

## Coal Combustion Residuals: Hazardous or Helpful?

In June 2010, EPA proposed rules in the *Federal Register* addressing management and disposal of power plant coal combustion residuals (CCRs) in surface impoundments and landfills — a far-reaching step that potentially could pull a beneficial combustion by-product and, according to many, a non-toxic material, into the hazardous waste regulatory net. Since the date of the proposal, EPA has hosted informational webinars, held public meetings, and received public comments on the proposed rules.

The Resource Conservation and Recovery Act (RCRA), passed in 1976, amended the Solid Waste Disposal Act of 1965 and set national goals for 1) protecting human health and the environment from the potential hazards of waste disposal, 2) conserving energy and natural resources, 3) reducing the amount of waste generated, and 4) ensuring that wastes are managed in an environmentally-sound manner. To help meet these goals, EPA set in place programs to ensure hazardous waste is managed safely from point of generation to point of disposal. This “cradle-to-grave” management of hazardous waste is part of the RCRA Subtitle C regulations. RCRA Subtitle D addresses the management of non-hazardous waste and certain hazardous wastes exempted from Subtitle C regulations. In 1980, Congress amended RCRA with the Bevill Amendment, which exempted certain wastes from being regulated as hazardous under Subtitle C pending further study, assessment of risk, and findings reported back to Congress.

For years, EPA has taken the stance that CCRs should not be regulated as hazardous wastes. In a 1993 regulatory determination, EPA concluded that regulation of fly ash and bottom ash as a hazardous waste was not warranted and that further study was needed before regulatory determinations could be made on other CCR materials. In 2000, EPA published a second regulatory determination, concluding



that CCR disposal in landfills and surface impoundments did not warrant RCRA Subtitle C regulation (as hazardous waste); rather, regulation under Subtitle D was appropriate. Additionally, EPA concluded that the beneficial use of CCRs did not present a risk and federal regulation was not necessary.

However, environmental advocates continued to express concern about the presence of constituents in CCRs, such as mercury, cadmium, and arsenic, that have been associated with serious health effects, claiming that these constituents are released into the environment and can contaminate drinking water sources (surface water and groundwater sources) if CCR is not properly managed. This concern over the proper management of CCRs was heightened after the 2008 failure of a surface impoundment at the Tennessee Valley Authority's Kingston, Tennessee power plant. The breach of the dam at this impoundment resulted in the release of more than five million cubic yards of coal ash slurry, impacting area properties and flowing into the Emory and Clinch Rivers.

EPA's proposed 2010 rule changes offer two approaches for addressing risks of coal ash management under RCRA: one under Subtitle C and the other under

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# FROM THE TRENCHES

## *Push the Air Out of Your Lungs and Pull Yourself Through!*

**T**hat was a line I heard as I attempted to navigate a passage in solid bedrock starting out about the size of a child's play-scape slide, but necking down to the size of a medicine ball with jagged edges and a nice little pinch point. The point of pushing the air out of my lungs was so I could compress my chest just enough to squeeze myself through. Looking back, it sounds slightly melodramatic, but this was the end of the road for me. This was not my first time in a cave nor would it be my last. But I just didn't see the point of losing my ability to breathe so that I could yank myself through a hole in the ground; well at least not that day — there were smaller guys ready and willing to go on through. There would be other caves.

I was with a crew of biologists, geologists, experienced cavers, and an “environmental generalist” (that would be me) all entering a small Central Texas cave in the pursuit of science — or, more specifically, because a client had asked us to. Really, we were there to count fractures (or cracks) in the cave ceiling as part of a roof stability assessment.

Why count cracks? Well, to see if the cave roof could collapse. The mining industry has developed visual techniques to assess the likelihood of mine roof collapse. One of those techniques involves analysis of nature, frequency, and direction of fractures in the ceiling. We were counting cracks in this particular cave because it lies beneath a two-lane road that is slated for expansion — at one location inside the cave, we could actually hear the traffic whizzing by. Anyway, because of the proposed development above the cave, we wanted to evaluate whether its roof had sufficient load-bearing capacity to support the expanding over-lying roadway.

