<text>

MAR

16 & 17

2017 Gatekeeper Regulatory Roundup

see ad pg 3

## REGISTER NOW! Feb 1, 2017 Air Quality Per

Air Quality Permit Compliance Assistance Seminar

Co-Hosted by Pinal County Air Quality Control Department and the Arizona Environmental Strategic Alliance. Register Online: AZALLIANCE.ORG

DEC / JAN 2016/17 Vol 14 No. 6

VOLKSWAGEN "DIESELGATE" MICHAEL C. FORD, ATTORNEY, PG 4

brishnist2 Pagistor P.C.U CIA9 briomrhia9 Verminist Verm



Equipped to Meet All of Your Blasting Needs.



Since 1990, MP Environmental Services has been an independently woman owned and operated transportation, demolition and remediation firm. With a fleet of more than 1,000 pieces of equipment, we are one of the largest independent transporters of hazardous waste in the Western United States.

## MP Environmental Services believes that the customer is key, and we are meticulous in serving you.

MPE provides industrial cleaning and environmental services in the Western United States. Our hydroblasting is capable of delivering water at pressures ranging from 1,000 to 40,000 psi.

- Cold Cutting
- Tank Cleaning
- Evaporator Tubes
- HAZ & NON-HAZ

- De-scaling
- Lancing
- Paint Removal
- Boilers







Consistently Achieving a Top Ranking



Arizona 3045 South 51st Avenue Phoenix, AZ 85043 T: 800 833 7602 • F: 602 278 2884

Southern California 3400 Manor Street Bakersfield, CA 93308 T: 800 458 3036 • F: 661 393 0508

Northern California 14312 Cacheville Road

Yolo, CA 95697 T: 800 245 9518 • F: 530 668 9334

Montana 3748 Green Acres Drive Billings, MT 69101 T: 406 652 5497 • F: 406 656 2509

Oklahoma 5621 Sooner Trend Road Enid, OK 73701 T: 580 233 2012 • F: 580 233 2065

Washington 3400 34th Avenue NE Everett, WA 98205 T: 800 442 6334 • F: 425 257 3128

Utah 1043 North Industrial Park Circle Grantsville, UT 84029 T: 877 800 5111 • F: 435 843 7805

Corporate 3400 Manor Street Bakersfield, CA 93308 T: 800 458 3036 • F: 661 393 0508

## 13<sup>TH</sup>ANNUAL GATEKEEPER REGULATORY ROUNDUP 2017 MAR 16 & 17





REGISTER NOW !

## CALL FOR SPONSORS CALL FOR EXHIBITORS

CONVENIENT LOCATION

DOUBLETREE

BY HILTON-PHOENIX - TEMPE

AT THE DOUBLETREE IN TEMPE!

CLOSE TO I-10, WITH EASY ACCESS

FROM MESA, TEMPE, PHOENIX, AND CHANDLER! MORE SPACE FOR ATTENDEES AND EXHIBITORS! The Environmental Professionals of Arizona (EPAZ) is hosting the 13th Annual Gatekeeper Regulatory Roundup Conference. The Conference is a great opportunity to learn the latest regulatory updates, share industry specific information, and network among your peers. INVITED SPEAKERS include: Arizona Department of Environmental Quality Director and Division Directors.

## **PROGRAM HIGHLIGHTS:**

Program Topic Tracks and Agenda will be posted on our website.

## Keynote Speakers:

Our Keynote Speakers will be announced soon. Check our website for updates!

## Sponsors:

Sponsorship opportunities are available at all levels: Break: \$450; Breakfast: \$650; Lunch: \$1,750; Corporate: \$2,250; Premiere: \$3,250; Reception: \$1,000; Wi-Fi: \$1000. Visit our website for more details. Sponsorship Coordinator: Emily Vanaskey, 602-708-8233, evanaskey@esclabsciences.com.

## **EXHIBITORS**

The Conference is a great way to continue those relationships you've built over the years, and a wonderful way to meet new clients! Standard Exhibit Booth (Table Top 6-foot space) \$775, Large Exhibit Booth (10-foot space) \$925, both include 2 full conference registrations. Save \$50 with the Early-Bird discount until February 11, 2017.

Early Bird Registration Rates Available Through March 3, 2017. EPAZ members receive Member Rates.

REGISTER

Full Conference: Single-Day: Lunch Only: Member Rates \$230 (\$210 Early Bird) \$185 (\$165 Early Bird) \$75 Non-Member Rates \$400 (\$370 Early Bird) \$355 (\$325 Early Bird) \$100

DOUBLETREE, 2100 SOUTH PRIEST DRIVE, TEMPE, AZ 85282 CONTACT US AT: 602-619-6295 OR BY EMAIL AT: GRRCHAIR@GMAIL.COM



2010 VW Golf TDI With Defeat Device Displaying "Clean Diesel" at a US Auto Show. Photo licensed under Creative Commons, provided courtesy of Mariordo Mario Roberto Duran Oritz, Wikimedia.org.

### VOLKSWAGE ESELGA

SHOCKING TO ENVIRONMENTAL PROFESSIONALS. PARTICULARLY "THOSE OF US WHO WORK IN THE MOBILE SOURCE COMPLIANCE AND ENFORCEMENT AREA".

Attorney

The headlines generated by the Volkswagen emissions scandal continue to amaze the environmental community and the general public, both here and abroad. The events are shocking in part because they involve a household name in the auto industry, and a company that has been longregulated by EPA's mobile source emissions requirements. In the U.S. alone, 600,000 supposed "clean diesel" vehicles it turns out are equipped with hidden "defeat device" software that allowed the models to pass EPA emissions tests, but actually emit many times the allowable pollutant limits while in use. Hundreds of lawsuits have been filed by citizens, states, and governments all over the world, and billions of dollars in settlements have been agreed to thus far. The litigation will go on for years to come, and provide a comfortable retirement for many lawyers as well.

Perhaps when the company thought the news could not get any worse, in early January, the FBI made the surprise announcement that it had arrested Oliver Schmidt, one of the company's German engineers and managers, and charged him with criminal violations of the Clean Air Act, conspiracy, and wire fraud in connection with the scandal. Schmidt was in a Miami airport enjoying the last few minutes of his vacation (and possibly his freedom, as it may turn out), about to board a flight back home to Germany, when the feds swooped in. He appeared before a judge a few days later in Detroit sporting some

Michael C. Ford new optional accessories - a jail uniform and shackles - and was ordered held pending a later hearing. Unfortunately for him, this is not "fake news," and this development should send a shiver down the lederhosen of any environmental manager or company representative whose responsibility includes compliance with U.S. environmental laws, or signing certification statements submitted to regulatory agencies.

