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## SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT



Nicholas R. Hild, PhD.

### GOOD SCIENCE AND BAD: KNOWING THE DIFFERENCE

The advent of the digital age has changed the way we acquire information and we have become complacent and, perhaps, incapable of knowing the difference between good science and internet “junk” science. In the world of all things ‘environmental’ relying on the internet to find studies and literature that is good sound science, has become a critical concern.

So what has the internet got to do with sustainability? The answer is: plenty! Particularly, when it comes to understanding and evaluating studies that purport to be accurate and unbiased and utilizing such information to make recommendations that are truly based on good scientific data. It appears that our EH&S community is getting lazy and is letting the journalists who’ve become more like bloggers, influence their judgment—but bloggers don’t need to know the difference between good science and bad—however, EH&S professionals do—and, as will be discussed, the lawyers that specialize in EH&S also need to be able to know how to read and understand what the difference is between good science and bad.

Part of the fault lies with college program administrators who have embraced the technologies that allow students to use digital devices to replace—or at least, to complement—teaching the basics that imbue an understanding of what the difference is between good scientific data and ‘junk’ science. In particular, we now have Bachelor’s and Master’s of Science degrees being awarded to students whose only written papers and even their MS ‘projects’ contain only references that are tied to internet URL links. In addition, there are no longer any hard copy or permanent digital records of those ‘projects’ or papers recorded for future students to use or researchers to take advantage of...and worse, there are no copies recorded anywhere that allow anyone to follow-up the references to see just how good the science really is that the student used. Unfortunately, the internet URLs, in many cases, are time sensitive and tend to disappear so even if we wanted to check them out and use them for future research, they are no longer available if we look for them months or years later.

How this becomes a problem for EH&S professionals is evidenced in what we see when college graduates enter the real world and become responsible for making decisions and recommendations to their management about any environmental/health concern that requires a thorough understanding of studies and the science behind the conclusions and recommendations that they base their own opinions on. It isn’t their fault, of course, because no one ever explained that utilizing internet search engines to find answers to problems in college also required them to know how to know the difference between good science and bad, but in the real world, it matters!

Whether or not studies and scientific data is gathered from the internet or directly from literature sources and Journals that are peer reviewed, it is important to know such things as the difference between ‘correlation’ and ‘causation’ and, when conclusions are ‘statistically significant’ and if the findings are not, does that mean those findings are not valid?

It is important to know not only what the study’s authors say the findings are but what their peers have said about the study and its implications. (Your peers on Facebook and Twitter do NOT count!) This is something not usually available by queuing up the URL and reading what EPA or an environmental NGO thinks about it, so delving into research and

being able to evaluate its scientific merit is not something easily facilitated by internet search engines. Yet, it is a skill every EH&S professional needs to have in order to be able to do the job.

Here’s an example of where understanding these concepts is important. Recently, a power plant on the Navajo Reservation has been told by the EPA to install emissions controls on its stacks to reduce the impact of particulates on visibility (haze) over the Grand Canyon. The EPA used studies that show there is a correlation between visibility and coal fired power plant particulate emissions (intuitively, a no brainer), but, what the EPA didn’t say was that there were studies showing that this particular facility’s particulate emissions are the sole source (cause) of the visibility haze over the Grand Canyon. Rather, what they actually concluded was that, at best, there is ...a likely correlation between this plant’s particulate emissions and haze over the Canyon, only sometimes... when the winds are blowing emissions in the right direction—statistically, correlation and causation are not the same thing, and using data from different studies (i.e. metaanalysis), while appropriate if correctly used, is inappropriate when combined with observational data without properly, and scientifically, linking one to the other.

But, EPA isn’t required to prove that their data necessarily is statistically significant; only that there is a correlation between two factors that can be an indication there is reason to believe something is true (i.e. particulates emitted from burning coal reduce visibility in the ambient air), they have the ability to regulate any (environmental) situation where they believe (the studies and data show) there is a reasonable threat to “human health or welfare.” On the other hand, it is the owner/operator of any facility that is regulated who must show that the studies and/or data do not meet the standard being set and to do that, they turn to their environmental experts (and lawyers) who need to know how to separate good science from bad to make an unbiased argument plausible.

So, here is the proverbial bottom line: environmental, health, and safety professionals need to hit the ‘refresh’ button (to use a digital age term) when it comes to learning how to evaluate scientific data. You need to turn off your Twitter and Facebook apps and find a way to ‘re-educate’ yourself in the critical area of statistics and statistical research and how to know what good scientific data is and when it is being used properly. It won’t be as much fun as finding out who ‘likes’ your comments about the latest social event but it will be worth it to know you can finally do your job with confidence.

Here’s a suggestion: for a short refresher in what you need to know to understand, and most importantly, how to use the good scientific results of good scientific research to support your recommendations, check out *The China Study* by T. Colin and Thomas M. Campbell (Benbella Books, 2005, pp 36-45). What you will learn is not only what it means to truly understand the differences between (peer reviewed) studies that are ‘observational’ studies, what it means when data is said to be ‘statistically significant.’ And, the difference between ‘causation and correlation’—of particular importance when using (so called) scientific studies that the media have referred to when a particular event shows up on the six o’clock news and they want to interview ‘you’ to... ‘hold the powerful accountable...’

Maybe, of most importance to the EH&S community, you will also learn how to understand studies that are truly based on what is called, ‘metaanalysis.’ These are studies that combine data from multiple studies on the same issues or variables on which the combined data is used as a more powerful data set on which to draw conclusions. And, you will also learn why there are no absolutes, in the technical sense—99% certainty is unattainable but also unimportant—but it is metaanalysis—combining data accumulated over years and years, that is required to say that, (paraphrasing Campbell)... the odds of something being true are highly likely and the odds that something is not true are irrefutable based on the metaanalytical data gathered over the years of studies that are correlated... (i.e. think about smoking and lung cancer—it has never been 100% proven but metaanalysis has shown that the odds that smoking is unrelated to lung cancer are so astronomically low that its considered a settled issue—smoking does cause lung cancer!