Typically, if a cave lies under the site of a roadway project, the simplest way to provide a structurally sound foundation for the road is to collapse and fill the cave. But, since this particular cave is home to the endangered *Rhadine exilis*, it is protected, and collapsing and filling the cave was not an option. By the way, the *rhadine* is a cave insect that looks like a brown beetle, is smaller than your fingernail, and can only be identified if it is sent to the lab for DNA analysis, unfortunately a one-way trip for the *rhadine*.

I never even heard the word “karst” until college. It is not a common word. Merriam Webster defines “karst” as “an irregular limestone region with sinkholes, underground streams, and caverns”. The combination of plentiful soluble limestone and a fluctuating groundwater table has resulted in Central Texas' unusually large abundance of karst geology; it's literally riddled with karst features. Maps indentifying where these features occur are divided into



zones, and each zone outlines where you are likely to get into karst “trouble” — that is, where you might encounter a protected cave bug. Protected cave bugs can be a big problem if you are trying to build a road or develop a Hill Country subdivision.

Central Texans have a controversial history in dealing with karsts and the endangered karst invertebrates that occupy those karstic voids. Imagine the drama when you mix endangered species, the Texas tradition of private property rights, and the Texas Hill Country — the location of some of the most expensive real estate in the state. The U.S. Fish and Wildlife designation of certain cave dwellers as endangered has had a significant impact on where and how land is being developed in Central Texas. And it has created a new niche in environmental consulting.

For better or worse I have been exposed to a fair amount of karst work. I never planned on it, but as an environmental consultant specializing in Central Texas ecology, it was inevitable that I would someday find myself staring into a cave. I know what you are thinking right about now — “Oh so cool! You get paid to go caving.” Well, it is not as glamorous as it sounds — most of the caves we enter are pretty much devoid of spectacular formations and are a little wild. And you spend most of the time on your knees and elbows pulling yourself through rubble and mud hoping that a raccoon, snake, or some undiscovered cave monster is not just around the corner. Then you begin wondering about those cracks . . . 🌟

**Tim Clark**  
Staff Scientist

## *Uncertainty Surrounds the Greenhouse Gas Tailoring Rule, Especially in Texas*

Industry, states, and environmental groups are all keeping a close eye on the status of EPA's new Greenhouse Gas ("GHG") permitting rule, frequently referred to as the GHG Tailoring Rule. The Tailoring Rule, published in June 2010, "tailors" Prevention of Significant Deterioration ("PSD") and Title V permitting applicability criteria by setting much higher GHG emissions threshold criteria than specified in the Federal Clean Air Act, thus limiting the number of GHG sources potentially affected by the permitting programs.

The Tailoring Rule is being implemented in two phases — one, which began on January 2, and the second, will begin on July 1. In the first phase, PSD and Title V permitting requirements for GHG emissions sources will only apply to sources that are major for non-GHG regulated pollutants under the PSD and Title V programs. However, in the second phase, PSD permit review for GHGs will apply to all new sources with the potential to emit GHGs in quantities more than 100,000 tons per year CO<sub>2</sub> equivalent ("CO<sub>2</sub>e"), and to modifications that will increase CO<sub>2</sub>e emissions by more than 75,000 tons per year at existing sources whose CO<sub>2</sub>e potentials to emit are more than 100,000 tons per year. In its November 2010 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases," EPA addresses the permitting requirements under the Tailoring Rule, including the determination of BACT for GHG emissions.

Under the Tailoring Rule, EPA asked states to indicate by August 2, 2010 whether their laws provide the authority for the states to implement the requirements of the Tailoring Rule. Thirteen states replied "no", and in a strongly-worded letter to EPA on August 2, 2010, Texas responded that its laws do not provide the authority to implement the Tailoring Rule and that it will not seek to amend its laws to provide such authority.