> The allegations are egregious - Schmidt was intimately involved in the decision to develop and install the

defeat device software back in 2006, when his engineering group realized it was unable to develop an engine to meet EPA's emissions standards, and faced being shut out of the U.S. market. To compound matters, once the excess emissions came to the attention of EPA and CARB in 2014, Schmidt conspired with his engineering group colleagues to attempt to conceal the existence of the software from the regulators, while ostensibly working with the regulators to find the cause of the excess emissions.



VW ENGINEER OLIVER SCHMIDT IN HIS BOOKING PHOTO FROM THE BROWARD COUNTY SHERIFF'S OFFICE

(Interestingly, and somewhat ironically, it was not EPA or CARB that discovered the excess emissions in the first place, but rather a non-profit called the International Council on Clean Transportation, led by an engineer named ... Mr. German). The Sargent Schultz defense strategy was allegedly presented to and the feds will vigorously pursue criminal prosecution. subsequently supported by VW's upper management.

Perhaps unsurprisingly given Schmidt's arrest, a few days later, 5 other shoes dropped as the feds announced the indictment of Schmidt's oom-pah band of co-conspirators. And to-boot, these charges include allegations of document destruction and obstruction of justice. Whether they can be extradited from Germany to the US to face these charges remains to be seen. Meanwhile, VW announced that the company had settled its own set of criminal allegations for the tidy sum of 4.3 billion dollars (with a "b"!), and guilty pleas to charges of violating the Clean Air Act, obstruction of justice, and importing goods using false statements.

This scandal is particularly shocking for those of us who work in the mobile source compliance and enforcement area. For the last decade or so, EPA has focused intense enforcement scrutiny on mobile sources, particularly those regulated engines and equipment manufactured imported from China by relatively small, lesser-known grey market manufacturers. The big, well-known players were assumed to be ahead of the curve for regulatory compliance purposes, and limited enforcement resources were deemed better spent on forcibly educating the less sophisticated players. The bulk of these products have been off-road vehicles and equipment, such as ATVs, UTVs, off-road motorcycles, generators, and lawn and garden equipment, but all regulated engines are subject to a similar emissions regulations and certification program under the Clean Air Act. The typical violations have been relatively rudimentary and caused by a lack of an understanding of the applicable regulations or EPA's interpretation thereof.

EPA mobile source enforcement focus has caught numerous U.S. businesses off-guard, particularly in the distribution and retail sectors, as EPA has often chosen to pursue U.S. companies involved in the distribution of these products, rather than the Chinese manufacturers, due to the difficulty often encountered in pursuing Chinese manufacturers with little to no physical presence in the U.S. Some fly-by-night manufacturers have simply abandoned their small, leased office space at the first sign of trouble from EPA, rather than face the music. A number of U.S. retailers have been unpleasantly surprised to learn not only that the products they purchased were non-compliant with EPA and/or CARB standards, but that they themselves could be held responsible as if they were the manufacturer! More than one U.S. company has been driven out of business by the costs of defending EPA's aggressive enforcement actions triggered by failures of the overseas manufacturers, where the issues were of a magnitude far less serious than the current allegations against Volkswagen.<sup>1</sup>

The VW case illustrates that the feds will pursue foreign actors for violations of EPA emissions requirements, at least where the allegations are severe enough to warrant criminal prosecution. The criminal liability standards for environmental laws are notoriously low, generally only requiring "knowing" conduct, but consciously and intentionally conspiring to break the law, and then effectively lying directly to the regulators' faces, as it is alleged VW did, is a virtual guarantee that

EPA also seems to be more vigorously pursuing foreign manufacturers for civil violations as well. In late December, the Environmental Appeals Board released a decision affirming a \$1.5 million penalty against two Chinese manufacturers for importing or selling 22,000 noncompliant motorcycles and recreational vehicles. The companies originally defended the allegations but at some point in the proceedings gave up and stopped responding, and a default order was entered against them.

The Appeals Board decided on its own to review whether EPA had properly served the defendants with its complaint, and properly calculated the proposed penalty under its mobile source penalty policy. The Board, without the Defendants even defending themselves at this point, essentially upheld EPA's prosecution of the case and the substantial penalty against the two Chinese companies. It remains to be seen whether the defendants will actually pay the penalty, or play hard to get. However, the Board's support of the penalty policy calculations under its mobile source penalty policy should only embolden EPA's ongoing enforcement efforts, as this particular penalty policy can be manipulated to produce extremely high penalty numbers depending on an array of factors that are left within EPA's discretion. And as the VW case illustrates, the penalties in criminal cases can be ridiculously high, as can the other costs of noncompliance.

The smaller players in the regulated engine industry should resist any VW- induced schadenfreude. I expect mobile source emissions enforcement to continue full speed ahead under the Trump administration, against not only the household name car manufacturers, but also the unknown small and recreational engine manufacturers, and their US distributors and retailers. As these cases show, those who operate in willful or even unknowing violation risk a car wreck of consequences.

#### **ENDNOTE**

Full disclosure: I was involved in representing defendants in two of the larger (pre-VW!) mobile source emissions cases in recent years, U.S. v. The Pep Boys- Manny, Moe & Jack and Baja, Inc. (https:// www.epa.gov/enforcement/consent-decree-pep-boys-manny-moe-jackand-baja-inc) and U.S. v. Tractor Supply Company, Inc. (https://www. epa.gov/enforcement/consent-decree-tractor-supply-inc).



Michael C. Ford Attorney

Michael C. Ford is an Environmental and Natural Resources Law Attorney with the Phoenix office of Snell & Wilmer L.L.P. His practice is focused primarily on regulatory compliance advice and enforcement defense. This article represents Mr. Ford's opinion and is for informational purposes only, and should not be considered legal or professional advice. He can be reached at 602-382-6288 or by email at mford@swlaw.com.



#### SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

Nicholas R. Hild, PhD.

## OREO COOKIES AND INFRASTRUCTURE SUSTAINABILITY

Several seemingly non-related events have been in the news lately that should pique the interest of environmental professionals. In particular, these "events" provide teaching lessons for the classroom as well as for professionals whose jobs entail providing their companies with real world solutions that are sustainable.

