

ASH **at work**

Applications, Science and Sustainability of Coal Ash

Annual
Membership
Directory
Inside

CROSSROADS

WHICH DIRECTION WILL AMERICA CHOOSE
FOR COAL COMBUSTION PRODUCTS?

PLUS:

Annual Production
& Use Survey Results



ALSO:

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On the Cover

Coal Ash at a Crossroads – John N. Ward looks at which direction America will choose for coal combustion products.

Please see page 14.

Images: photos.com





WHAT A DIFFERENCE A YEAR MAKES

By Thomas H. Adams, Executive Director ACAA

Looking way back to 2010, important activities were occupying the attention of the American Coal Ash Association (ACAA). A mid-term election was taking place. Control of the U.S. Senate and House of Representatives was at stake. Many were hopeful that a change in control would help moderate the efforts of the Obama administration to create new, controversial regulations in a wide variety of areas. With regard to the Coal Combustion Products (CCP) disposal issue, a Democrat congressman from North Carolina was trying to help resolve concerns regarding EPA regulations while protecting recycling of CCPs.

In addition, during 2010 the ACAA was completing its response to the U.S. Environmental Protection Agency's (EPA) proposal to regulate disposal of CCP. Volunteer members of ACAA spent thousands of hours preparing detailed information on the beneficial use of CCP for EPA consideration. On Nov. 19, 2010 the massive ACAA submittal was entered into the docket along with over 450,000 other submittals.

Fast forward one year, and we find a very different reality facing the ACAA. Our advocate in the U.S. House on the Democrat side became a member of the minority as the mid-term election of 2010 created a new majority in the House. With that new majority came a clear position that the EPA was being too aggressive in their regulatory initiatives, including the effort to regulate disposal of CCP.

A Republican freshman from West Virginia, David McKinley, stepped forward to address the CCP issue head-on.



The bill sponsored by Rep. McKinley has moved on to the U.S. Senate (the 111th Congress is shown above) and has been introduced as S 1751.

Representative McKinley offered two proposals to intercept the EPA desire to create hazardous waste regulations for CCP disposal. First he introduced a prohibition on expenditures to create Subtitle C rules through the end of fiscal 2011. (This amendment to a continuing resolution funding the EPA passed the House but failed in the Senate.) Next Rep. McKinley sponsored a bill to prohibit the EPA from creating Subtitle C, hazardous waste rules for the disposal of CCP.

With support from the House leadership, the bill moved before the Energy and Commerce Committee. Committee staff consulted with stakeholders and suggested modifications to improve the bill and gain sufficient support for passage.

The result was HR 2273, which was passed with strong bipartisan support.

The bill has moved on to the U.S. Senate and has been introduced as S 1751. Original sponsors include five Democrats and five Republicans. Currently there are discussions ongoing with Senate staffers, the generators, and state regulators to resolve concerns and gain the necessary votes to pass the bill and send it on to the president. While there is much work to be done to get the bill through the Senate, just the fact that legislation has made it this far is amazing.

Over at the EPA, the Agency continues to work on a final regulation. EPA Administrator Lisa Jackson stated late in

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“Today the primary objective of the ACAA – to remove the possibility of hazardous waste regulation of CCP disposal as soon as possible – is much closer than anyone would have thought 12 months ago.”

2011 that the agency was undertaking risk evaluations of beneficial uses and would use the findings in creating a final regulation. (The agency had been criticized by its Inspector General for supporting beneficial use through the Coal Combustion Products Partnership (C₂P₂) program without doing its own risk evaluation).

Based on currently available information, it appears that EPA will be unable to propose a final coal ash disposal regulation before late 2012 at the earliest. The EPA appears to have voluntarily jumped into some quicksand in its effort to regulate CCP disposal. Each move to extricate itself takes the agency a little deeper.

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The Capitol Building – the ACAA can never be sure of all the surprises lurking in the shadows of Washington, D.C.

Today the primary objective of the ACAA – to remove the possibility of hazardous waste regulation of CCP disposal as soon as possible – is much closer than anyone would have thought 12 months ago. We still have a long way to go. Much work is needed to continue to demonstrate the effects of regulatory uncertainty on the recycling of CCP. And while we are not sure of all the surprises lurking in the shadows of Washington, D.C., we will continue to tell our story and make it known that CCP recycling is one of the great environmental success stories of our time and must be protected from collateral damage resulting from disposal regulations. Hang on. Your help will be needed again throughout 2012! ♦

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MONUMENTAL ACHIEVEMENTS – AND MORE WORK TO DO

By Mark Bryant, Chairman ACAA, Ameren Energy Fuels & Services

With the book now closed on 2011 and Tampa in the rearview mirror, I can say it was truly a significant year in my life. From a final college tuition payment to a stroll down the aisle with my daughter on my arm or some much needed shoulder surgery 2011 was big. What a year! But like so many of you the pace of life isn't slowing down.