And, just to remind you how important it is to EH&S professionals to be able to know the difference between good science and bad, when you read the China Study, you will learn there is metaanalysis data based on pretty good science, that—are you ready for this?—protein promotes cancer! Who knew? So, your challenge is: dig deeply into those studies and see how scientists evaluated the numerous peer reviewed studies and lab experiments to conclude that this is true. It will be a good exercise for you to (re)learn how to separate good science from the bad in studies (as the Campbell’s did in the China Study) and how to properly use the studies you find on the internet to make truly sustainable recommendations for the future of our children’s, children’s, children.

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# ARIZONA LAW TO ASSURE SUFFICIENT FUNDING FOR UST CLEANUP

## PASSAGE OF SB 1080 A POTENTIAL WIN-WIN FOR ARIZONA

by David Laney, CHMM

*There are 36 states that have funds to pay for both old and new releases from underground storage tanks (USTs). This does not include Arizona. There are 6 states that pay for only old releases. These are Arizona, Texas, Florida, Michigan, Wisconsin, and Iowa. Three states (Maryland, West Virginia, and Alaska) have UST funds that have ended. Two states (Oregon and Hawaii) never had UST funds. Needless to say, no two state funds are alike.*

*The story of how Arizona developed a fund to address UST releases, appeared to have it terminated by the legislature, only to then have it resurrected during the twelfth hour, is a cautionary tale for those who support government programs to assist business, those who believe that business and the public must pay for environmental protection, and those who believe that these matters are best addressed by the private sector and the marketplace. It is a long and winding tale with many starts and stops, serious financial crisis, potential mismanagement, but also significant success, and perhaps a bit of redemption.*

### PHASE OUT OF STATE TANK FUND

Those who have worked on USTs in Arizona know that for more two decades the State Assurance Fund (SAF) provided a mechanism (one cent per gallon sales tax) to pay for replacement and cleanup of old, leaking, and abandoned tanks. The 2004 passage of Senate Bill 1306 established a schedule to phase out and terminate (or “sunset”) the SAF. The phase out began with the termination of eligibility for new UST releases reported after June 30, 2006. Only those UST releases that were reported to ADEQ before June 30, 2006 could qualify for reimbursement coverage under the SAF.

This law also specified that owners, operators or volunteers would not be able to submit claims for payment of eligible costs after June 30, 2010. In recognition of the long-term nature of many UST cleanups and the continuing need to clean up orphan USTs yet to be found, the law allowed for the establishment of a Regulated Substances Fund (RSF) and Monitored Natural Attenuation Account through which ADEQ would perform cleanups at orphan sites and at sites where natural attenuation of contamination will continue beyond June 30, 2010 [A.R.S. §49-1015.01]. On July 1, 2011, any monies remaining in the SAF after eligible claims were paid were to be transferred to the RSF. The SAF and the \$0.01/gallon excise tax (or UST tax) would sunset upon receipt of \$60 million into the RSF or December 31, 2013, whichever occurred earlier.

### RESURRECTING THE FUND

Despite the existence of SAF for many years, there was distress in some quarters about plans to end the program. Some owners of USTs didn't meet the deadline for filing claims, either because they didn't know about it, or were unable to complete the work necessary to submit proper documentation. There were also those who felt that whatever the failings of the

program throughout the years, there were many significant accomplishments. To these individuals, terminating SAF was equivalent to throwing out the baby with the bathwater.

In part because of these concerns, a law to reinstate SAF -- Senate Bill 1154 -- was passed in 2010 by the Arizona legislature. However, this last ditch effort to save SAF was vetoed Governor Brewer who viewed SAF as a subsidy. In particular, the governor objected to the last clause of the bill which stated that the governor can't appropriate SAF money for the General Fund. There was a feeling among some that SB 1154 was pushed through by greedy lobbyists. Whether this is true, some former employees of ADEQ and the AG's office have stated (usually off the record) that SAF was a favorite of spoiled consultants and contractors who learned how to game the system. Another complaint is that SAF was used by companies that have insurance or their own funds but refused to use these to solve problems that they created.

This brings us to the current legislative session. On June 13, 2013 Senate Bill 1080 to reinstate the one cent per gallon sales tax and establish a UST Assurance Account was passed by the Arizona legislature. It was signed into law by Governor Brewer on June 20, 2013.

The law delays the repeal of the UST tax for two years (new sunset date December 31, 2015). It provides for a five year extension to submit an application for reimbursement for or direct payment of eligible reasonable and necessary costs from the UST Assurance Account, preapproval of applications for reimbursement, and for any application made or expense incurred after June 30, 2010. The bill states that only responsible owner/operators may apply for reimbursement, applicants must have a financial mechanism in place for payment, and applicants must first pay a 10 percent deductible. In addition, the bill:

- Requires the ADEQ director, beginning July 1, 2014 and on July 1 of each year thereafter, to transfer from the UST Assurance Account an amount equal to twenty percent of the monies deposited in the Assurance Account during the preceding fiscal year into a Regulated Substances Fund (RSF).
- Extends the coverage for corrective action costs from the Underground Storage Tank Assurance Account if the release could not have been reported with reasonable diligence before July 1, 2006.
- Specifies that if the Underground Storage Tank Assurance Account does not have adequate monies to pay for all releases, releases reported on or after July 1, 2006 are eligible for coverage for corrective action costs from the Underground Storage Tank Assurance Account in priority after releases of a regulated substance that are reported before July 1, 2006.
- Specifies that if the UST Assurance Account does not have sufficient monies to pay all claims by the date of the termination of the account as otherwise provided by law, any claims unpaid on the date of termination of the account are extinguished without regard to whether those claims were eligible for coverage from the account.
- Creates a 17 member study committee to consider and make recommendations relating to the UST Program.
- After the transfer of \$60 million into the RSF, the ADEQ director is required to transfer any money deposited in the UST Assurance Account to the state general highway fund established by Section 28-6991, Arizona Revised Statute.

It should be noted that ADEQ indicated that it was neutral on the legislation. It was endorsed by the Arizona Petroleum Marketers Association, the Arizona Mining Association, the Arizona Cattlemen's Association, and the Western States Petroleum Association.

### ARIZONA STATE TANK PROGRAMS -- FACT OR FICTION?

While the recent passage of SB 1080 and the governor's signature to make it law means new opportunities for those who weren't able to file claims or receive reimbursement from SAF, many questions remain unanswered as to whether the new UST Assurance Account can be an effective means of providing assistance to owners and operators and whether the new program can avoid missteps and misadventures that befell SAF is the past. To better understand what SAF did and didn't accomplish, it is necessary to review its history.

