applications of Acoustics* NY, New York: Springer-Verlag Inc, 2000.

4 "Occupational Noise Exposure - 1910.95" Occupational Health and Safety Administration U.S. Department of Labor http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STAN DARDS&p_id=9735 Jan. 15, 2008

"National Hearing Conservation Association" <http://www.hearingconservation.org/default.html>

Ezra Blackwell is Senior Staff Scientist in the Acoustics division of LFR Inc. He has a degree in Acoustics from Columbia College Chicago. He has owned an acoustical consulting company in Chicago and has been involved with many noise studies in the private sector.

LFR Inc. provides health and safety and acoustical engineers with experience in OSHA compliant hearing safety plan conception. Services include site assessment, data collection, analysis and mitigation reporting for commercial and industrial companies. For more information contact: Michael Burrill, Director of Acoustics at 760-294-2746 or mike.burrill@lfr.com.



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news briefs

ADEQ Withdraws Proposed Draft Haz Waste Permit for Mesa Facility

❖ ADEQ Director Steve Owens announced recently that the department is withdrawing a proposed draft hazardous waste permit for Talley Defense Systems' Mesa facility and that the department is giving close scrutiny to Talley's request to burn waste materials at the facility.

Owens said that the draft hazardous waste permit was being interpreted inaccurately as giving Talley permission to burn large quantities of waste materials at the facility, even though ADEQ has strictly limited any such burns under a separate air quality permit.

"The draft hazardous waste permit doesn't determine whether the company can burn waste at the Mesa facility," Director Owens said. "Burns at the facility are controlled by a very tough air quality permit, not the hazardous waste permit."

Owens also pointed out that Talley's

current air quality permit is set to expire next month and that ADEQ has advised the company that the department is not likely to allow any burns in the future.

"Talley actually has not burned any waste at the site for more than a year," Owens said, "and we told the company that we don't believe that any future burns can be justified."

There are better ways to deal with waste material generated at the facility, including shipping it off-site for treatment or disposal. We are committed to protecting the health and safety of the residents in the area."

Owens added that Talley also has committed to ADEQ to submit a plan for investigating and cleaning up perchlorate contamination in the soil and groundwater at the facility. "We have made clear to Talley that they have to deal with this," Owens said.

Talley makes weapons and propellant airplane escape systems for the U.S. military at the Mesa facility. When the Talley plant was constructed in the 1960s, the site was far removed from any residents in the area. In recent years, however, subdivisions have been constructed closer to the plant as Mesa has expanded northward.

Clear Creek Associates Names Three Principal Hydrogeologists

❖ Clear Creek Associates recently announced that Mike Alter, Don Hanson, and Tom Suriano have been named Principal Hydrogeologists.

Michael L. Alter, R.G., joined Clear Creek Associates in 1999 and has 13 years of experience consulting on environmental and water resources projects. He has a B.S. degree in Geology from Virginia Polytechnic Institute and an M.S. degree in Geology from Arizona State University. He manages the Tucson, Arizona office.

Donald P. Hanson, R.G., joined Clear Creek Associates in 2000 and has 24 years of experience consulting on environmental and water resources projects. He has a B.S. degree in Geology from Northern Arizona University. He is based in Scottsdale.

Thomas R. Suriano, R.G. joined Clear Creek Associates in 2006 and has 22 years of experience managing environmental and water resources projects. He has a B.S. in Geosciences from the University of Arizona and is based in Scottsdale.

Clear Creek Associates added, "As Principal Hydrogeologists, these individuals have been given the authority and responsibility to represent Clear Creek Associates in all technical, contractual, and business matters. All three are excellent consultants and business managers and have contributed significantly to Clear Creek Associates' recent success". Visit the company website at www.clearcreekassociates.com.

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Intel Corporation of Chandler, AZ Honored with 2007 Water Efficiency Leader Award

✦ The U.S. EPA honored Intel Corporation, of Chandler, Ariz., and the Santa Clara Valley Water District, of San Jose, Calif., with the 2007 Water Efficiency Leader award recognizing their efforts in reducing, reusing and recycling water, EPA Region 9 announced recently.

"We applaud these winners for saving water, energy and money for America's families and communities," said Benjamin H. Grumbles, the U.S. EPA's assistant administrator for water. "They're proving innovative technology and environmental stewardship can help conserve our country's greatest liquid asset."

Located in Chandler, Intel's Ocotillo Campus conserves

approximately 4 million gallons of water daily through three key programs:

- The Reverse Osmosis Recharge Facility, established in conjunction with the City of Chandler, treats wastewater to drinking water standards before recharging the ground-

water supply. In 2006, 3 billion gallons of drinking water were returned;

- POTW Effluent Reuse provides treated wastewater for scrubbers, cooling towers and landscape watering. In 2006, 825 million gallons of water were reused;

- Internal Water Reuse Projects supply reclaimed wastewater, rather than fresh city water, to innovative facilities systems. In 2006, Intel saved 530 million of gallons of water using this approach.