In case you missed it, we also had a big year at the Association and we accomplished so very much, honestly much more than I ever imagined possible. Passage of the House bill last October was really big. (Passage of a Senate version this year would be huge!)

I used to think that gridlock and inaction in Washington was a good thing because a slow government couldn't mess things up very fast. But these days I would like to see our government do its job on our behalf especially regarding spending reductions, budget deficits and "the economy." And let's not forget consideration of our Senate Bill – SB 1751.

But whether the Senate bill moves forward or not does not diminish the success that we continue to build in pursuit of regulatory clarity and a non-hazardous outcome for coal ash. It appears that the coming election will be more a referendum on ideology and culture than a discussion of important issues or even a simple choice of candidate or party. It could be very easy for our issue to get lost in the weeds of these lofty debates. As always, we will keep the faith and continue to work on behalf of the Association and our goals but more importantly on behalf of our friends, family and ourselves.

"I hope for all our sakes that one day soon we can get back to the 'boring' business of promoting the use of ash and the other CCPs, CCRs or CCBs."

As I write my last *Ash at Work* message as Chairman, I can't begin to describe how proud and impressed I am by the membership and staff of ACAA. Over the last several years we have engaged one significant issue after another, and always just when we needed it most, one (or a few) of our members would come forward with a skill, ability, passion, personal contact, piece of information or financial support at precisely the right time, sometimes just in the nick of time.

Through it all, we have never wavered from our collective singular goal of protecting beneficial use. I am truly thankful for such a talented and motivated group of folks that volunteer and have supported our success. From here on to whatever our endgame is, all we can do is be more successful; failure is no longer possible. I no longer underestimate the ACAA. We should all be proud.

As we work to morph the potential regulations to a non-hazardous outcome we are also evolving as an organization. It seems that lately change is a constant for us. The Association has transitioned from our Denver office to a space within Creative Association Management (CAM) in Farmington Hills, Michigan. This has not been an easy decision and we had quite a bit of help in evaluating the options and two final candidates. At our meeting in Indianapolis the full board unanimously approved hiring CAM to handle regular

association duties and affairs. I am thankful for that action and the vote of confidence in the work performed by the evaluation team. I continue to feel as confident as ever that this move is right for us at this time for many reasons including cost efficiency, organizational flexibility and adaptability in the future.

But as I look around and consider the stewardship of this association that we are entrusted to manage and grow, I can identify a few other areas where we may have some updating, refining and polishing yet to do. For instance, we currently have a board of directors that numbers 62 at last count out of 154 total members (members, associates and affiliates). Sixty-two is a large board by any measure.

Our growth is due in no small part to the value received for the dues paid, especially over the last two or three years. Our dues structure allows for any member willing to pay at the required level to have a representative appointed to the board. Full board participation is appreciated at times when we face significant issues like our recent management structure changes. Also, during periods of significant activity, many hands make little work.

During my term, I have elected to include the board in many decisions because transparent direct communication is paramount to me, especially on such bellwether issues as hiring a new Executive



The challenges facing a growing organization in a challenging regulatory and market environment need all of our engagement.

Director or relocating an office and staff, but to bring an issue before the full board takes a lot of time and energy. The unique responsibilities of the Board of Directors are to protect the association and to approve any changes to the governance and by-laws.

These by-laws provide that the more routine issues are better handled by the 12 members of the Executive Committee which are elected by the board for that very purpose. Our by-laws are strong and well written and in this regard we should follow them. But maybe, every member should be a voting member and our Executive Committee should be somewhat more diverse and representative of all categories of our membership?

Similarly, we continue to see some merger and aggregation activity in the utility sector of our member ranks. The economy and power prices are challenging all our travel budgets and forcing many to evaluate attendance at some or all three meetings a year. As we continue to evolve, well considered changes to how our association operates and how we operate to the benefit of our members should be continually reviewed. Change for the sake of change will never gain my support but as good stewards we must always strive to improve.

As I turn over the Association's Chair to the capable hands of Lisa Cooper and Vice Chair Hollis Walker at this summer's meeting, I will resolve to remain involved in ACAA's work, helping where I can and when I can. Certainly, in our history there have been trials and tests that were survived because of the hard work of those who came before. As I reflect on the terms of Tom Jansen and Al Christianson before me, the "job" of Chair of the Board

would've been considered boring in comparison to our level of activity, but it has been an exciting four years and I hope for all our sakes that one day soon we can get back to the "boring" business of promoting the use of ash and the other CCPs, CCRs or CCBs.

I am proud of and wish to thank the leadership team of Charles Price, Tom Adams, Lisa Cooper, John Ward, Dave Goss and Bruce Kramer that helped navigate our many challenges and donated countless time, talent and treasure on behalf of the Association.