To address states like Texas that would not have authority to implement the Tailoring Rule by January 2, EPA finalized a "Finding of Substantial Inadequacy and SIP Call" rule on December 1, 2010. In that rule, EPA said that it will work with states to revise their SIPs to implement PSD permitting for GHG emissions sources. As part of this ruling, EPA established timetables for revising SIPs in the 13 states still lacking authority to permit GHG emissions. Should a state not revise its SIP in a timely manner, EPA said that it would issue a Federal Implementation Plan ("FIP") to enable the state to permit GHG emissions sources.

About 25 suits have been filed to challenge the Tailoring Rule, including one filed by Texas. Related to that litigation, on August 19, 2010, Texas sent EPA a letter requesting that EPA stay the Tailoring Rule pending resolution of Texas' suit against EPA regarding the rule. However, on December 10, 2010, the U.S. Circuit Court of Appeals for the District of Columbia denied Texas' request to stay the Tailoring Rule.

According to EPA, in its December 1 "SIP Call" rule, in any state, such as Texas, that does not have authority to implement the Tailoring Rule and will not be able or willing to obtain such authority, PSD and Title V authority to construct and operate new or modified sources that are subject to the Tailoring Rule cannot occur until the FIP becomes effective. Of relevance to the Texas regulated community, on December 22, 2010, EPA sent a letter to TCEQ stating that, to ensure there will not be a gap in PSD permitting for GHG emissions in Texas, EPA would become the GHG permitting authority in Texas on January 2, 2011. How this will work as a practical matter, including how EPA will be able to be the GHG permitting authority in Texas with its limited resources, will remain to be seen.

Additional uncertainty relative to the Tailoring Rule will result from the significant shifts in Congress due to the elections in November 2010. Post election, many high-level members of Congress said that delaying or abolishing the Tailoring Rule (and other GHG rules) will be a top priority for them. While there were several efforts prior to the November elections to delay the Tailoring Rule (including efforts led by Senators Jay Rockefeller and Lisa Murkowski), similar efforts are likely to gain momentum now that Republicans control the U.S. House of Representatives and have a stronger presence in the U.S. Senate. The most likely means of accomplishing a delay will be through attaching language regarding such delay to an EPA spending bill.

As you would imagine, the result of the various challenges to the Tailoring Rule is uncertainty, especially in Texas. ✨

**Keith Courtney**  
**Jenn Foringer**  
*Winstead PC*

# News Briefs

## national news

### **EPA and Texas Finalize Water and Air Rules for Underground CO<sub>2</sub> Injection and Storage**

On November 22, EPA finalized rules for the underground injection and long-term storage (geologic sequestration) of CO<sub>2</sub>, aimed at protecting underground sources of drinking water from contamination. This rule, as authorized by the Safe Drinking Water Act, establishes a new Class VI category of injection wells for use in CO<sub>2</sub> geologic sequestration, requiring that these wells be suitably sited, properly constructed, regularly tested and monitored, and properly closed. Consistent with the new EPA rules, on November 30, the Railroad Commission of Texas adopted its own regulations for the protection of groundwater from the effects of underground injection and storage of CO<sub>2</sub>. In a related action, on December 31, EPA's mandatory greenhouse gas (GHG) emissions monitoring and reporting requirements for facilities that conduct geologic sequestration and injection of CO<sub>2</sub> went into effect. For more information, contact Paul C. Moore, at 512.879.6642 or [pmoore@zephyrenv.com](mailto:pmoore@zephyrenv.com).

### **Safety and Environmental Management System Now Mandatory for OCS Drilling**

Effective November 15, revised rules of the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) require oil and gas (O&G) drilling operations conducted on the Outer Continental Shelf to develop and maintain Safety and Environmental Management Systems (SEMS). The revised rule requires that each SEMS contain a hazards analysis and address management of change, operating procedures, mechanical integrity, audits, safe work practices, emergency response, pre-startup review, training, and other requirements similar to OSHA's process safety management requirements. According to BOEMRE, O&G drilling operators have until November 15, 2011 to fully implement their SEMS. For more information, contact Bonnie Blam at 512.579.3817 or [bblam@zephyrenv.com](mailto:bblam@zephyrenv.com).