### FEATURES OF ARIZONA UST ASSURANCE FUND

The Underground Storage Tank Assurance Account, known as the State

Assurance Fund (SAF) was established in 1990 to assist eligible UST owners, operators and others in meeting the potentially high costs of leaking UST cleanups and to fund the cleanup of orphaned leaking USTs by the Arizona Department of Environmental Quality (ADEQ) wherever the owner or operator could not be located or was otherwise incapable of performing cleanups [A.R.S. §49-1051]. The SAF was funded through a \$.01/gallon excise tax that was assessed at the pump on the consumers of gasoline and diesel fuel [A.R.S. §49-1031].

The SAF was supposed to be used to: (1) Provide reimbursement coverage to UST owners, operators and volunteers for eligible cleanup costs; (2) Fund ADEQ costs for administering cleanup requirements; (3) Fund ADEQ costs for administering the SAF; and (4) For reasonable and necessary costs incurred by ADEQ to perform leaking UST cleanups.

Costs eligible for reimbursement to UST owners included those incurred for cleanups that were reasonable, necessary, cost effective and technically feasible; sampling, analysis and reporting that verified the existence of a UST release that required cleanup; and, under specific circumstances, closure of the UST system.

ADEQ accessed the SAF to perform cleanups of orphaned leaking USTs where the owner or operator could not be located or where immediate action was required to protect human health. In addition to protecting human health, the cleanups reportedly had significant positive impacts on their surrounding communities, including enhancing local economies, increasing property values, generating new jobs, and creating new commercial and recreational space on sites once viewed as liabilities.

The basic SAF limit of coverage was \$500,000 per UST release. However, a UST owner or operator could qualify for coverage of up to \$1 million under certain conditions. An eligible owner, operator or volunteer could receive up to 90% of eligible costs from the SAF, less 10% which is retained as a co-payment.

## ACCOMPLISHMENTS

Between 1990 and 2009 the UST program at ADEQ closed 7,505 releases which represented 88 percent of the total number of 8,512 releases that were reported. As of May 21, 2012 the SAF program had processed approximately 17,000 claims and reimbursed approximately \$335 million in

coverage to UST owners, operators and volunteers for eligible cleanup costs.

Another significant accomplishment was implementation of the Municipal Tank Closure Program (MTCP). A total of 43 cities and counties participated. Approximately 245 USTs were removed and releases were discovered at 27 facilities.

Municipal Tank Closure Program			
	2006	Oct-08	Oct-11
Cities Involved	28	38	43
Applications Received	71	93	123
Applications Approved	60	85	113
USTs Removed	104	173	245

Source: ADEQ, Oct. 25, 2011 (Underground Storage Tank Program Conference)

It is also true that the ADEQ State Lead program was able to effectively address UST releases using money from the federal stimulus (the American Recovery and Reinvestment Act of 2009). ADEQ received \$3.2 million in federal funding for State Lead program. This was used to address 26 UST sites in 22 cities. Site characterization was completed at 7 sites, remediation was initiated at 22 sites, 8 facilities had all releases closed, and 4 UST system systems were permanently closed.

## PROJECTED BUDGET SHORTFALL

As of June 2012, ADEQ projected that on December 31, 2013 the RSF would contain only \$38.2 million (ADEQ Stakeholder Workgroup Meeting, June 12, 2012). However, ADEQ said that \$71 million - - almost twice the amount expected to be available - - was needed to finish work that is before the State Lead group. This included \$31 million to address 62 sites that were in the program at the time, \$11 million to address 42 orphan sites that were not yet in the State Lead program, and \$29 million to address 110 sites where small owners and operators might not have the financial ability to pay for the work to be done. To make this money go farther, ADEQ began an effort in 2011 to evaluate the classification of the 600 "open groundwater sites". The idea was that a huge portion of what were called "orphan" sites at the time could be reclassified and removed from the list of the sites for which the State would be ultimately responsible. In particular, ADEQ was interested in seeing if there is a volunteer who would be willing to do cleanup of these sites or a Responsible Party who has a legal obligation to perform cleanup. At the time it was believed that reclassification of the 62 open sites would provide ADEQ a better idea of how many sites State Lead would likely have to attempt to address in the future.

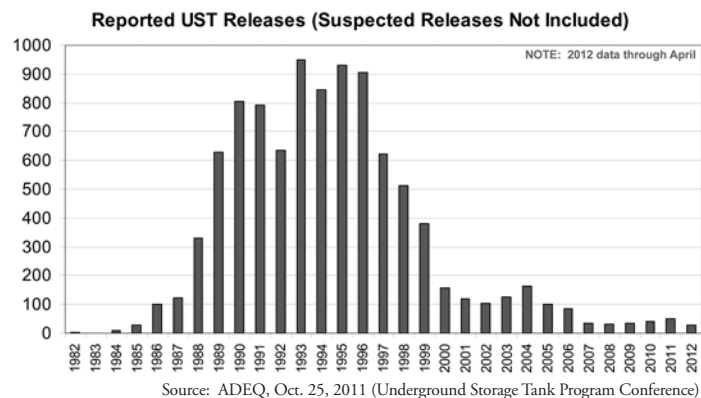
The concern was that ADEQ State Lead has had an annual Corrective Action program budget of \$4.42 million (including SAF funding of \$2.04 million for oversight of corrective action performed by other parties and \$1.23 million for projects managed by State Lead) and EPA provides a grant of \$1.15 annually to cover a portion of this cost. Thus without SAF there is a projected future annual budget shortfall of \$3.27 million dollars for cleanup of releases from USTs.

ADEQ is also responsible for a Release Prevention program. As part of the program ADEQ conducts compliance inspections on facilities that operate USTs. There are approximately 2,534 operating facilities with 7,053 USTs. ADEQ perform 900 to 1000 inspections per year. Of 2,231 facilities inspected from July 2006 to October 2008 74 percent demonstrated compliance at the time of inspection; 96 percent demonstrated compliance subsequent to the inspection.