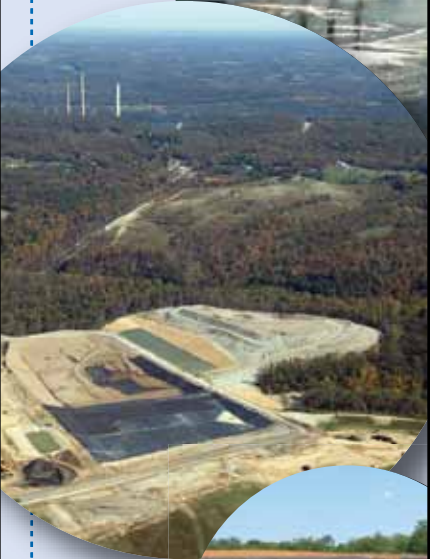
I must also thank the Executive Committee for their guidance and support. Thanks also to Committee Chairs for the ongoing business at hand and the volunteer members of our special teams that continue to answer the call. A special thanks to my family for their support and to the folks at Ameren for allowing me the time to participate. Lastly, I want to thank my friends who have agreed and supported our decisions throughout the last four years, but I especially want to thank my friends who may not have agreed and who have challenged us to do the time and make the hard calls necessary for the good of the Association. I think we got it right so far. The challenges facing a growing organization in a challenging regulatory and market environment need all of our engagement.

I appreciate your faith and trust and the opportunity to serve and participate in our successes over the past several years. I look forward to many more successful years to come. ♦

*See you soon,
Mark*

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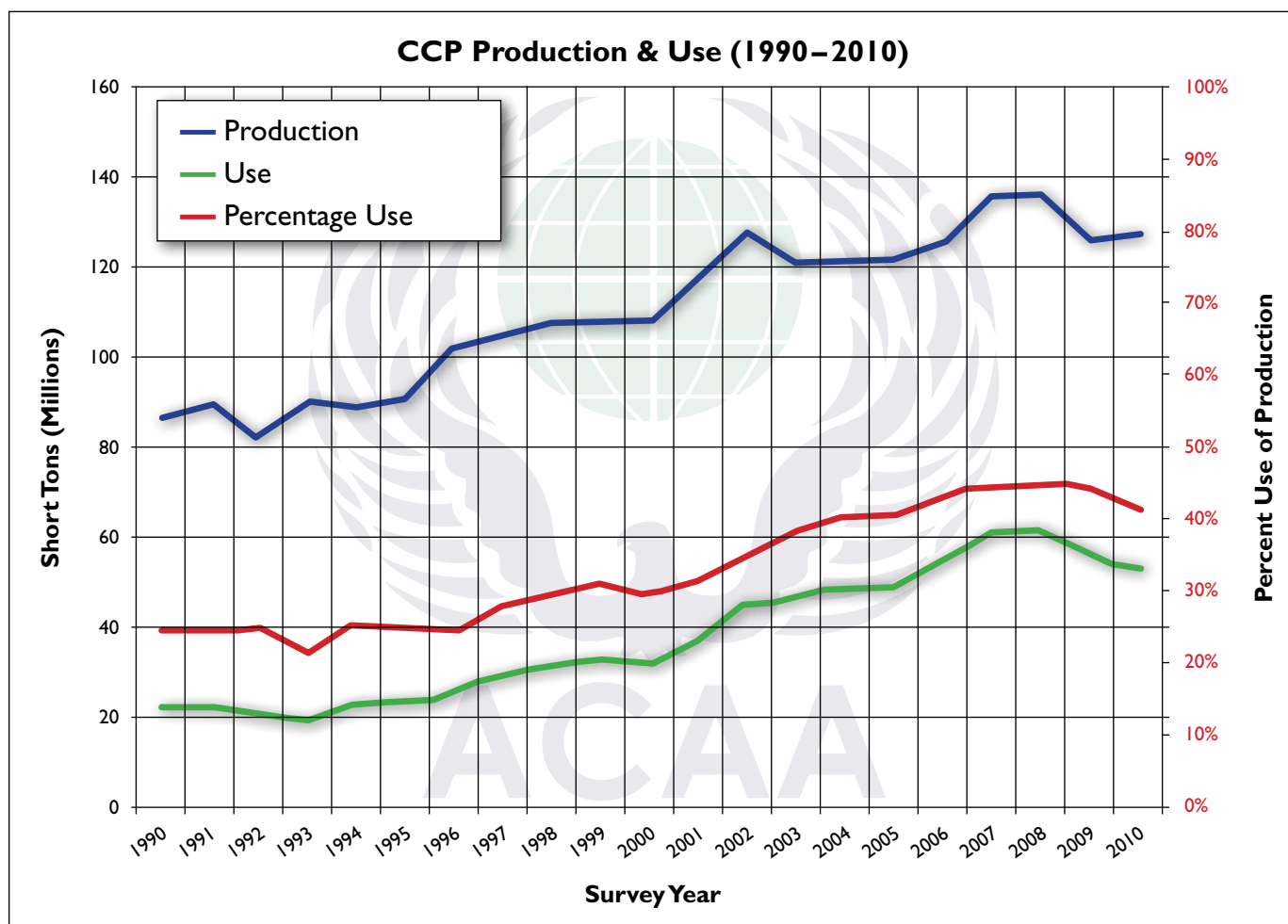
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ANNUAL PRODUCTION AND USE SURVEY

Coal Ash Beneficial Use Rates Decline As Regulatory Uncertainty and “Toxic” Publicity Continue



Coal ash beneficial use in the United States declined in 2010 – reversing a decade of growth of a practice that conserves energy and natural resources, reduces greenhouse gas emissions, and safely keeps ash out of landfills and disposal ponds.