The first "event" is actually not an event at all but rather a recognition that our infrastructure---highway systems, bridges, electrical transmission 'systems' and our in-ground water and wastewater piping (and allied treatment facilities), are falling apart. Unfortunately, every attempt by the Obama administration to at least begin to address funding a systematic plan to rebuild the public infrastructure has been thwarted by Congress. One of the 'events' calling attention to the nation's infrastructure dilemma was the failure of the Flint, Michigan lead piping potable water delivery system in late 2015. Politicians at the federal, state and city level claimed the problem was *not* caused by lead piping that has been in the ground for over half a century but, rather, by a decision made by Flint city managers to switch sources of water, allowing more corrosive water to be introduced into the lead piping distribution system thus, causing it to 'leach' lead into the city's drinking water.

The mere fact that the lead found in Flint's drinking water came from the piping should have raised red flags in most municipalities across the country because a large percentage of municipal water delivery systems in this country built before 1960 utilized lead pipe in their distribution systems. Yet, today, more than a year after the Flint 'event' no efforts to address this potential 'infrastructure' problem have been implemented.

Does anyone else see a teachable moment here?

As noted above, our nation's 'infrastructure' (private and public) includes many other 'systems' besides water and wastewater delivery. The general public is aware that our bridges (vehicles and railways), deteriorating interstate and intrastate highways, underground piping systems (oil, gas, water; etc.), government-owned buildings and neighborhoods built in the '30's with Roosevelt's WPA program are deteriorating and in need of repair. But most people don't realize what a problem we have in the private sector, especially in aging manufacturing facilities built with antiquated electrical, structural, and underground piping systems that are a threat to worker safety and the environment alike.

A second "event" that recently made headlines would seem not at all related to our dilapidating 'infrastructure' but let me explain. During the 2016 vitriol of the political debates that led up to a November election, our President-elect now says he wants to prioritize rebuilding our (public) infrastructure---bridges, electrical grid, highways), although no plan has been forthcoming for how that will be funded.

At the same time, he has indicated he wants to bring jobs back from countries where companies moved production operations to take advantage of cheap labor. What hasn't been a part of the dialog is the fact that, at least part of the reason companies do that may be related to cost/ benefit analysis of addressing their old US facilities' infrastructure problems. Many are operating in industrial sites that are 50 to a hundred years old. And, worse, they are literally falling apart. An example is the Chicago-based Nabisco Oreo Cookie plant which had decided to lay off 600 workers and ship the Oreo cookie factory to Mexico! When that became "news" in the run-up to the elections, every politician wanted a piece of it resulting in the President-elect promising that he will not let that happen.

Behind the headlines, what the politicians don't tell you is, Nabisco will still employ half as many people at the plant in Chicago where the 600 workers will lose their jobs, several other Nabisco plants in three other US cities will continue to produce Oreo cookies as well as other products. And even if the company had decided to upgrade the Chicago facility (instead of moving to Mexico), they would have automated that plant and laid off at least 300 workers anyway.

But here is the environmental connection that is not well publicized: the Nabisco facilities in Chicago are very old, and possibly requiring millions of dollars of infrastructure work (such as asbestos removal, underground piping replacement, and installation of automated production equipment, just to make the facilities safe for workers and the community alike. Thus, the decision to move jobs to Mexico had other factors driving it, which were much more complicated than just deciding to move where cheap labor offered the company a better profit potential. Significant and costly infrastructure upgrades in existing facilities, especially in very old and deteriorating industrial sites, are equally as important in any company's cost/benefit analysis.

But, here is the teachable moment: companies across the country have been making these cost-benefit decisions for the past 50+ years. And, they continue (as in this Oreo case) to be contemplated even as our economy seems to be recovering. So, if you are an EH&S professional working at a company that faces this critical cost/benefit decision in the near future, should it not be your primary job (and within your sustainability wheelhouse), to provide your company management with the best (and most sustainable) set of infrastructure options to keep those jobs right here in the US?

Our infrastructure (public and private) has been deteriorating at a rapid pace. Jobs have been shipped overseas for decades and no amount of political posturing will bring them back any time soon. If you really dig into the details (as good sustainability professionals always are prepared to do), these two examples of 'infrastructure events' may share some common elements (i.e. water/waste piping, asbestos, old buildings with corroded structural issues, cyber-security needs), that can be addressed in a realistic plan that could work for US businesses as well as political fiefdoms.

The pledge of the new President to address the nation's public infrastructure problems and actually make that a priority for the new administration is encouraging. If Congress will agree to fund these (public) infrastructure programs properly, it presents a great opportunity for EH&CS professionals who work for contractors and engineering firms that specialize in infrastructure to once again make a difference in reducing environmental impact of antiquated and failing infrastructure systems.

So, let us use these teachable moments to inspire students, environmental professionals, and employers throughout the US to find ways to train workers how to rebuild the nation's infrastructure, public and private alike, while also incentivizing businesses to go the extra mile and keep those plants and jobs here. If we don't do this soon, our politicians will continue to be in denial and our lack of action now, will be a huge burden on our children's, children's, children.

Nicholas R. Hild, PhD., is an Emeritus Professor and Sustainability Scientist in the College of Technology and Innovation and the founder of the Environmental Technology Management program at Arizona State University. Dr. Hild has extensive industrial environmental engineering and management experience as well as continuing to be a consulting environmental engineer for the past 40+ years. Reach him at www.worldsleadingexpert.com or email at drnick@asu.edu.

6 Journal of Environmental Management Arizona

## FROM THE EDITOR



▼his issue of the Journal, December/January 2016/17, completes our 14th year of publication! The Journal, as you may know, is a hard-copy print magazine provided free of charge to thousands of Arizona EH&S professionals six times per year. And although so many magazines have converted to digital-only over these past years, the Journal continues as primarily a print publication, with a digital archive of past issues on our website. I hope you have

enjoyed, and will continue to enjoy & value receiving Arizona EH&S information in the Journal!

If you have recently implemented an environmental or safety program, or completed a research project, and would like to share what you have learned with our readers please consider contributing an article. Give me a call or write to the email address below.

As always, thank you to our readers, our advertisers, and our authors/contributors!

Sincerely, Jim Thrush, M.S. Environmental Management Editor & Publisher 480-422-4430 x42 Email: jimthrush@cox.net

JOURNAL OF ENVIRONMENTAL MANAGEMENT ARIZONA

EDITORIAL Publisher & Editor, James Thrush, M.S. Env Mgs., jimhbushé const or 480-422-4430, SUBSCIBE: ehshomepage. com or 480-422-4430. RATES FREE to qualified EHS Professionals, others call. MAILING ADDRESS (NEW): JEMA, PO Box 51852, Phoenix, AZ, 55076, ADVERTISING 480-422-4430 v422. Published 6 times/part. Capyright ©2013 for JEMA, AU rights resred, LEGAL DISCLAIMER Information presented in JEMA originates from sources presunde to be accurate and complete. Due to the napidly changing nature of regulations and the law and our reliance on information provided by various sources, we make no warranty or guarantee concerning the accuracy or reliability of the content of JEMA. Raders are encouraged to contact authors, agencies, and advertiser directly for verification) charification. Content for informational purposes only, and should not be considered legal or professional advice. Consult your legal consul or wirronmental consultants for advice. WARNING Serious Legal, environmental, and drof sefty consequences can result from non-compliance with environmental and safety regulations and standard safety, environmental, and professional practices.