### **EPA Finalizes Fine Particle Measurement Methods**

On December 1, EPA published final, revised versions of two methods for measuring stack emissions of particulate matter (PM) from stationary sources. Method 201A has been revised to add sampling hardware to

enable measurement of filterable PM with a diameter less than or equal to 2.5 micrometers (PM<sub>2.5</sub>, or fine PM), and Method 202 has been revised to eliminate analytical options to improve the consistency of applying the method. EPA expects that the changes to Method 202 procedures, along with the elimination of certain sampling hardware, will improve the precision in measuring condensable particles by greatly reducing sulfuric acid artifact formation. These changes will enable the regulated community to develop more representative PM<sub>2.5</sub> emission inventories, conduct New Source Review-required analyses for PM<sub>2.5</sub> in an appropriate manner, and determine compliance with PM<sub>2.5</sub> emission limits with greater accuracy. For more information, contact Lou Corio at 410.312.7912 or [lcorio@zephyrenv.com](mailto:lcorio@zephyrenv.com).

### **EPA Issues Guidance for Permitting Greenhouse Gas Emissions**

On November 10, EPA issued a guidance document to assist permit applicants and reviewers in addressing the Prevention of Significant Deterioration (PSD) and Title V permitting requirements for GHGs that went into effect January 2, 2011. The document describes how to determine when a PSD permit for GHGs is necessary and discusses a recommended five-step "top-down" process for determining best available control technology (BACT) for GHGs. In its news release accompanying the guidance document, EPA claimed that "in most cases, this process will show that the most cost effective way for industry to reduce GHG emissions will be through energy efficiency". In example BACT analyses provided in the document, BACT is determined to consist of a combination of requirements such as CO<sub>2</sub>e emission limits, energy-efficient design, preventive maintenance, and process monitoring procedures. For further information, contact David Mahler at 410.312.7909 or [dmahler@zephyrenv.com](mailto:dmahler@zephyrenv.com).

### **EPA Issues Greenhouse Gas Reporting Rule for Petroleum and Natural Gas Systems**

On November 9, EPA finalized mandatory GHG reporting requirements for the petroleum and natural gas industry — an industrial sector that includes petroleum and natural gas production operations, natural gas processing, transmission, storage and distribution opera-



tions, and liquefied natural gas (LNG) facilities. The rule requires monitoring and reporting of GHG emissions from wells, drilling rigs, tanks, process vents, and equipment leaks. Owners and operators of petroleum and natural gas sources will need to begin the monitoring of affected equipment and activities in January 2011. For further information, contact David Mahler at 410.312.7909 or [dmahler@zephyrenv.com](mailto:dmahler@zephyrenv.com).

### **Federal Land Managers Revise Class I Area Impact Assessment Guidance**

On October 28 (and subsequently revised on November 10), the Department of the Interior released revised guidance concerning how applicants for major sources of air pollutants should assess impacts on air quality related values in Class I areas (National Parks and Wilderness Areas). The revised guidance, published in the *Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report--Revised (2010)*, replaces the older "FLAG 2000" document. While much of the guidance provided in "FLAG 2010" has actually been in use for some time, it is anticipated that the revised guidance will streamline the Class I modeling process and make it more consistent nationwide. For more information, contact Bill Jones at 410.312.7910 or [bjones@zephyrenv.com](mailto:bjones@zephyrenv.com).

### **EPA Extends Spill Rule Compliance Date for Most Facilities**

On October 7, EPA extended the Spill Control and Countermeasure (SPCC) rule compliance date once again for certain facilities which began operation on or after August 16, 2002. The amended compliance date for most of the affected facilities is November 10, 2011, although EPA retained the November 10, 2010, compliance date for drilling, production or workover facilities that have an offshore component, and for onshore facilities required to have and submit facility response plans. Facilities in operation before August 16, 2002, continue to be required to maintain and implement their SPCC plans. For more information, contact Robin Cosgrove at 512.879.6623 or [rcosgrove@zephyrenv.com](mailto:rcosgrove@zephyrenv.com).