The turnaround occurred as the U.S. Environmental Protection Agency proposed coal ash regulations that could designate the material as “hazardous waste” when disposed. Growing numbers of ash producers, specifiers and users have begun reducing coal ash use in light of the regulatory uncertainty and publicity surrounding EPA’s activities.

“We are entering the fourth year of an EPA rulemaking process that seems to have no end in sight,” said Thomas H. Adams, executive director of the American Coal Ash Association – an organization that advances the environmentally responsible and technically sound use of coal ash as an alternative to disposal.



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2010 Coal Combustion Product (CCP) Production & Use Survey Report

Beneficial Utilization versus Production Totals (Short Tons)

CCP Categories	Fly Ash**	Bottom Ash**	Boiler Slag*	FGD Gypsum**	FGD Material Wet Scrubbers*	FGD Material Dry Scrubbers*	FGD Other*	FBC Ash*	CCP Production / Utilization Totals
2010 Total CCPs Produced by Category	67,700,000	17,800,000	2,332,994	22,000,000	8,670,814	1,405,952	3,740	10,267,914	130,181,364
2010 Total CCPs Used by Category	25,723,217	7,541,732	1,418,996	10,713,138	624,223	584,112	0	8,732,008	55,337,426
1. Concrete/Concrete Products/Grout	11,016,097	615,332	0	21,045	0	16,847	0	0	11,009,321
2. Blended Cement/Raw Feed for Clinker	2,045,797	949,183	3,000	1,135,211	0	0	0	0	4,133,191
3. Flowable Fill	135,321	52,414	0	0	0	13,998	0	0	201,773
4. Structural Fills/Embankments	4,675,992	3,124,549	78,647	454,430	424,581	358,019	0	0	9,116,218
5. Road Base/Sub-base	242,952	715,357	3,128	0	3,018	0	0	0	984,455
6. Soil Modification/Stabilization	785,552	162,065	0	0	0	19,189	0	0	966,806
7. Snow and Ice Control	0	549,520	41,194	0	0	0	0	0	590,714
8. Blasting Grit/Roofing Granules	86,484	19,914	0	835,536	186,624	0	0	0	1,303,969
9. Mining Applications	2,399,837	528,881	0	835,536	186,624	112,373	0	8,660,408	12,723,659
10. Gypsum Panel Products	109	0	0	7,661,527	0	0	0	0	7,661,636
11. Waste Stabilization/Solidification	3,258,825	41,233	0	0	0	39,283	0	71,600	3,410,941
12. Agriculture	22,220	4,674	0	481,827	0	0	0	0	508,721
13. Aggregate	6,726	555,031	27,155	0	0	0	0	0	588,912
14. Miscellaneous/Other	1,047,305	223,579	8,301	123,562	10,000	24,403	0	0	1,437,150

Summary Utilization to Production Rate

CCP Categories	Fly Ash	Bottom Ash	Boiler Slag	FGD Gypsum	FGD Material Wet Scrubbers	FGD Materials Dry Scrubbers	FGD Other	FBC Ash	CCP Utilization Total**
2010 Totals by CCP Type Application	25,723,217	7,541,732	1,418,996	10,713,138	624,223	584,112	0	8,732,008	55,337,426
Category Use to Production Rate (%)**	37.90%	42.30%	60.80%	48.60%	7.10%	41.50%		85.00%	42.50%

2010 Cenospheres Sold (Pounds)

15,485,980

ACAA received survey data representing 231,379 MegaWatts Name Plate capacity of the total industry-wide approximate 327,963 capacity (i.e. 69.7%) or approximately 67% of the coal-fueled electric utility generation as reported by EIA. FINAL – 10/2011

* These are actual tonnages reported by utilities responding and do not reflect estimates for utilities that did not respond this year.

** These numbers are derived from previous, current and applicable industry-wide available data, including Energy Information Administration (EIA) Reports 923 and 850 and other outside sources.

*** Utilization estimates are based on actual tons reported and on extrapolated estimates for fly ash, bottom ash, and FGD gypsum.

“Our worst fears are being confirmed. The ongoing regulatory uncertainty and a drumbeat of misleading publicity about the toxicity of coal ash are combining to cause decreases in the beneficial use of the material. The loser, unfortunately, is the environment as millions more tons of coal ash needlessly wind up in landfills.”

According to ACAA’s “Production and Use Survey,” 42.5 percent of the 130.2 million tons of coal ash produced in 2010 was beneficially used. That use rate is a decline from 44.3 percent in 2009 and a significant reversal of the previous decade’s trend.