COVER PHOTO: "CURVED-BILL THRASHER", PHOTO TAKEN AT ESTRELLA MOUNTAIN PARK, FEBRUARY, 2016. PHOTOGRAPHER: WENDELL A. THRUSH

MAILING ADDRESS. ALL MAIL TO THE JOURNAL SHOULD BE SENT TO: JOURNAL OF ENVIRONMENTAL MANAGEMENT ARIZONA PO BOX 51852, PHOENIX, AZ 85076

### JOURNAL OF Environmental Management ARIZONA CONTENTS

December / January 2016/17

Volume 14 Number 6

**ARTICLES, DEPARTMENTS, & COLUMNS** 

- 4 VOLKSWAGEN "DIESELGATE" MICHAEL C. FORD, ATTORNEY.
- 6 SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT **OREO COOKIES AND INFRASTRUCTURE** SUSTAINABILITY NICHOLAS R. HILD. PHD.
- 7 **FROM THE EDITOR**
- 8 IT'S ALL ABOUT CHEMISTRY THANK GOODNESS FOR ORPHAN DRUGS LARRY OLSON, PHD.
- 9 **CROSSWORD CHALLENGE! RETURNS WITH A NEW EH&S PUZZLE!**
- 10 **News Briefs**
- 12 **ASSOCIATIONS PAGES**

ASSOCIATIONS NEWS AND UPCOMING EVENTS



SUBSCRIPTIONS are FREE to Qualified EH&S Professionals! Subscribe on-line at www.ehshomepage.com or call 480-422-4430 x42

If you have not renewed or updated your contact information within the past one year, PLEASE go online and use the Register Form to renew. Thank you!

## DO YOUR MARKETING PLANS INCLUDE **ADVERTISING IN THE JOURNAL?**

## **FIND NEW CLIENTS**

BY REACHING THOUSANDS OF POTENTIAL NEW CUSTOMERS WITH EVERY ISSUE

STAY VISIBLE

## SUPPORT THE COMMUNITY

KEEP YOUR MESSAGE IN FRONT OF POTENTIAL CUSTOMERS: WHEN THEY ARE READY TO PURCHASE. OR NEED YOUR SERVICE, THEY WILL REMEMBER

SUPPORT THE ENVIRONMENTAL. HEALTH & SAFETY COMMUNITY IN ARIZONA. IT PAYS!

FOR INFORMATION ON ADVERTISING IN THE JOURNAL CALL 480-422-4430 X42 OR EMAIL JIMTHRUSH@COX.NET



Larry Olson, PhD.

IT'S ALL ABOUT CHEMISTRY

## THANK GOODNESS FOR ORPHAN DRUGS

few weeks ago, my 19 month old granddaughter was visiting and was asleep in the crib when she awoke screaming and couldn't be consoled. Nothing seemed to calm her and she began to throw up a clear, bubbly liquid. At that point we headed for the emergency room at Good Samaritan. Within 30 seconds after a very astute ER nurse first saw her, she said, "I think she has been stung by a scorpion."

Our family was now experiencing a trauma that occurs about 8000 times a year in Arizona and maybe a quarter million times a year in Mexico. That seems like a lot, but actually it's not enough. Although there are many types of scorpions, the only one in North America whose venom can cause significant nerve damage or death in humans is the genus *Centruroides* or bark scorpions. Since most of bark scorpions in the U.S. are found in Arizona, these 8000 scorpion stings simply don't represent a large enough market to provide a profit for an American manufacturer. So until last August, just a couple of weeks before my granddaughter was stung, there was no FDA approved antivenin for scorpions. (Antivenins refer to a serum derived from animals).

On August 3, 2011 the FDA approved a drug called Anascorp as the first antidote to bark scorpion stings. It is used primarily in children because they receive a larger dose from a sting due to their lower body weight and so the effects are more dangerous to them. The drug was developed by a Mexican company, Instituto Bioclon, and has been in use in Mexico for a dozen years. But it was not available in the U.S. until Dr. Leslie Boyer, Director of the Venom Immunochemistry, Pharmacology and Emergency Response (VIPER) Institute at the University of Arizona's College of Medicine heard about it and arranged for clinical trials in Tucson. She published the results in

NOTE: Dr. Olson will return next issue with a new column. For this issue, we are pleased to reprint one of Dr. Olson's many excellent past columns. This article is from the Oct./ Nov. 2011 Issue of JEMA. Editor

the *New England Journal of Medicine* in 2009. Additional studies at more than two dozen Arizona hospitals have confirmed the efficacy of the drug in reversing the effects of the scorpion sting within a matter of hours. As the nurses told us that night, "it's a miracle drug."

Anascorp received priority review by the FDA Office of Orphan Products Development which focuses on drugs and biologics for treatment of rare diseases that affect fewer than 200,000 people in the U.S. In these circumstances it is difficult for companies to recover the costs of developing and marketing a new drug. Since 1983, the program has helped bring more than 350 new drugs or treatments to the market, compared with less than ten in the previous decade. According to Dr. Boyer, this is the first time that the FDA has approved a drug that was completely developed in a Latin American country.

Prior to Anascorp the only treatment for scorpion stings was an antivenin made from goats by an ASU microbiologist named Marilyn Bloom. She took it upon herself to make enough for Arizona hospitals, but it was never approved by the FDA because it was not sold outside of the state. When she retired in 1999, the supply ran out.

Anascorp differs from the Bloom antivenin because it is made from horses that have been progressively injected with scorpion venom. They receive a first dose equivalent to one half of a scorpion sting. By the end of six months they receive the equivalent of 100 stings. The horses respond by producing antibodies specific to the scorpion venom. Blood plasma from the horses is further treated to separate proteins that can cause allergic reactions and this distinguishes Anascorp from Bloom's goat antivenin that had significantly more side effects.

Does it work? By the time we had received clearance for our granddaughter to receive Anascorp and she had been transported by ambulance to Phoenix Children's Hospital where the drug was available, she was experiencing the full impact of the scorpion venom. Within 30 minutes after infusing the drug, all of her symptoms had been resolved and within an hour she was asleep. The nurses were right. It is a miracle drug.