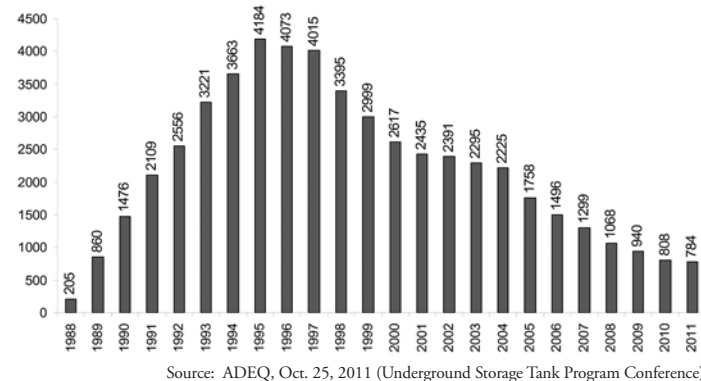
The total annual budget for the Release Prevention program is \$2.5 million. Program funding currently includes a \$100/tank fee (\$700,000 annually), an annual EPA grant of \$500,000 and \$1.3 million from SAF. Thus without SAF there would be a projected future annual budget shortfall of \$1.3 million for the Release Prevention program.

Based on this information it appears that ADEQ had many years and many millions of dollars to get the job done and failed. But that isn't all there is to the story. It is likely that ADEQ could have completed its mission if the legislature had kept their hands of the money in SAF. However, between 2004 and September 1, 2009 the legislature "swept" \$43 million from the UST fund to the state general fund. An additional \$14.65 million

*Continued on next page*



## Number of Reported UST Releases Remaining Open at the End of Each Year



was transferred to the general fund in FY2010 for this same purpose.

Things eventually became so bad that in February 2010 ADEQ sent letters to parties who had filed claims for SAF reimbursement to inform them that it was necessary to prioritize claims:

Unprecedented revenue shortfalls and transfers from the Underground Storage Tank State Assurance Fund have resulted in ADEQ's determination that the State Assurance Fund balance will not be sufficient to pay all approved amounts for applications and direct payment requests that are in process or are anticipated to be submitted.

Accordingly, ADEQ indicated that effective immediately, and until further notice, SAF claims would be assigned priority "in consideration of the financial need of the eligible person, the risk to human health and the environment posed by the contamination, and whether a delay in assurance account coverage will adversely affect a cleanup in process. Though reasonable, this step eliminated opportunities for reimbursement to owners and operators who had been proceeding to do the right thing to characterize and cleanup UST releases based on the assumption that money to pay for this work would be available until SAF officially sunset.

#### DEVELOPMENT OF A FEE BASED PROGRAM

Within the last few years, ADEQ programs have moved more and more to fee based funding until the agency no longer receives any money from the general fund. Fee based funding requires that those who use ADEQ services pay a fee for the services that they utilize. ADEQ has successfully utilized this approach when issuing air quality, stormwater, Aquifer Protection Permits, etc. With the end of SAF ADEQ contemplated transitioning the UST program to a fee based system as well. A UST Program Conference was held by ADEQ on October 25, 2011 and stakeholder (Financial Responsibility Workgroup) meetings to discuss funding options were held by ADEQ May 7, May 31, June 6, and July 26, and August 22, 2012. Topics discussed included potential incompatibility of tank construction materials with ethanol and blended fuels, services provided by the UST Inspections and Compliance Unit, allowable financial responsibility funding mechanisms, the features and failures of other UST funds in other states, private insurance, etc.

In one presentation at the June 6, 2012 meeting ADEQ stated that without a permanent funding source, RSF would reach insolvency in early FY 2017. ADEQ representatives said this would mean no funding for State Lead cleanups, severely underfunding of ADEQ's UST and LUST programs, and that UST and LUST programs would likely revert to EPA Region 9. The potential funding options that were listed by ADEQ included:

- Increase UST annual tank fee (A.R.S. §49-1020)
- Establish LUST document review fee (per SB1306)
- Modify the state's Water Quality Assurance Revolving Fund (WQARF) for state superfund sites to allow for remediation of on-site petroleum contamination (only pertinent if WQARF receives full funding)
- Extend the sunset date of the UST excise tax for: LUST Corrective Action Program, UST Leak Prevention Program, current and future State Lead remediation

ADEQ suggested that reduced response time by ADEQ employees responsible for reviewing and responding to documents submitted for work at UST sites might justify the use of fees. This is shown in the following table:

Corrective Action Report Review Time Since January 2011					
	# Received	Report Review / Response Time (%)			
		< 30 days	< 60 days	< 90 days	> 90 days
Site Characterization Reports	21	100%			
Corrective Action Plans	3	100%			
Closure Requests	18	78%	5.50%		17%
Periodic Site Status Reports*	78	100%			
*Started counting Periodic Site Status Reports in June 2011					

Source: ADEQ, Oct. 25, 2011 (Underground Storage Tank Program Conference)

Since charging fees for services rendered is most consistent with how ADEQ has sought funding for its other programs, this may be a logical future development to help offset program costs. However, a question remains as to when, or if, fees would be sufficient to pay for the services that ADEQ performs, particularly for orphaned and abandoned sites.

#### MECHANISMS FOR FINANCIAL RESPONSIBILITY

Of course federal and state laws require that a UST owner or operator have a current financial responsibility (FR) mechanism. FR means having the financial ability to pay for both costs of corrective actions and third-party liability claims (property and bodily injury) associated with releases of a petroleum product from an owner's or operator's UST system. All petroleum marketing firms (e.g., gas stations) are required to have \$1,000,000 available to clean up and pay for any third-party damages resulting from each release (also known as a "per occurrence amount"). For nonpetroleum marketing firms (i.e., governmental entities that own or operate USTs for fleet vehicles), the required per occurrence amount is based on average monthly throughput. An average monthly throughput of 10,000 gallons or less requires coverage of \$500,000; more than 10,000 gallons requires \$1,000,000 of coverage (Arizona State Senate Brief, October 29, 2008). UST owners or operators are also required to carry coverage for the annual "aggregate," which is a limit or cap on the amount that must be covered per year. The aggregate is based on the number of UST systems owned. The annual aggregate coverage required is \$1,000,000 for owners of 1 to 100 USTs; owners of more than 100 USTs are required to carry \$2,000,000 of aggregate coverage. Thus regardless of whether the State Assurance Fund returns in some form or another, every major UST owner or operator should have their own means of paying to clean up any potential releases that occur.