The Santa Clara Valley Water District is the water management agency for Santa Clara County, serving 15 cities and 1.7 million residents. Through multiple water efficiency programs, the Santa Clara Valley Water District saved, in 2006 – 2007, 55,000 acre-feet of water, some 18 billions gallons of water – 12% of the County's total annual water use.

The EPA's Water Efficiency Leader Awards fosters national water efficiency. Winners were chosen by a panel of national water experts and based on three criteria: leadership, innovation and water saved.

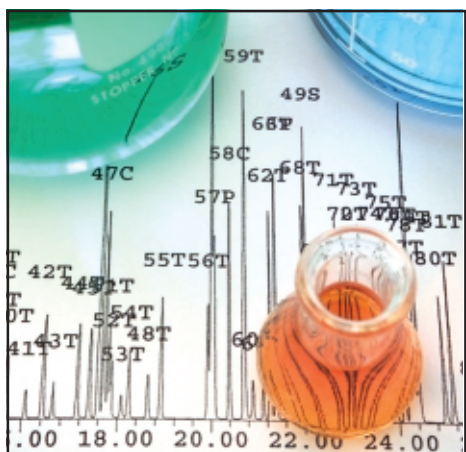
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A Sales & Marketing Plan: Who Needs It?



The day-to-day activities of salespeople can be chaotic, to say the least. Responding to client requests, addressing service or delivery issues and dealing with internal operations can result in a reactive work environment that distracts sales people from their ultimate goal: bringing in new business. Without clear vision from management, including measurable goals and milestones and a solid tactical plan, it is easy for daily demands to obscure the bigger picture, even if the sales effort appears effective in the short term. What I am referring to here is the need for a Sales and Marketing Plan.

Sound simple? It can and should be. So, why is it that so few organizations actually have one? Even when management has the foresight to prepare a plan and direct the sales force to follow it, circumstances change, rendering it stale within months. To this, I say "embrace the chaos!" Translate ever-changing business conditions into the driver of your plan. Use the shifting dynamics of your business as a source of market information and periodically adapt your sales approach to accommodate. I am not suggesting a flaky plan that becomes obsolete every quarter, but one with clear long-term goals and the flexibility to adjust how you'll get there.

Let's say your company is interested in developing a new service line. Since this is new territory, the most effective tactics and outcomes of dedicated efforts are undetermined. As a team, agree on 5 to 10 prospects with good potential. Establish a strategy for each that includes research, marketing communications, sales calls, etc., to be conducted over the next month or two. Be specific and make dedicated assignments with realistic time frames for completion (understanding that there will be distractions along the way). Set a date to evaluate progress. By this meeting, the team will have acquired information about what worked and what didn't. Use it to adjust your strategy, make additional assignments and schedule a time to reconvene and evaluate progress. Be diligent with your follow up and flexible in your tactics – and don't lose focus on the long term goal of winning business with these prospects. Similar plans can be put in place for other company goals, which as a whole, will establish a well thought-out and realistic Sales and Marketing Plan.

It's easy to say, "Put a Sales and Marketing Plan in place and follow up." I will be the first to admit that it can be extremely difficult to sustain. But it is an important component of any well-established and effective sales and marketing initiative, and a goal worth striving for.

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



Joe C. Holmes



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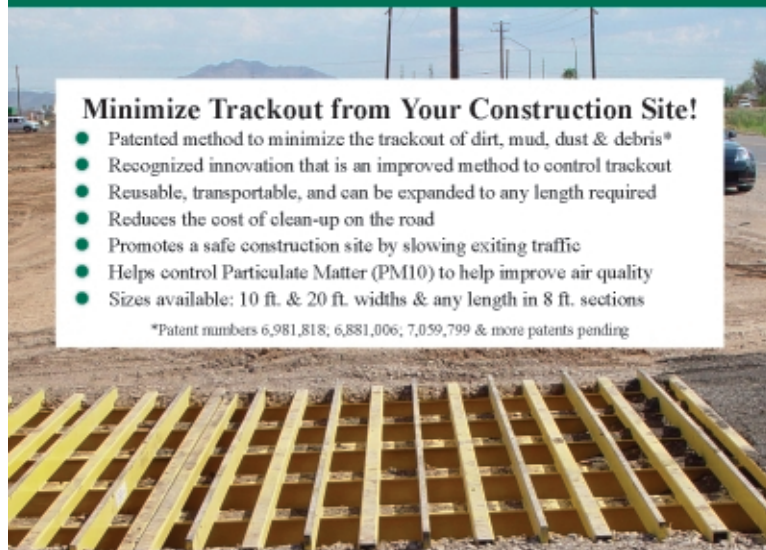


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