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 environmental management. He can be reached at 480-727-1499, or by email at Larry.Olson@asu.edu

## CROSSWORD CHALLENGE:

THEME: HAZARDOUS MATERIALS, SAFETY, & ENVIRONMENT

#### Across

- 2. Highly corrosive base.
- 6. Body of flowing contaminated groundwater.
- 8. Rootless plants growing in sunlit waters.
- Used as an alternative automotive fuel, derived from grain and corn, usually blended with gasoline.
   Man-made watercourse.
- A \_\_\_\_\_ sample, usually of water, collected at a particular time and place.
- 16. Good soil
- 18. These AQ standards regulate 188 haz air pollutants from particular industrial sources.
- 19. Untreated, as in untreated sewage.
- 21. General conditions in the environment
- 26. A liquid or solid material used to dilute or carry an active ingredient.
- 27. Type of well that flows up like a fountain from aquifer.
- 28. A corrosive solution with a pH of less than 7.
- 29. City where 160 nations agreed to reduce green house gas emissions.
- 31. Unit of light measurement.
- 32. SARA Tittle III
- 36. A drum is this when contents removed using common practices, and certain requirements met.
- 38. Particles between .05 and 2.0 MM diameter.
- 39. O2 21%, N2 78%.
- Slope of land or water or streambed surface.
   Form of H2O found on plantlife at lower
- temperatures.
- 45. Home to bees.46. A form of oxygen that can be "good" or
- "bad" depending on where it is found. 47. This type of facility requires a permit under
- the hazardous waste programs.
- Generates 2200 lbs or more of haz waste per month or 2.2 lbs of acutely haz waste / month.
   Quantity of heat.
- Not chronic, this brief type of exposure to a toxic substance may result in severe biological harm or death.
- Radioactive dust particles that settle after denotation of nuclear device.
- 55. Pesticide banned in the US in 1972 because of its persistence in the environment and accumulation in the food chain
- 56. Refers to a thin area of ozone.
- 59. Under environmental law \_\_\_\_\_\_ liability for a violation means you are automatically guilty and liable, intent does not matter.
- 60. Synthetic washing agent used to remove dirt and oil, can contribute to algae growth in bodies of water.
- 61. Area of water extending into land from lake or sea.
- 63. Form of H20, can affect vacation plans.
- 65. A \_\_\_\_\_ pollutant is one of 6 air pollutants for which EPA has established standards.
- A tough, environmentally indestructible plastic that releases hydrochloric acid when burned.
- 68. Attachment of substance to surface of another.

### Down

- 1. The "I" in EIS, Environmental
- Statement.
- 3. The mineral content of a product remaining after complete combustion.
- 4. This structure impedes flow of water.
- 5. California Env. Quality Act
- 7. Vertical structural element.
- 10. Has two meanings but in environmental field its underground
- 12. Submerged offshore ridge or mound of sand or gravel.
- 14. Submarine depression.
- 15. Describes alkaline water containing dissolved salts.
- 17. Ether compound used to raise oxygen content of gasoline.
- 18. Compound usually associated with fertilizers.
- 20. The underside or belly.
- 22. Wasterwater, treated or untreated, that flows out of a treatment plant or sewer.
- 23. Radioactive, inert gas formed by decay of radium atoms in soil or rocks.
- 24. Remove water from wastes, soils or chemicals.
- 25. Beak.

- 30. Liquid or gas used to dissolve another substance.
- 33. A measure of radioactivity.
- 34. This container gets its name because of it's location in the ground.
- 35. Neutralizes acids, pH >7
- 37. Tetrachloroethylene
- 40. Animal and plant life of a particular region.42. A low wall than acts as a barrier to prevent
- 42. A
  - a spill from spreading. 43. Shallow pond.
    - 48. Fine or intermediate sized mineral particles.
    - 50. Weight of biological matter.
    - 52. Small tank or storage facility used to store water for a home or farm.
    - 54. Gray, brittle, highly poisonous metal.
    - 55. Draw off the upper layer of liquid after the heaviest material has settled.
    - 57. Wearing away of earth's surface by water, wind, ice, etc.
    - 58. Superfund.
    - 62. A site used to dispose of solid waste witout environmental controls.
    - 64. A facility will strive to comply with
    - regulations to avoid receiving one of these. 66. Reference Dose

		_						_	_	_	_	-	-						_	-	_	_	_		_
n					1							2	3							4				5	
		6						7												8					
											9						10								_
er		-	-	11	-														12			13	_		14
		15	-		-			16			17				1.0										
	19																								
	19																								
						20			21				22					23			24		25		
		26																27							
1.															28										
			29			-			30														31		
		-	-			-																_			
			32		33						34								35		36			37	
			-																		~			<i></i>	
											38								39						
	40			41			42										43						44		
																	45								
	46				-				47	40		-			49										_
lly							-	-															50		
	51	52											53	54											
vth								55														56			57
πn								55														56			57
												58													
	59										60														
u-							61														62				
s.		63			64							65					56								
		-																							
en				67												68									<u> </u>
r.				<i>•7</i>												0.8									

## NEWS BRIEFS

#### EPA TO HELP APACHE JUNCTION, AZ, MEET SUSTAINABILITY GOALS, INCREASE INFILL

✤ The U.S. Environmental Protection Agency announced recently that 25 communities across the nation will receive technical assistance to pursue development strategies that advance clean air, clean water, economic development and other local goals. In Arizona, the City of Apache Junction will receive assistance to encourage infill projects for the revitalization of the town's center.

"We are thrilled that the City of Apache Junction will benefit from this program," said Alexis Strauss, EPA's Acting Regional Administrator for the Pacific Southwest. "By providing technical assistance, our Building Blocks program will help local leaders guide their communities towards a prosperous, more sustainable future."

EPA's technical assistance will complement the city's existing work to revitalize its urban center through infill development. Such projects include: street and landscaping improvements, public art, commercial rehabilitation programs, revised development fees, incentives for new

development, zoning and conditional use for undesirable lots, and community initiatives for revitalization efforts.

EPA selected this year's recipients from among 76 applicants to the Building Blocks for Sustainable Communities program. In 2017, EPA staff and national experts will conduct one to two-day workshops to help the community address development-oriented issues.