An EPA Study on the effectiveness of UST insurance as a financial responsibility (FR) mechanism dated December 2011 stated that "The study findings are inconclusive as to whether UST insurance is effective as a FR mechanism." The study also stated that "it does not appear that insurance carriers are excessively or dismissively denying claim payments." However the study also stated that "EPA is aware of individual circumstances where owners and operators feel their insurance carriers are inappropriately denying coverage."

ADEQ has been participating since 2009 in a series of calls that the EPA Office of Underground Storage Tanks (OUST) has held with states to discuss insurance as a viable FR mechanism. ADEQ is also the Region 9 representative on the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) State Funds/Financial Responsibility Task Force.

#### WHAT'S NEXT?

So when can you expect to see some effect of the new UST Assurance Account law? Most likely, there will be nothing of significance occurring with the new law until sometime in 2014. This is because the law says that ADEQ is not required to take any action on an application for coverage, reimbursement or payment from the UST Assurance Account until after the UST Program Study Committee submits a report of its findings and recommendations to the governor, the president of the senate, and the speaker of the house of representatives and the deadline for this is December 31, 2013 (the same date that SAF was officially supposed to sunset).

The 17 member UST Program Study Committee is to be comprised of the following members:

1. House Republican
2. House Republican
3. House Democrat
4. Senate Republican
5. Senate Republican
6. Senate Democrat
7. Governor's designee
8. ADEQ Director or designee
9. ADOT Director or designee
10. Attorney General or designee
11. City or Town designee
12. Retail seller of petroleum products
13. Petroleum producer
14. Insurance company representative
15. Environmental consultant
16. Public member (appointed by Senate President)
17. Public member (appointed by Speaker of House)



The law requires the committee to consider and make recommendations on the following issues: (1) needs and possible sources for future funding of the program, (2) financial responsibility requirements and mechanisms for demonstrating financial responsibility, (3) tank compatibility issues, (4) leak detection, (5) tank inspections, including compliance and maintenance programs, (6) reestablishing eligibility for claims barred by deadlines, including consideration of unpaid applications made against the underground storage tank assurance account after June 30, 2010, and (7) revenue collection and expenditures.

#### CONCLUSION

The availability of sufficient funding to undertake UST cleanups after the SAF is terminated is important to many Arizona communities which directly benefit through improvement of the environment and through the return of UST cleanup sites to productive reuse. It is also important to business owners with a small profit margin and limited financial resources, even with insurance, to successfully pay the tens to hundreds of thousands of dollars necessary to clean up a UST release.

With the passage of SB1080 it appears that Arizona will provide "a second bite at the apple" for UST owners/operators who were unable to receive reimbursement the first time around. In addition, the new UST Assurance Account will continue to fund ADEQ's work to address UST releases while at the same time setting aside money so that ADEQ tank programs can continue even after the new fund is gone. Finally, it appears the new law will provide some much needed funding for Arizona highways. If managed wisely, the new UST fund represents a potential win-win. Hopefully, all involved have learned some lessons from previous efforts to establish a fund to address UST releases. If so, it should be possible to avoid many of the problems and pitfalls of the past.

David F. Laney, CHMM, is Principal/Senior Project Manager with Cardno ATC. Dave has a Bachelor of Science degree from Michigan State University and 29 years of experience in environmental consulting and project management in Arizona, California, Nevada, and Colorado. He is responsible for assessment and remediation of contaminated properties, underground storage tanks, Brownfields redevelopment, vapor intrusion assessments, and regulatory compliance. Dave can be reached at 480-355-4633 or by email at dave.laney@cardno.com.

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# JOURNAL OF Environmental Management ARIZONA

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## FROM THE EDITOR



The Journal welcomes Cardno ATC in this issue as an advertiser! If you enjoy receiving the Journal, please be sure to give them a call and tell them (and our other advertisers) that you appreciate their advertising support for the Journal! Our advertisers make it possible for us to continue, year after year, to provide you with Arizona environmental community news and information at no cost to subscribers.

Let us know if you have announcements for our Newsbriefs section; whenever possible we will be happy to include your organization's news items.

For advertisers and all others sending correspondence to the Journal: Notice the Journal mailing address has changed. Please send correspondence, invoice payments and all mail to the Journal at: Journal of Environmental Management Arizona, PO Box 51852, Phoenix, Arizona 85076. Thank you!

Sincerely,  
Jim Thrush, M.S. Environmental Management  
Editor & Publisher  
480-422-4430 x42

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JOURNAL OF ENVIRONMENTAL MANAGEMENT ARIZONA  
EDITORIAL Publisher & Editor: James Thrush, M.S. Env. Mgt., [jimthrush@cox.net](mailto:jimthrush@cox.net) or 480-422-4430. SUBSCRIBE: [ehshomepage.com](http://ehshomepage.com) or 480-422-4430. RATES FREE to qualified EHS Professionals, others call. MAILING ADDRESS (NEW): JEMA, PO Box 51852, Phoenix, AZ 85076. ADVERTISING 480-422-4430 x42. Published 6 times/year. Copyright ©2013 by JEMA. All rights reserved. LEGAL DISCLAIMER Information presented in JEMA originates from sources presumed to be accurate and complete. Due to the rapidly 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. Readers are encouraged to contact authors, agencies, and advertisers directly for verification/clarification. Content for informational purposes only, and should not be considered legal or professional advice. Consult your legal counsel or environmental consultants for advice. WARNING Serious legal, environmental, and/or safety consequences can result from non-compliance with environmental and safety regulations and standard safety, environmental, and professional practices.

COVER PHOTO: REMOVAL OF LEAKING UST. SEE RELATED ARTICLE ON PAGE 6.  
PHOTO COURTESY OF KARY ENVIRONMENTAL SERVICES, INC.

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# NEWS BRIEFS

## FRY'S ELECTRONICS FINED \$50,000 BY US EPA FOR MAKING UNSUBSTANTIATED HEALTH CLAIMS

❖ The U.S. Environmental Protection Agency announced recently electronics retailer Fry's Electronics has agreed to pay a \$50,000 penalty to settle a case against the company for importing and selling an unregistered gaming equipment wipe that falsely claimed to be antibacterial and anti-pathogenic.