“Throughout the 1990s, beneficial use rates were in the 20s,” said Adams. “In 2000, when the rate was 29.7 percent, the EPA issued its Final Regulatory Determination that regulation of ash as

a ‘hazardous waste’ was not warranted. Over the next eight years, EPA also began actively promoting the beneficial use of coal ash and the rate soared to 44.5 percent in spite of steadily increasing volumes of the amount of coal ash produced.”

The beneficial use rate stalled in 2008 and 2009 as EPA reopened its coal ash regulatory agenda following the failure of a coal ash disposal facility in Tennessee. In 2010, the recycling rate declined to 42.5 percent and the absolute volume of material recycled declined to 55.3 million tons – down from 60.6 million tons in 2008.

“Supporters of a ‘hazardous waste’ designation for coal ash disposal like to say that higher disposal costs will lead to more recycling. This real world evidence – coupled with the growing list of people ceasing the use of coal ash – completely

contradicts that simplistic argument,” said Adams. “The fact is that coal ash disposal costs did not change much between the 1990s and 2000s. What caused the dramatic growth of beneficial use in the 2000s was regulatory certainty that encouraged people to invest in recycling rather than disposal and a supportive EPA that actively encouraged recycling. All of that is gone now. EPA’s ‘Final’ Regulatory Determination turned out not to be ‘Final’ and the Agency has abandoned its support or even meaningful discussion of coal ash recycling.”

Adams said coal ash beneficial use is also being harmed by publicity activities of groups lobbying for a “hazardous waste” designation. “A steady stream of publicity about ‘toxic’ coal ash is causing people to shy away from using the material out of concern for its safety or potential legal

liability of using a 'toxic' substance," said Adams.

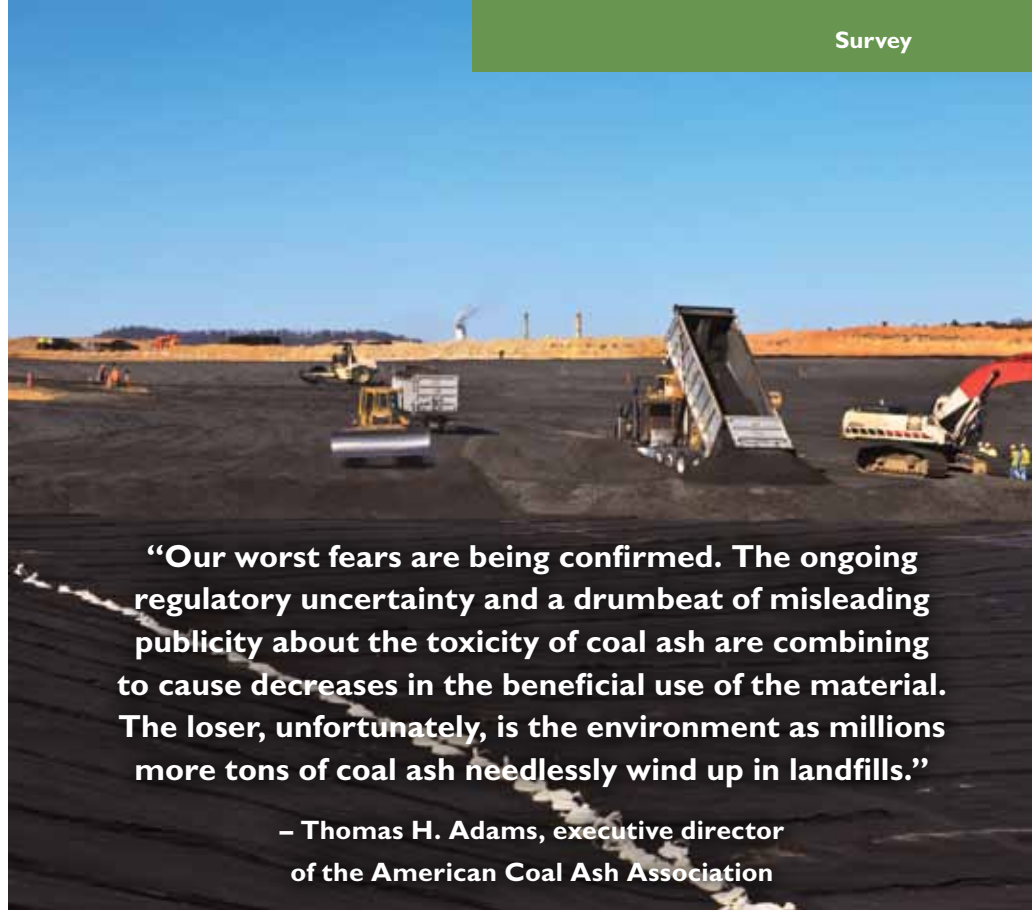
"Science tells a different story. Coal ash does not qualify as a 'hazardous waste' based on its toxicity. The trace levels of metals in coal ash are similar to the levels of metals in the materials coal ash replaces when it is recycled. But well-funded groups are spending millions of dollars to brand the material as 'toxic' and the effects of this short-sighted campaign are beginning to show in the reduction of environmentally beneficial recycling."