### **EPA Designates Lead Nonattainment Areas**

On November 16, EPA identified sixteen areas of the U.S. as not attaining the ambient air quality standard for lead. Among the designated areas is a portion of Collin County, Texas. Additional areas may be designated as nonattainment by October 2011 as EPA continues to review monitoring data. Revised in 2008, the lead air quality standard establishes a rolling three-month average concentration limit of 0.15  $\mu\text{g}/\text{m}^3$ . For more information, contact Bill Jones at 410.312.7910 or [bjones@zephyrenv.com](mailto:bjones@zephyrenv.com).

### **EPA Announces Links to State Air Quality Plans**

On November 24, EPA published notice of the online availability of the Federally-enforceable State Implementation Plans (SIPs) for each state. SIPs are plans that identify how a state will attain and/or maintain the primary and secondary National Ambient

Air Quality Standards. SIP documents include EPA-approved regulatory requirements such as state-adopted rules and regulations, source-specific requirements reflected in consent orders, and provisions in the enabling statutes as well as non-regulatory elements such as transportation control measures, local ordinances, state statutes, modeling demonstrations, and emission inventories. For more information, contact Celeste Wiley at 512.879.6645 or [cwiley@zephyrenv.com](mailto:cwiley@zephyrenv.com).

### **EPA Requests Extension to Boiler MACT and Incinerator HAP Rule Deadline**

On December 7, EPA filed for an extension to the court-ordered deadline of January 16, 2011 to develop rules for control of hazardous air pollutants (HAPs) emitted from boilers and process heaters (the so-called "Boiler MACT") under EPA's Part 63 HAP rules and from solid waste incinerators under EPA's Part 60 new source performance standards. EPA is hopeful the schedule can be extended to April 2011 to allow time for re-proposal of the rule and receipt of public comment. The current version of the proposed rules, issued on April 29 and published on June 4, would limit emissions of five HAPs/HAP surrogates: CO, Hg, HCl, PM, and dioxide/furans. For more information, contact Eric Quiat at 512.579.3823 or [equiat@zephyrenv.com](mailto:equiat@zephyrenv.com).

### **EPA Requires GHG Reporting for Electronics and Electric Equipment Sources**

On November 8, EPA finalized requirements for the reporting of emissions of fluorinated GHGs, including hydrofluorocarbons, nitrogen trifluoride, perfluorocarbons (PFCs), and sulfur hexafluoride ( $\text{SF}_6$ ) from various industry source categories including electronics manufacturing, fluorinated gas production, and electrical equipment use, manufacture and refurbishment. Of special note to the users of electric transmission and distribution equipment is the unique reporting threshold based on the nameplate capacity of equipment that contains PFCs and  $\text{SF}_6$  and is under common ownership. Affected facilities are subject to the rule's recordkeeping provisions beginning January 1, 2011. For more information, contact Thomas Sullivan at 512.879.6632 or [tsullivan@zephyrenv.com](mailto:tsullivan@zephyrenv.com).

### **EPA Delays New Ozone Standard**

On December 8, EPA announced its intention to again delay implementation of a new air quality standard for ozone, citing the need for more time to complete its scientific review. In a January 2010 draft, EPA proposed to tighten the previous 8-hour standard of 0.075 parts per million (ppm) to a limit in the range of 0.060 to 0.070 ppm. The target date for rolling out the stricter standard, which EPA had previously set as August 2010 and, later, revised to October 2010, is now July 2011. For more information, contact Ellen Ward at 512.879.6634 or [eward@zephyrenv.com](mailto:eward@zephyrenv.com).

### **EPA Envisions Siting Renewable Energy on Contaminated Properties**

On October 14, EPA released the draft of a plan, titled “RE-Powering America’s Land Initiative Management Plan”, for developing renewable energy facilities on potentially contaminated properties such as Superfund and brownfield sites and former landfills. The potential advantages of using such sites is that they are often blocks of land under single ownership, have critical infrastructure in place, and provide an economically viable reuse of properties with low real estate development demand. For more information, contact Dan Mueller at 512.579.3844 or [dmueller@zephyrenv.com](mailto:dmueller@zephyrenv.com).