Nationally, the agency is offering five assistance tools this year: Green and Complete Streets, Equitable Development, Planning for Infill Development, Sustainable Strategies for Small Cities and Rural Areas, and Flood Resilience for Riverine and Coastal Communities. EPA selected communities located in 19 states: Skykomish, WA; Willamina, OR; Bishop, CA; Apache Junction, AZ; Questa, NM; Raton, NM; Pueblo, CO; Pine Ridge, SD; Randolph, NE; Brownsville, TX; Logansport, LA; Acadia Parish, LA; Winona, MN; Detroit, MI; Fairview Park, OH; Manatee County, FL; Miami, FL; Myrtle Beach, SC; Kingston, NY; Pocomoke City, MD; Baltimore, MD; Central Falls, RI; Wareham, MA; Hartford, CT; and Lenox, MA.

Since 2011, the Building Blocks for Sustainable Communities program has provided assistance to 130 communities in 41 states. As a result of this assistance, community groups, local governments, and tribal governments across the nation have increased their capacity to successfully implement smart growth and sustainable approaches that protect the environment, improve public health, create jobs, expand economic opportunity, prepare for the effects of climate change, and improve overall quality of life.

More information on the Building Blocks program: https://www.epa.gov/smartgrowth/buildingblocks-sustainable-communities.

#### EPA ORDERS NAVAJO TRIBAL UTILITY

AUTHORITY TO STOP SEWAGE SPILL, NOTIFY PUBLIC

✤ The U.S. Environmental Protection Agency recently issued a Clean Water Act compliance order to the Navajo Tribal Utility Authority to address an ongoing sewage spill from pipes leading to the Shiprock Wastewater Treatment Facility. The sewage spill is discharging around, under, and directly into the San Juan River.

On December 6, NTUA notified EPA of a pipe breach at the Shiprock Lift Station, part of the Shiprock Wastewater Treatment facility, that caused a continuous raw sewage spill. The lift station usually handles about 200,000 gallons of sewage daily. To date, NTUA has been unable to calculate the amount of sewage entering

## IOURNAL OF Environmental Management ARIZONA SUBSCRIPTIONS are FREE to Qualified EH&S Professionals! Subscribe on-line at www.ehshomepage.com or call 480-422-4430 x42

If you have not renewed or updated your contact information within the past one year, PLEASE go online and use the Register Form to renew. Thank you! the river. The utility has been sampling the river above, at, and downstream from the spill since December 14 and is actively trying to replace the pipe.

The EPA order requires NTUA to complete the pipe replacement by December 31, sample and monitor the river water for evidence of sewage contamination, prohibit public access, notify the public of the spill and keep the EPA informed of all activities pertaining to the spill.

EPA has been in communication with the Navajo Nation EPA and the utility regarding clean-up activities and possible human health impacts.

For more information on the EPA's National Pollution Discharge Elimination System program, please visit: https://www.epa.gov/npdes.

OSHA ISSUES FINAL RULE UPDATING WALKING-WORKING SURFACES STANDARDS AND ESTABLISHING PERSONAL FALL PROTECTION SYSTEMS REQUIREMENTS

The U.S. Department of Labor's Occupational Safety and Health Administration issued on November 17, 2016, a final rule updating its general industry Walking-Working Surfaces standards specific to slip, trip, and fall hazards. The rule also includes a The final rule's most significant update is allowing employers to select the fall protection system that works best for them, choosing from a range of accepted options including personal fall protection systems. OSHA has permitted the use of personal fall protection systems in construction since 1994 and the final rule adopts similar requirements for general industry. Other changes include allowing employers to use rope descent systems up to 300 feet above a lower level; prohibiting the use of body belts as part of a personal fall arrest system; and requiring worker training on personal fall protection systems and fall equipment.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education, and assistance. For more information, visit www.osha.gov.

Continued on page 13

new section under the general industry Personal Protective Equipment standards that establishes employer requirements for using personal fall protection systems.

"The final rule will increase workplace protection from those hazards, especially fall hazards, which are a leading cause of worker deaths and injuries," said Assistant Secretary of Labor for Occupational Safety and Health Dr. David Michaels.

"OSHA believes advances in technology and greater flexibility will reduce worker deaths and injuries from falls." The final rule also increases consistency between general and construction industries, which will help employers and workers that work in both industries.

OSHA estimates the final standard will prevent 29 fatalities and more than 5,842 injuries annually. The rule becomes effective on Jan. 17, 2017, and will affect approximately 112 million workers at seven million worksites.

## CROSSWORD CHALLENGE KEY

PUZZLE IS FOUND ON PAGE 9

				'I							c	A	υ	s	т	I	C		D				C	
	P	L	υ	М	E		W					s		2					A	L	G	A	E	
				P	111		A			'B	T	н	A	N	0	L			М				0	
		104	C	A	N	A	L									υ		B			G	R	A	14 E
	15 H			C			L	0	A	M				N	В	s	н	A	₽					1
R	A	W		т						т				I		т		R						1
	R				v V			A	м	в	I	E	N	т			R			D		B		6
	24 D	т	L	U	R	N	т			B		F		R			A	R	т	E	s	т	A	1
					N					1		F		A	c	т	D			W		L		Γ
		K	Y	0	T	0		sio S				L		т			0			A		L	υ	5
					E			0				U		Е			N			т				
		14 E	P	"C	R	A		L		34 U		E						B		ы Е	м	P	T	
			ń	U		1		v		an S	A	N	D					A	I	R		Ť.	c	f
В			41 G	R	A	42 D	I	E	N	T	-	T	1			es L		s	Ť.	1		44 D	E	1
I				I		I	Ē	N								"A	P	I	A	R	Y			F
0	z	0	N	E		ĸ		T	ŝ	D				to L	0	G	Î	c	-		1			T
т			1			E			I							0						В	т	1
A	10 C	U	т	E					L			F	A	L	L	0	U	т				I		T
	I		Ť.				D D	D	т			1	R			N		Ť.			34 H	0	L	1
	s						E				C.		s									М		1
s	T	R	I	с	т		C			et D	E	T	E	R	G	E	N	т				A		1
	E					*1 B	A	Y			R		N							a D		s		Ì
	R	A	T	ei N		-	N				"C	R	I	т	E	44 R	т	A		U		s		ľ
	N	1	Û	0			T				L		c	1	4.7	F	Û	-		M		Ť		1
	14		67 P	v	0		-	-		-	A		-		Å	D	s			p	-	I	0	1

## SSOCIATIONS 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.



AZ.ASSE.ORG

Arizona ASSE is on the move in 2017 with several Aevents that you will not want to miss. First, we are holding a Distracted Driving Summit at the Arizona State Capital Mall on January 25th. Several agencies and organizations will be on hand to draw attention to this important topic! FREE LUNCH will be provided so don't miss out. April 28th is National Workers' Memorial Day. We will be in the State Mall again to hear from several community and business leaders about the impact of workplace fatalities and the need to prevent them at all costs. Our Annual Safety Summit will be taking place at Arizona State University on May 12th. We will have speakers from around the nation and we expect an amazing attendance this year. For those looking to enhance their resume by achieving ASP or CSP certification, a study group is being developed with

online curriculum. Please log on to our website for more information on all of these events @ az.asse.org or contact me @ president@ az.asse.org for more information.