ABOUT COAL ASH BENEFICIAL USE

Almost half of America's electricity is generated by burning coal. Generating that much electricity produces large volumes of coal ash — the generic term for several solid materials left over from the combustion process.

There are many good reasons to view coal ash as a resource, rather than a waste. Using it conserves natural resources and saves energy. In many cases, products made with coal ash perform better than products made without it. For instance, coal ash makes concrete stronger and more durable. It also reduces the need to manufacture cement, resulting in significant reductions in greenhouse gas emissions. About 11 million tons of greenhouse gas emissions were avoided by using coal ash to replace cement in 2010 alone.

Major uses of coal ash include concrete, gypsum wallboard, blasting grit, roofing granules, and a variety of geotechnical and agricultural applications.



"Our worst fears are being confirmed. The ongoing regulatory uncertainty and a drumbeat of misleading publicity about the toxicity of coal ash are combining to cause decreases in the beneficial use of the material. The loser, unfortunately, is the environment as millions more tons of coal ash needlessly wind up in landfills."

**— Thomas H. Adams, executive director
of the American Coal Ash Association**

DETAILED FINDINGS FROM SURVEY

The American Coal Ash Association has conducted a survey quantifying the production and use of coal ash in the United States each year since 1966. Data is compiled by directly surveying electric utilities and utilizing additional data produced by the U.S. Energy Information Administration. The survey's results have been widely adopted by federal agencies including the U.S. Environmental Protection Agency and U.S. Geological Survey.

Fly Ash beneficial use saw a total increase of almost 4 percent utilization in the total categories reported. Concrete and concrete products consumed nearly 1.3 million more tons in 2010 as compared to

2009, but this number is still well below the 13.7 million tons used in 2007.

Fly ash continues to be the most widely used CCP, with respondents reporting its use in thirteen of the fourteen survey application categories. Fly ash was consumed primarily in concrete products, structural fills, waste stabilization and raw feed as clinker for cement production. ACAA believes the volume of fly ash reported this year for use in cement kilns as raw feed is significantly under-reported based on historical data. We think, but cannot easily substantiate, that nearly 5 million tons of fly ash is used annually in the production of cement clinker, therefore we opted for a more conservative amount.

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Flue Gas Desulfurization (FGD) Gypsum remained the second highest used CCP when compared to fly ash when both totals are compared. Approximately 48.6 percent of the estimated 22 million tons produced, or 10.7 million tons, were used for beneficial purposes. The ongoing economic stagnation has resulted in fewer gypsum panel products produced and consumed in 2010. Because of the increase of installed flue gas desulfurization emission control systems, production numbers were 4 million tons higher than in 2009 and this upward trend should continue for several more years.

Bottom Ash utilization was 7.5 million tons or 42.3 percent of the total 17.8

million tons produced. This is a modest increase over 2009, mainly due to more actual data received this year. Bottom ash was primarily used in structural fills, concrete and concrete products, road base, raw feed for portland cement clinker, aggregates, mining applications and snow and ice control.

Production of **FBC Ash** reported in 2010 was 10.2 million tons as compared to 12.5 million tons in 2009, almost all of which was produced by independent power producers located in Pennsylvania (ARIPPA). The majority of this ash is used in mine reclamation activities (re-contouring, treatment of acid mine drainage, and land restoration). The

drop in production reflects the lower generation rates of these independent power producers. The utilization rate for FBC ash is reported as 85 percent in 2010 as compared to nearly 94 percent in 2009.

Boiler Slag, although produced in relatively small numbers (2.3 million tons in 2010), reported the second highest use percentage among regularly reported categories. Nearly 61 percent of boiler slag produced is used for applications such as blasting grit, roofing granules, aggregates and snow and ice control. The availability of boiler slag is predicted to be reduced as more and more cyclone and slag-tap boiler units are retired. ♦

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COAL ASH *at a*

Debate Over Disposal Regulations More About “Who” Than “What”

By John N. Ward

American Coal Ash Association Government
Relations Committee Chairman

More than three years after the failure of a coal ash disposal pond in Tennessee prompted a newly seated U.S. Environmental Protection Agency administrator to launch a reassessment of disposal regulations, the debate over those regulations continues full force. Buried throughout the millions of pages of regulatory rule-making documents and an expanding legislative record is an often overlooked, but critically important fact: At its core, the debate is more about who will enforce new regulations than what those regulations will look like.

At stake is the future of beneficial use of Coal Combustion Products. An overwhelming number of organizations agree that one potential regulatory approach – designating ash bound for disposal as “hazardous waste” – would create disastrous unintended consequences for beneficial use. EPA’s rulemaking activity also shows signs of expanding beyond creating disposal regulations to include redefining core concepts of what beneficial use is. Finally, the increasingly protracted debate has created regulatory uncertainty that is already beginning to affect beneficial use practices. (See related story in this issue: “Coal Ash Beneficial Use Rates Decline As Regulatory Uncertainty and ‘Toxic’ Publicity Continue.”)