## **state news**

### **Sunset Commission Recommends Changes to TCEQ**

Periodically, each Texas state agency goes through “Sunset Review” to assess whether the agency serves a useful purpose and should continue as an agency. In a report issued in November, the Texas Sunset Advisory Commission recommended continuation of the TCEQ, but urged changes to the Agency’s operations to enhance public assistance, improve the way compliance history is measured, make enforcement more visible, improve protection of surface water during times of drought, correct gaps in the petroleum storage tank program, and increase funding limits on the Title V air permitting program. The report also recommended that authority for making groundwater protection recommendations regarding oil and gas activities be transferred from the TCEQ to the Railroad Commission of Texas. During the upcoming 2011 session, the Texas Legislature will consider these recommendations and other inputs in the drafting of bills related to the TCEQ’s continued operation as an agency. For more information, contact Ed Fiesinger at 281.668.7353 or [efiesinger@zephyrenv.com](mailto:efiesinger@zephyrenv.com).

### **EPA Takes Over Greenhouse Gas Permitting Authority for Texas**

In a December 23 open letter to the general public, EPA announced its intention to assume, on January 2, authority for the federal PSD permitting of GHG emissions from sources subject to the provisions of the EPA’s “Tailoring Rule” (see “An Attorney’s Perspective” in this issue of *Currents*). According to EPA, the TCEQ would retain PSD permitting authority for other air contaminants. EPA’s action falls on the heels of refusal by Texas to implement a GHG permitting program. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com).

### **EPA Requests TCEQ Action on Water Discharge Permits**

In a December 2 letter to the TCEQ and in a general news release to the public, EPA has requested that the state agency move forward with reissuing water discharge permits for a number of sewage treatment plants and industrial facilities in Texas. Of particular concern to EPA is the toxicity of discharges from facilities authorized under some of the 80 discharge permits that have expired but are being continued administratively. On December 3, the TCEQ countered in its own news release that the failure to update toxicity limits — which has resulted in a delay in re-issuing permits — lies in EPA’s unwillingness to work cooperatively. For more information, contact David Sorrells at 512.879.6626 or [dsorrells@zephyrenv.com](mailto:dsorrells@zephyrenv.com).

### **New Mexico Governor Ousts Environmental Board**

In a tersely worded letter dated January 5, New Mexico Governor Susana Martinez terminated the entire 7-member New Mexico Environmental Improvement Board (EIB). Martinez said in a separate statement that, “Unfortunately, the majority of EIB members have made it clear that they are more interested in advancing political ideology than implementing commonsense policies that balance economic growth with responsible stewardship in New Mexico”. At the heart of the tensions between the governor and the EIB is the Board’s support and approval of a regional GHG cap-and-trade program for New Mexico. The EIB is responsible for the promulgation of environmentally-related rules and standards in the State. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com).

### **TCEQ Adopts Changes to Flexible Permit Rules**

On January 6, the TCEQ adopted changes to its Chapter 116 Subchapter G Flexible Permit rules to address EPA objections that, primarily, relate to the potential for circumvention of Federal New Source Review under the flexible permitting process. In its preamble to the rule changes, the TCEQ maintains that, contrary to EPA, the flexible permit rules meet all Federal Clean Air Act requirements even without the proposed revisions. On June 30, 2010 EPA formally disapproved the TCEQ’s existing flexible permitting program. For more information, contact David Cabe at 512.879.6644 or [dcabe@zephyrenv.com](mailto:dcabe@zephyrenv.com). ✨

## Winds of Change

In my office, I have a “tongue-in-cheek” motivational poster that says “When the Winds of Change Blow Hard Enough, Even the Most Trivial of Things Can Turn into Deadly Projectiles.” Those winds of change have certainly been blowing lately!