"Before putting any products on the floor for sale, retailers must ensure they are in compliance with federal environmental laws," said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "EPA will continue to work with our state counterparts to ensure that products do not make unverified claims about health benefits."

Evidence collected during an inspection by the California Department of Pesticide Regulation in February 2010 and a follow-up EPA investigation led EPA to issue a complaint against Fry's Electronics for the improper

importation, sale and distribution of Cambre Products' Game On brand "Dirt Rags." After being contacted by EPA, Fry's Electronics promptly pulled the product from its shelves nationwide.

Fry's Electronics is based in San Jose, Calif., and has stores throughout California and in eight other states. The manufacturer of the gaming control wipes, Cambre Products, is headquartered in Toronto, Canada.

Products that claim to kill or repel bacteria or germs are considered pesticides, and must be registered with EPA before their sale or distribution, pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The Agency will not register a pesticide until it has been tested to show that it will not pose an unreasonable risk to human health or the environment when used according to the approved label directions. Consumers should carefully follow the directions for proper use, and to look for the EPA registration number printed on product labels.

For more information on FIFRA and its enforcement, please visit: <http://www.epa.gov/oecaagct/lfra.html>.

## PURE WAFER, INC. AGREES TO \$120,000 SETTLEMENT FOR FAILURE TO HAVE AIR QUALITY PERMIT AT PRESCOTT FACILITY

❖ Arizona Department of Environmental Quality officials announced recently that Pure Wafer, Inc. has agreed to pay \$120,000 in civil penalties for not having an air quality permit at its Prescott facility.

During an inspection of the Pure Wafer facility, ADEQ staff observed an emission from the onsite stack, which was determined to be hydrogen fluoride. The inspection also revealed that the facility did not have an air quality permit. Pure Wafer acquired the facility but did not obtain a permit before or after the purchase.

Since the inspection, Pure Wafer has applied for a permit, which was issued on January 2, 2013. In addition to identifying air pollution emissions limitations, the permit contains the necessary monitoring, record keeping and reporting requirements for the facility.

"Permits are important to ensure that air pollution equipment is installed and functioning properly," said ADEQ Director Henry Darwin. "Pure Wafer worked quickly and cooperatively with us to obtain a permit after receiving the notice of the violation."

The U.S. Environmental Protection Agency lists hydrogen fluoride as a hazardous air pollutant. Acute inhalation exposure can cause severe respiratory damage and pulmonary edema.

Pure Wafer, whose headquarters are in the United Kingdom, prepares reclaimed silicon test wafers for the semiconductor industry. It operates manufacturing facilities in Prescott and Swansea, South Wales.

The consent judgment is subject to court approval.

## ARIZONA UNIVERSITY AND TWO CALIFORNIA CITIES RECEIVE GRANT FOR EDUCATIONAL WORKFORCE DEVELOPMENT AND JOB TRAINING

❖ The U.S. Environmental Protection Agency (EPA) announced recently the selection of 16 grantees for a total award of \$3.2 million through the agency's Environmental Workforce Development and Job Training (EWDJT) program. The grants support local work to recruit, train, and place unemployed individuals in jobs that address environmental challenges in their communities. By providing Americans in economically disadvantaged communities with job training in environmental health and safety, EWDJT funding helps protect people's health and the environment while supporting local economies.

"EPA continues to provide communities with funding to deliver valuable job training to individuals living in communities impacted by harmful pollution," said Enrique

*Continued on page 11, right column*

## OSHA BASICS WEBINAR (FREE!)

### POWERED INDUSTRIAL TRUCKS

Chuck Paulausky, Arizona resident and Certified Hazardous Materials Manager, Masters Level, and President of CP Safety & Environmental LLC, will present a free online webinar, "Death by Forklift is Really the PITs" on September 12, 2013. This presentation covers the basics of OSHA compliance for Powered Industrial Trucks, including forklift hazards, stability, operation, and inspections.

Chuck has worked as an Environmental, Health & Safety professional for more than 24 years, providing EH&S management and compliance services for manufacturing facilities in Arizona, Texas, Utah, California, Europe, and Asia. He has developed and implemented training programs for more than 5,000 employees and is a 10-hour/30-hour OSHA-authorized General Industry Outreach Trainer. He has experience in all aspects of industrial safety, risk management, workers' compensation, and OSHA compliance. **Date: September 12, 2013 Time: 10:00 AM - 11:00 AM** (Arizona, PDT).

If you would like to register for the webinar sign up online at: <http://tinyurl.com/mhx9s6m>.





# ASSOCIATIONS PAGES

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



WWW.SAEMS.ORG

The July luncheon was held at Hotel Tucson. Our speaker was Maaike ("Mica") Schotborgh from the Wildlife Habitat Council (WHC). Maaike shared some of the projects WHC and businesses have partnered to create.

Our P2 committee has been diligently preparing for our annual Pollution Prevention seminar to be held September 25, 2013 at the Hilton East. This year we will be featuring a P2 101 training and certification during the morning session. Online registration for this event is available at [www.saems.org](http://www.saems.org).

Highway clean ups make their return with the beautiful fall desert weather. The next highway cleanup is scheduled for Saturday, September 21st.

If you are interested in joining SAEMS or attending an upcoming event please visit our website at [www.saems.org](http://www.saems.org).



Dawn Weyer  
President



WWW.AZAEPP.ORG

The Arizona Association of Environmental Professionals (AZAEP) invites you to our September 24, 2013, meeting at Grimaldi's in Scottsdale from 6 to 8 p.m. The speaker will be Dr. Mattei Georgescu who will talk about his state-of-the art work in modeling climate change. His research focuses on the relative impacts of urban expansion (urban heat island) and greenhouse gases. The monthly meetings include dinner and cost \$15 for members and \$20 for non-members.

At the July monthly meeting, the results of the At-Large Board Member elections were announced. Congratulations to Jennie Curé, Beth Defend and Kris Gade!

AZAEP is the state chapter of the National Association of Environmental Professionals (NAEP) and we sponsor NAEP webinars in Phoenix (at AMEC) and in Tucson (at HDR). The August 7, 2013 webinar covered ACHP/CEQ Guidance for integrating NEPA and Section 106. These on-site Webinars are free to AZAEP members and cost non-members \$10.