FIRST ONE REGULATORY PROPOSAL, THEN TWO, NOW THREE...

Today there are three potential frameworks for future coal ash disposal regulation. To understand how the proposals relate to each other, it is

helpful to consider how they emerged chronologically.

Discussion of coal ash regulation is nothing new in the United States. The EPA has studied the topic for decades under both Democrat and Republican

CROSSROADS

Outcome Will Determine Course of Ash Use and Disposal for Decades to Come

Figure 1

Coal Ash Regulatory History

1980	Congress enacts the “Bevill Amendment” to the Resource Conservation and Recovery Act, instructing EPA to “conduct a detailed and comprehensive study and submit a report” to Congress on the “adverse effects on human health and the environment, if any, of the disposal and utilization” of coal ash
1988	EPA issues Report to Congress concluding coal ash does not warrant “hazardous waste” regulation
1993	EPA issues Regulatory Determination that coal ash “hazardous waste” regulation is “not warranted”
1999	EPA issues second Report to Congress concluding coal ash does not warrant “hazardous waste” regulation
2000	EPA issues Final Regulatory Determination concluding coal ash materials “do not warrant regulation [as hazardous waste] ” and that “the regulatory infrastructure is generally in place at the state level to ensure adequate management of these wastes”

administrations. (Figure 1 shows key dates in that chronology.) Those studies consistently concluded that coal ash does not warrant “hazardous waste” regulation.

Following EPA’s 2000 Final Regulatory Determination, the federal EPA was

expected to develop coal ash disposal guidelines that could be applied by state environmental regulators without a “hazardous waste” designation. That activity was never completed, however, and on December 22, 2008, the dam broke. Literally.

The failure of an ash disposal pond at the Kingston Power Plant in Tennessee touched off a media firestorm and was a topic at EPA Administrator Lisa Jackson’s Senate confirmation hearing a month later. At that hearing, the incoming

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Figure 2

Comparison of Regulatory Proposals

	EPA	EPA	Congress
	Subtitle C “Hazardous Waste”	Subtitle D “Non-hazardous Waste”	Coal Residuals Reuse and Management Act
Landfill Engineering Standards	Liner requirements and groundwater monitoring	Liner requirements and groundwater monitoring	Liner requirements and groundwater monitoring
Requirements for Corrective Action	Yes	Yes	Yes
Requirements for Closure and Post-Closure Care	Yes	Yes	Yes
Enforcement Authority	Federal	Citizen Lawsuits	State
Effective Date	Timing will vary from state to state, as each state must adopt the rule individually-can take 1 – 2 years or more	Six months after final rule is promulgated for most provisions	Six months after enactment by Congress

Administrator pledged to propose new coal ash regulations by the end of 2009.

As the EPA began to draft regulations, it quickly became apparent that there was movement within the Agency to rescind the 2000 Final Regulatory Determination and propose regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA). Subtitle C is the section governing “hazardous waste.” This first proposal was immediately and forcefully opposed by a large and diverse coalition that was concerned about the cost and lack of scientific justification for such an approach, as well as its potential unintended consequences on beneficial use.

When EPA’s proposed regulation was submitted to other federal agencies for their required review, the process bogged down for several months. Documents revealed later showed that every other federal agency reviewing the proposed rule had serious concerns about the



The Environmental Protection Agency in Washington, D.C.

Photo: Ritu Sainani/Photos.com

Subtitle C approach. Responding to those concerns, EPA added a second regulatory approach – this one under the “non-hazardous” Subtitle D of RCRA.

In June 2010, EPA finally released its Proposed Rule for coal ash disposal, but it really wasn’t a Proposed Rule in the traditional sense. Instead it sought public comments on two different potential approaches to disposal regulation and

also asked for comment on a variety of seemingly unrelated matters pertaining to beneficial use. The ensuing public comment period generated an unprecedented response. By EPA’s account, more than 1,400 individuals testified at eight public hearings and more than 450,000 written comments were submitted. Of the written comments, EPA says over 13,000 (comprising over 2 million pages) contain “unique content requiring analysis.”



If EPA felt the material itself was truly toxic, Agency officials would be proposing hazardous waste landfill construction standards involving multiple redundant liners and leachate collection systems. They're not.

EPA won't say when it thinks that analysis will be complete. Since the close of the initial public comment period in November 2010, there has been a second comment period pertaining to additional data that has been added to the rulemaking record. Now there are rumors of a third comment period for still more data to be forthcoming and EPA has acknowledged that it is also performing beneficial use risk evaluations that it would like to complete before proposing a Final Rule.

Most EPA-watchers speculate that a proposed Final Rule won't come any earlier than 2013.