#### ARIZONA **ENVIRONMENTAL** STRATEGIC AZALLIANCE.ORG ALLIANCE

The Arizona Environmental Strategic Alliance, in partnership with Pinal County Air Quality Control Department, will host our annual Air Quality Permit Compliance Assistance Seminar on February 1, 2017, in Florence, Arizona. If your facility has an Air Quality Permit in Pinal County, or you are a consultant working with a regulated source, this seminar is for you! Speakers will include professionals with industry experience applicable to your situation, and experienced Pinal County Air Quality staff.

If you have not yet registered visit our website at

www.azalliance.org. If you are interested in working with the Alliance, or learning more about membership, visit our website or call our office for more information (480-422-7392).



#### JOIN THE JOURNAL OF ENVIRONMENTAL MANAGEMENT **ARIZONA'S ASSOCIATION PAGES**

If your organization would like to contribute an article to the Journal's Association Pages

give us a call at

480-422-4430 x42

There is no cost to particpate, and your organization's messages reach thousands of Arizona EH&S Professionals!



WWW.EPAZ.ORG

<sup>¶</sup>he 6th Annual Joint 📕 Holiday Mixer, held December 7th from 6 to 9

PM, at "The Newton" (300 W. Camelback Road) was a fantastic and enjoyable success!

A&WMA-Grand Canyon, AZAEP, AHS, ARC & EPAZ members co-hosted the event, joining with guests and interested environmental professionals for a holiday opportunity to celebrate our common goal -- to protect Arizona. Attendees were asked to bring non-perishable food items to be donated to St. Mary's Food Bank to help feed the needy. Food donations this year totaled 570 lbs, surpassing our last year's total of 416 lbs! Cash donations were also accepted, and between the mixer and EPAZ's 50/50 raffle on Dec. 8th, we donated \$326 in cash to the food bank. Thank you to everyone who attended and helped make this a great success!

Eight "Saguaro Sponsor" companies contributed \$250 each to help offset the costs of the mixer, including: AZTEC, Cascade Drilling, EcoPlan Associates, ERI, Jordan Hiser & Joy PLC, Logan Simpson, Republic Services, and Yellow Jacket Drilling. Thank you for your support!



# ARIZONAFORWARD ORG

#### UNITY NEEDED TO IMPROVE STATE'S ENVIRON-MENTAL OUALITY AND ECONOMIC VITALITY Te have more in common than you might imag-

ine. Sustainable growth issues facing Arizona's north, south and central regions are surprisingly aligned. That's why it's imperative we work together to improve the environmental quality and economic vitality of our cities and towns. For example, the health of our rivers - the Santa Cruz, San Pedro and Verde are critical to sustain habitat and wildlife, as well as the quality of life for residents. Flagstaff scientists at Northern Arizona University are connecting education, research and the community through health equity, biomechanics, astronomy and environmental sciences. Perhaps, the biggest issue of concern under study in Central Arizona is water – our most precious and threatened natural resource. These are just a few topics Arizona Forward covered in 2016. There's good reason all of us who have made Arizona our home should care about the health and wellness of our communities. To keep young people here, they need to perceive Arizona is among the best places in America to live, work, learn and recreate. Finding a high paying job is important but not the catch-all. People of all ages are drawn to community design that enhances physical, mental, economic and social well-being. Walkability, mixed-use development and access to shopping, restaurants and cultural amenities are key elements of vibrant places. Alternative transportation - biking and transit - are also quality of life indicators, as are adaptive re-use, shade and open spaces. It takes community and political will



#### UPCOMING EVENTS:

February 9, 2017 - Our monthly meeting will feature Kirk Craig & Hester Groenevelt, Geosyntec Consultants, presenting on "Quantitative Passive Soil Vapor Sampling for VOCs - Mathematical Model, Lab Testing and Field Testing Results." Meeting Sponsor: Geosyntec Consultants.

March 16-17, 2017 – 13th Annual Gatekeeper Regulatory Roundup Conference. See the advertisement in this issue on page 3.

April 13, 2017 - Monthly Meeting, Topic/Speaker TBA Meeting Sponsor: ERI.

EPAZ hosts monthly luncheon meetings on the second Thursday of the month from 11:30 AM to 1:00 PM at the

SRP PERA Club. For the most up to date information, event details and reservations please visit our website at www.epaz.org.



to create great places. That's what Arizona Forward is all about. For nearly 50 years, this organization has mobilized the state's business leaders and policymakers to leverage their collective power to influence how we best grow our communities, stimulate our economy and enhance our environment. Your zip code has a direct correlation to your health and wellness. Where you live directly impacts how long you live. Arizona Forward has presented three summits on Building Healthy Communities connecting community design and public health. The organization conceived Grand Canalscape, which the City of Phoenix is now designing. It will create a 12-mile continuous trail system along the Grand Canal from I-17 to the Phoenix/ Tempe border. The project is part of a larger regional trail and crossing project that will ultimately result in a continuous trail along the Grand Canal between Glendale and Tempe. The priority of green design and a shared ethic to protect natural resources in Arizona is further demonstrated in the nearly 100 entries Arizona Forward received in its 36th Annual Environmental Excellence Awards presented by SRP. Arizona now ranks ninth in the nation when it comes to citizens being physically, emotionally and mentally healthy, according to a Gallup Healthways Well-Being Index. Forbes recently named our state the best in the country for future job growth and second for population expansion. Money Magazine ranked Tucson among the best five U.S. cities for millennials and National Geographic has designated the Verde Valley as a geo-tourism mecca. Arizona Forward

members are setting the benchmark for promoting sustainability, conserving natural resources and preserving our state's unique environment Diane Brossart for future generations.



President

### NEWS BRIEFS

CONTINUED FROM PAGE 11

#### US EPA AWARDS MARANA UNIFIED SCHOOL DISTRICT \$465,000 FOR CLEANER SCHOOL BUSES

The U.S. Environmental Protection Agency recently awarded \$465,000 to the Marana Unified School District in Arizona to replace or retrofit 20 older diesel school buses. Funded through EPA's Diesel Emissions Reduction Act, the new and updated buses will emit less air pollution.