To become a member, join our distribution list or learn more about AZAEP, please visit our new website at [azaep.org](http://azaep.org)! AZAEP also has a new post office address: P.O. Box 69 Tucson AZ 85702.



Patricia  
Mariella, Ph.D.  
President



The Southern Arizona Chapter of the American Society of Safety Engineers (ASSE) has been on summer break, however, board members have been working hard to put together another exciting season. The big news is that our favorite meeting location (El Parador Restaurant) has closed for good. We are currently searching out a new place that can adequately accommodate our

needs. Stay in close touch with our web site - <http://southaz.asse.org/> to see where we settle. Over the summer, the Southern Arizona Chapter was awarded another "STARS" from ASSE national. And the local chapter hit the half way mark for full funding of our local David MacCollum scholarship. Tentative presentation topics for the upcoming months include Crises Communications, Combustible Dusts, Suicide Prevention, injury prevention and another industrial field tour.

The Southern Arizona Safety Council meets in August and Nov. on the 3rd Tuesday of the month. All are welcome. For details, visit our web site.



John Roads  
Secretary



AZ.ASSE.ORG

The Arizona Chapter of the American Society of Safety Engineers would like to first thank Tim Page-Bottorff for his exemplary leadership this last chapter year! Thank you Tim. This year the AZ ASSE will be providing some excellent topics and dynamic speakers for our members and guests. I encourage you to check our website for upcoming meetings, topics, and locations, <http://az.asse.org/> it's going to be a fun year, with lots of events planned outside of our technical chapter meetings with community service opportunities to mixers. Stay in touch, you can follow us on Facebook or LinkedIn @ Arizona Chapter ASSE and #AZASSE on Twitter.



Ryan  
Oughterson  
President



ARIZONA  
ENVIRONMENTAL  
STRATEGIC  
ALLIANCE

WWW.AZALLIANCE.ORG

The Alliance is in the process of developing our organization's Strategic Plan with a series of half-day Strategy Sessions. We have found it very useful to intensively rethink our strategy every few years, bringing together our governmental/regulatory partners, our business Members, and our Advisory Councilors to focus on our core purpose, our mission, and our vision. These sessions also help new members to learn about the origin and core values of our organization, and to participate in developing our near- and long-term planning. To paraphrase a comment made by one of our members about developing a strategic plan, "it's not working unless it hurts". Hopefully the process is not 'hurting' anyone too much, perhaps the great lunch and breakfast selections that we provided our members have helped make the process more enjoyable!

We have a lot planned for this upcoming fall--stayed tuned for future announcements! If you are interested in learning more about Alliance membership, or if you want to "host" or "participate" in a "Facility Technical Tour", contact me ([mattc@pinggolf.com](mailto:mattc@pinggolf.com)) or Jim Thrush at 480-422-7392.



Matt Conway  
Chair



WWW.AZCHAMBER.COM

The Arizona Chamber of Commerce and Industry and the Arizona Manufacturer's Council is in the process of developing the organization's public policy priorities for 2014. The Environment Committee is the venue to submitting and vetting environmental legislative and regulatory issues of concern on behalf of member companies. Anyone wanting to recommend an environmental issue for consideration should contact Jeff Homer at 480-441-6672 / [jeff.homer@gdc4s.com](mailto:jeff.homer@gdc4s.com).

The Environment Committee continues to host breakfast meetings on the second Wednesday of each month at the Phoenix Sheraton Hotel located at 1600 S. 52nd Street Tempe, AZ 85281. Check the Arizona Chamber's web page at [www.azchamber.com](http://www.azchamber.com) for meeting details.



Jeff Homer  
Chairman  
Environment  
Committee

## NEWS BRIEFS

CONTINUED FROM PREVIOUS PAGE

Manzanilla, Division Director in EPA's Pacific Southwest Region. "This on-the-job training provides Americans struggling to find work with valuable experience while strengthening public health and local economies."

EPA's Environmental Workforce Development and Job Training program, which provides environmental and health and safety training, helps graduates develop a broader set of skills that improves their ability to secure short-term contractual work, as well as full-time, employment in the environmental field. Program graduates acquire training and certifications in a variety of areas, such as environmental health and safety, lead and asbestos abatement, landfill management, wastewater treatment, brownfields assessment and cleanup, Superfund cleanup, leaking underground storage tank removal, recycling and emergency response.

Northern Arizona University in Flagstaff, Arizona is a recipient of one of the \$200,000.00 grants and plans to train 36 students and place 35 graduates in environmental jobs. The university is targeting unemployed residents of the Navajo Nation, particularly those living in communities impacted by uranium mining and cleanup activities. Key partners include the Navajo Nation Department of Workforce Development, Navajo Nation EPA, Navajo Nation Office of Economic Development-Church Rock and Shiprock Chapters, and Navajo Nation Council Delegates.

As of May 2013 more than 11,000 Americans have completed environmental workforce development and job training, of which, more than 8,000 have obtained employment in the environmental field with an average starting hourly wage of \$14.12.

Continued on page 16



Larry Olson, PhD.

## IT'S ALL ABOUT CHEMISTRY

# THE KEYSTONE XL PIPELINE

One of the most controversial environmental issues we currently face is whether to build the Keystone XL Pipeline which would move oil derived from tar sands in Alberta, Canada to oil refineries on the Gulf coast near Houston. Because the pipeline would cross an international border, the State Department must first decide whether it is in the national interest and then a Presidential Permit must be granted. Keystone has become a political lightning rod with numerous environmental groups and some affected land-owners pressuring President Obama to deny the permit and many business groups and most Republicans in Congress lobbying for it. Let's take a look at some of the arguments.

Producing oil from tar sands is more complicated and energy intensive than traditional oil wells. The product is more acidic, corrosive and heavier, with a consistency of soft asphalt, and it has to be diluted in order to be transported in a pipeline. Some argue that it is more likely to produce spills through corrosion of the pipeline and that any spill will be much harder to clean up than conventional oil spills. EPA cites difficulties in cleaning up a 20,000 barrel spill of tar sand oil in 2010 into the Kalamazoo River to support this. The draft Environmental Impact Statement from the State Department estimates there is a 4% chance of a major spill (1000-20,000 barrels) during the operation of the project. The original route proposed for the Keystone XL pipeline crossed the environmentally sensitive Sand Hills region in Nebraska. This permit request was rejected in 2012 and TransCanada changed the route to avoid this area and reapplied. It is this second application that is currently being considered. Nevertheless, even the new route overlies the Ogallala aquifer on which two million people depend for drinking water.