At Zephyr, we’ve concluded a very busy 2010, a year in which we welcomed no fewer than *twelve* new colleagues into the firm! You might also notice that as of this issue, *Currents* has a new look. We’ve adopted the new look and a slightly different logo, to reflect the new reality of who we are and what we do. We’ve long been known as an air quality consulting powerhouse, and it still accounts for a large share of our business, but over time we’ve added many other services — corrective action, waste management, natural resources, water quality, health and safety, training, data systems, and other strategic services. Blue, green, and brown colors have replaced our mostly blue “look” to reflect our work in air, water, soil, and natural resources. Even more exciting news is that we’ve revamped our website, a project that has been on our “back burner” for much too long. Please visit our new general services website at [www.zephyrenv.com](http://www.zephyrenv.com) and our new training services website at [www.hazmatacademy.com](http://www.hazmatacademy.com).

For our clients and for us, the winds of change have recently been blowing at hurricane force, including sporadic recovery from an incredibly deep recession, a new administration in Washington with new environmental policies, and a blizzard of new regulations. Significantly, these regulations include new requirements to treat greenhouse gases such as carbon dioxide as “pollutants”, stemming from a Supreme Court ruling in April 2007. In Texas, wrangling between the EPA and the TCEQ (Texas’ state environmental agency) has created a great deal of uncertainty in the regulated community.



New opportunities and problems continue to unfold. Innovative gas exploration and production techniques have opened up new natural gas reserves in shale formations like the Barnett shale in Texas and Louisiana, and the Marcellus shale in Pennsylvania and adjacent states. New technology, government incentives, and economies of scale have generated enormous new investment in alternative energy, including wind and solar power and use of biomass for energy production. All of these activities bring along environmental issues that consulting firms like Zephyr are busily addressing on behalf of their clients.

None of us can know for sure where these new developments will take us, so we may as well hoist our sails and enjoy the ride! Here’s wishing you prosperity and “regulatory flexibility” in 2011. ☀

**Joe Zupan**  
President

Zephyr is a professional services firm providing worldwide consulting, training and data systems to the industrial, commercial and public sectors. The firm’s major areas of practice are air and water quality, waste issues, worker and community safety, and incident management.

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Subtitle D, Subtitle C and Subtitle D programs differ in a number of ways; in brief, under Subtitle C, EPA has primary responsibility for the permitting of hazardous waste treatment, storage, and disposal facilities until it authorizes a state to operate portions or all of the hazardous waste program. At this time, all but two states have been delegated authority to run the RCRA program. Subtitle D, on the other hand, provides for the permitting and monitoring of municipal and non-hazardous solid waste (including waste exempted from Subtitle C regulations). RCRA does not authorize EPA to issue Federal permits for disposal of Subtitle D wastes.

Coal combustion residuals have also been referred to as coal combustion products by certain groups, including, at one time, EPA, in part to emphasize the material's commercial value. CCRs have been used in a variety of ways, beginning in the 1940s when the Bureau of Reclamation began using concrete made with fly ash to construct dams. Today, CCRs are used in a wide range of building materials and engineered composite materials. Fly ash (one such coal combustion product) is commonly used in making the clinker in the Portland cement production process and continues to be used as a substitute for Portland cement in making cement-based products — more than half of the concrete currently produced in the United States involves the use of fly ash in some quantity as a substitute for traditional cement.

Geotechnical applications of CCRs include soil stabilization, road base production, structural filling, embankment construction, and mine reclamation. Additionally, flue gas desulfurization materials (by-products of emission control systems that remove sulfur dioxide and other acid gases from power plant flue gas streams) are used in the production of gypsum wallboard.

The need to properly manage a waste product, while at the same time allowing for its appropriate beneficial reuse, does not always result in clear-cut regulatory options. Generators and end users of CCR are concerned that classifying CCR as a hazardous waste will significantly impede the ability to recycle the product, even though beneficial reuse options remain available. Although mercury, cadmium, and arsenic present risks to human health and the environment at certain concentrations, they are also naturally occurring and constantly present in our environment. Do the risk factors associated with the management of CCRs warrant more stringent regulation? The result of final rulemaking is still months down the road. ✨

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