"Reducing exposure to diesel pollution particularly benefits children, as their lungs are still developing," said Alexis Strauss, Acting Regional Administrator for the Pacific Southwest. "This funding will improve air quality for students as they travel to and from school."

EPA has implemented standards to make new diesel engines over 90 percent cleaner, but many school buses with older diesel engines still operate. Older diesel engines emit large amounts of pollutants such as nitrogen oxides and particulate matter, which are linked to asthma, lung damage and other serious health problems.

Nationwide, 88 communities in 27 states will receive more than \$7.7 million in rebates through Diesel Emissions Reduction Act funding, resulting in 401 cleaner school buses. Applicants replacing buses with engine model years of 2006 and older will receive rebates between \$15,000 and \$25,000, depending on the size of the bus. Applicants also had the option of retrofitting school buses with engine model years between 1994 to 2006 with a Diesel Oxidation Catalyst plus Closed Crankcase Ventilation system to reduce toxic emissions. EPA will fully fund the cost of these devices up to \$4,000.

Since 2008, the Diesel Emissions Reduction Act program has funded more than 700 clean diesel projects across the country, reducing emissions in more than 70,000 engines.

For more information about this rebate program, including the complete list of 2016 recipients, visit http://www.epa.gov/cleandiesel/clean-diesel-rebates.





#### Registration begins at 7:30 AM Tucson Hilton East, 7600 E. Broadway Blvd. Tucson, AZ

For more information please contact Pat Hartshorne at phartshorne@scsengineers.com or Derek Koller at Derek.Koller@terracon.com

For sponsorship information please contact Frank Bonillas at Frank.Bonillas@tucsonaz.gov

EPA ANNOUNCES \$13 MILLION FOR

ENVIRONMENTAL IMPROVEMENTS ON TRIBAL LANDS IN ARIZONA

The U.S. Environmental Protection Agency announced recently \$13 million in funding for Arizona tribes to support environmental programs, drinking water and wastewater infrastructure and community education. The announcement was made at the 24th Annual Regional Tribal Conference in San Francisco.

"Tribes continue to make great strides in environmental protection and improving public health," said Alexis Strauss, EPA's Acting Regional Administrator for the Pacific Southwest. "This year, EPA is supporting water quality projects and water infrastructure for Arizona tribes with over \$8 million in funding."

> Approximately \$3.7 Continued on next page

#### News Briefs

CONTINUED FROM PREVIOUS PAGE

million was awarded directly to Arizona tribes to support a wide variety of projects including monitoring, watershed protection and restoration, water and energy efficiency, wastewater reclamation, and treatment systems. Another \$4.5 million will go to the Indian Health Service to support tribal drinking water and wastewater infrastructure, plant operator training and technical assistance.

Arizona tribes will use an additional \$4.7 million to continue tribal environmental programs, clean up open dumps and contaminated lands, develop programs to monitor, protect, and improve air quality, and conduct targeted community outreach and community education.

Among the results of EPA funding: Nearly \$1.5 million will fund the connection of two existing commu-



TRANSPORTATION & BIN SERVICES | REMEDIATION INDUSTRIAL SERVICES | WASTE MANAGEMENT



*Jetting* (Culverts, Pipes, Lines, Surface)

Cleaning & Decontamination (Tanks, Smart Pigs, Tools)



Phone: 888-444-7077 www.cti-az.com

### N. Weiss Associates, Inc.

Environmental Compliance Services

#### **Experience Counts**

Contact: Norm Weiss @ (602) 870-5504 Web Site: www.nweissassoc.com

nity drinking water systems, upgrade arsenic treatment. Treated drinking water from this project will serve 73 tribal homes on the Tohono O'odham Nation Reservation.

The Havasupai Tribe, located at the basin on the Grand Canyon, received \$100,000 for a commercial compactor and shredder to reduce costs for handling waste and recycled materials. This equipment has allowed for greater volumes of recycled materials, such as plastic bottles and cardboard, to be placed in the paniers since shredded materials pack much more efficiently. This significantly reduced helicopter time that is necessary for hauling waste. The Havasupai Environmental Protection Depart-

ment estimates this saves \$158,571 annually.

These funds are critical in building the capacity of tribes to carry out environmental work. As most tribes in the Pacific Southwest have small governments, one goal of the funding is to assist tribes in developing the ability to establish and sustain environmental protection programs and make informed decisions to protect public health and environmental quality. The funds are also used to develop environmental and public health ordinances.

The EPA's Pacific Southwest Region is home to 148 tribal nations.

For more information please visit: http:// www.epa.gov/region9/tribal.

JOURNAL OF Environmental Management ARIZONA

If you have not renewed or updated your contact information within the past one year, PLEASE go online and use the Register Form to renew. Thank you!

SUBSCRIPTIONS are FREE to Qualified EH&S Professionals! Subscribe on-line at www.ehshomepage.com or call 480-422-4430 x42



## 2017 February 9

Luncheon Featuring: Speaker: Kirk Craig & Hester Groenevelt, Geosyntec Consultants. Topic: "Quantitative Passive Soil Vapor Sampling for VOCs--Mathematical Model, Lab Testing and Field Testing Results." Sponsor: Geosyntec Consultants Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ

## 2017 March 16-17

13th Annual Gatekeeper Regulatory Roundup Conference Location: Doubletree by Hilton, 2100 South Priest Drive, Tempe, AZ

v.epaz.o

## 2017 April 13

Luncheon Featuring: Speaker: TBA Environmental Response, Inc. Topic: TBA Sponsor: Environmental Response, Inc. Location: SRP Pera Club, 1 E. Continental Drive, Tempe, AZ

t our new website at:



## OUR MISSION:

IN 2017

VIRONMENTAL

COLLEAGUES

To promote leadership in environmental management throught education, advancement and application of science & technology and building a strong, connected and engaged membership of environmental professionals



KARY ENVIRONMENTAL SERVICES INC. THE KEY TO YOUR ENVIRONMENTAL SOLUTIONS"

1982 - 2016 34 YEARS OF EXCELLENCE

Clandestine Drug Lab Remediation 
Confined Space Rescue Certified 
Temporary Technical Personnel Training, Including: HAZWOPER;RGRA; and Confined Space Asbestos, Lead, and Mold Abatement UST Removal . Soil Remediation . Tank Cleaning . Tanker Service

Phone (480) 945-0009

24 Hour **Emergency Spill Response** www.KaryEnvironmental.com

Fax (480) 945-8599

Etperencer Hiping

TRUCKS SECULI

ROC151767 L-05 ROC218820 C-05 ROC263766 K-57 641 South Drew, Mesa, AZ 85210