But the biggest concern for those opposed to the pipeline is that it would enable the development of tar sands oil which they consider the dirtiest fossil fuel of all. The draft EIS from the State Department estimates that greenhouse gas emissions from tar sand oil is 81% greater than from conventional oil on a well to tank basis and

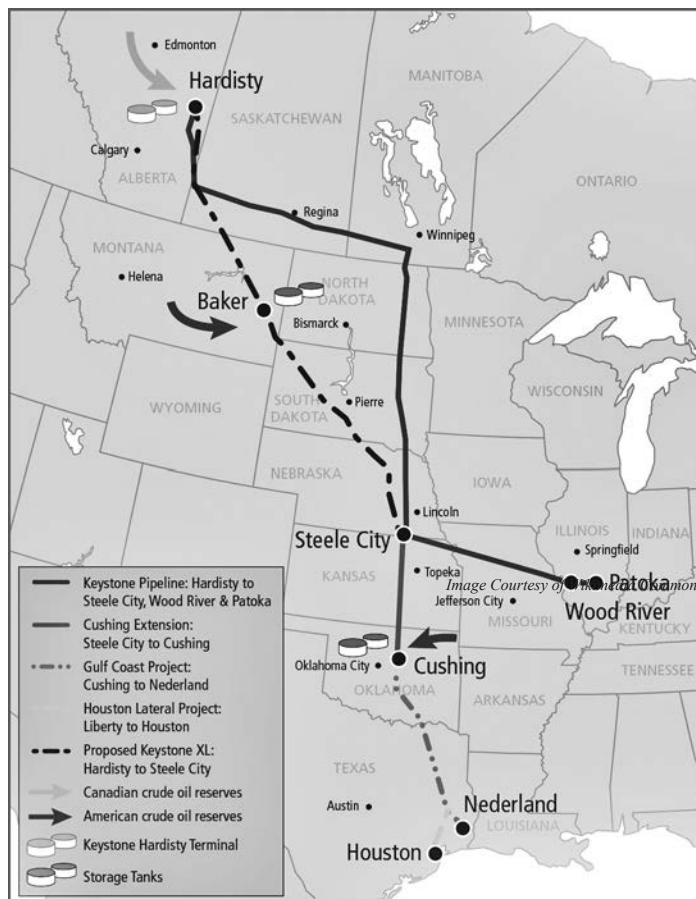


Image Courtesy of TransCanada at [keystone-xl.com](http://keystone-xl.com)

17% on a well to wheel basis. But it concludes that the pipeline itself would have no material impact on greenhouse gas emissions because if it is not built the oil would simply be transported by other means. EPA disagrees and thinks that alternatives would triple the cost of transportation and would significantly decrease production.

The proposed XL pipeline is 36 inches and will transport 830,000 barrels per day (the U.S. consumes about 15 million barrels per day). Replacing this capacity would require 15 unit trains (100 rail cars) per day. As we saw in the Lac-Mégantic, Quebec train derailment in July that killed 47 people, there is no risk free solution to transporting oil. This train was carrying crude oil from North Dakota's Bakken Shale basin to a St John refinery. U.S. railroads now carry more than 1 million barrels per day, so replacing the XL pipeline would almost double this load.

Arguments in favor of the pipeline claim that it would create jobs in the U.S., although most would be temporary during construction, and that it is essential to reducing America's dependence upon "foreign" oil (Canada doesn't really count I guess). It is also argued that if the oil doesn't end up in U.S. refineries, it will simply end up in other countries. Thus, not building the pipeline wouldn't really reduce greenhouse gas emissions anyway.

There have been over 1.2 million public comments on the State Department draft EIS since it was published in March 2013. State is currently reviewing those comments and those of other federal agencies. It is due to release its decision on the Presidential Permit soon. Expect a barrage of criticism no matter what the decision.

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](mailto:Larry.Olson@asu.edu).



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## NEWS BRIEFS

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**City of Tucson Environmental Workforce Development and Job Training Program Class**  
*Front Row (L to R): Catherine Kay, Jose Navarro, Grace Linker, Rodney Cuarezma, William Coleman, David Silva, Erica Trinidad. Back Row (L to R): Derek Koller (Admin), Ana Karina Angulo-Gaxiola, Charles Sanchez, Fredy Garcia, Milan Smith, Derek Sizemore*

### ENV. WORKFORCE DEVELOPMENT & JOB TRAINING PROGRAM GRADUATES ENVIRONMENTAL TRAINEES

❖ The City of South Tucson recently announced that the third and final class of the City of South Tucson's Environmental Workforce Development and Job Training Program graduated on August 21, 2013

and will be looking to obtain entry level positions in the Environmental Workforce.

The students have been in training since early April 2013 and by the time they graduate will have received the following certifications: 10-Hour OSHA General Industry Safety and Health, 24-Hour Asbestos Building Inspector, 24-Hour MSHA New Miner Safety, 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER), and Adult CPR and Basic First Aid Certifications.

In addition, they have received training in Environmental Regulations, Geology, Green Remediation Technologies, Phase I and Phase II Environmental Site Assessments, Leadership, Site Characterization, Site Mapping, Soil and Groundwater Sampling, Stormwater Management which included Stormwater Inspections and SWPPP Preparation, Sustainability, and Underground Storage Tank (UST) Operations, Regulations, and Site Assessment and several other topics. The training was provided by professionals in the environmental field from various Arizona-based environmental firms.

The job training was funded by an EPA Job Training Grant awarded to the City of South Tucson in 2011. Thus far, several graduates from the 2011 and 2012 classes have obtained employment and found success in the environmental workforce. The job placement success rate for the City of South Tucson's program is above the national average.

Assistance from the environmental community is requested to help continue that success by helping these graduates network with potential employers and considering them for your job postings. To learn more about the program or to contact the program about potential employment opportunities please contact Joel Gastelum at 520-792-2424 or Derek Koller at 520-551-7887.



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