As EPA's rulemaking process becomes increasingly protracted, Congress has stepped in with a third proposal for coal ash disposal regulation. The Coal Residuals Reuse and Management Act would establish the first ever national standards for coal ash disposal. The standards are patterned after successful regulatory

programs for managing municipal solid waste. The bill requires state-administered permit programs to create enforceable requirements for groundwater monitoring, lining of landfills, corrective action when environmental damage occurs and structural criteria. It also provides that if a state is unable or unwilling to implement the permit program, the federal EPA would have authority to do so.

The coal residuals bill passed the U.S. House of Representatives with bipartisan support in October 2011 and in April 2012 was incorporated into the House's larger transportation reauthorization bill. The coal residuals bill was introduced in the U.S. Senate by 10 bipartisan co-sponsors and discussions regarding Senate passage of the bill are continuing.

COMPARING THE PROPOSALS

Figure 2 shows the key features of EPA's two proposals and the Congressional bill. Note that the actual landfill design requirements are highly similar in all three bills. You don't get a better landfill by labeling coal ash "hazardous waste."

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THINK GREEN.®

There's a good reason why there are few engineering differences in the three proposals. Despite a relentless assault by anti-coal environmental activists working to brand coal ash as "toxic," (See related story in the 2011 Issue 1 edition of *Ash at Work*: "Coal Ash in Context: Separating Science from Sound Bites as Regulatory and News Media Debates Continue,") even EPA agrees that Subtitle D non-hazardous landfill engineering standards would be protective of human health and the environment if applied to coal ash.

EPA never makes a claim that coal ash is "hazardous" based on its toxicity. Rather, the Agency's "hazardous" proposal is based on the premise that hazard results from failures of disposal facilities. (Many of these failures, also known as "damage cases," are disputed.) If EPA felt the material itself was truly toxic, Agency officials would be proposing hazardous waste landfill construction standards involving multiple redundant liners and leachate collection systems. They're not.

Where you do see differences in the three proposals is in enforcement authority

and time required to implement. Here is where it becomes clear that EPA wants direct federal enforcement authority and because of the way RCRA is written, a "hazardous waste" designation is the only way the Agency can get it. (It's also clear that by doggedly pursuing the Subtitle C approach, EPA has pushed implementation of improved landfill standards many years into the future by virtue of the protracted rulemaking process and

much longer implementation timeline if a Subtitle C rule were ever adopted.)

THE CASE FOR STATE OVERSIGHT

The much discussed and obvious disadvantage of direct federal enforcement is the collateral damage a "hazardous waste" designation would have on coal ash beneficial use. But there are many additional reasons for supporting a strong regulatory



EPA Headquarters

Photo: Coolcaesar/Wikipedia

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program where enforcement is led by state environmental regulators.

For instance, individual states have widely varying climate, geology, and power plant operating conditions that affect the design and operation of disposal facilities. One-size-fits-all federal regulation is not necessarily responsive to these variables.

Additionally, states competently regulate disposal of municipal solid waste (MSW) – which is the largest volume waste stream in the United States. (Coal ash is number two.) The health and environmental risks of MSW disposal are highly similar to coal ash and from a physical management perspective, coal ash is the easier of the two to handle. (See related story in the 2011 Issue 1 edition of *Ash at Work*: “Coal Ash in Context: Separating Science from Sound Bites as Regulatory and News Media Debates Continue.”)

State environmental regulators represented by the Environmental Council of the States and the Association of State and Territorial Solid Waste Management Officials fully support the regulatory approach that

would be established by the Coal Residuals Reuse and Management Act. State environmental regulators have been joined by many other units of state government, including departments of transportation and public service commissions, in warning against the pitfalls of EPA’s Subtitle C “hazardous waste” proposal.

AN UNCERTAIN TIMELINE

There is no legislative or judicial mandate for EPA to do anything with coal ash regulations. Therefore, EPA has no deadlines. In April 2012, a coalition of environmental groups filed a lawsuit against EPA seeking to impose a deadline for the process. That lawsuit has now been matched by lawsuits from coal ash recyclers Headwaters Resources and Boral Material Technologies, who are expected to argue in favor of outcomes that protect beneficial use.

Ironically, by engaging the courts in search of a deadline, the environmental groups may further prolong the process. Litigation of this sort can take years to resolve. Meanwhile, nearly three and a half years have elapsed since the Tennessee

incident that sparked the debate and no new regulations are in place.

Intransigence over wanting direct federal enforcement authority has blocked an opportunity to put in place new landfill engineering standards that all proposals agree on. If EPA had moved in 2009 to enact those standards under the “non-hazardous” Subtitle D, they would already be in effect. Today, however, the fastest path toward actually doing something positive for the environment regarding coal ash appears to lead directly through the halls of the United States Senate. ♦

John N. Ward is chairman of the American Coal Ash Association’s Government Relations Committee and also serves as chairman of Citizens for Recycling First – an independent organization of individuals and small businesses supporting recycling coal ash as a safe, environmentally preferable alternative to disposal. He is a former board member and past president of the American Coal Council. He served on the National Coal Council as appointed by the U.S. Secretary of Energy.

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LANDFILLING VS. RECYCLING

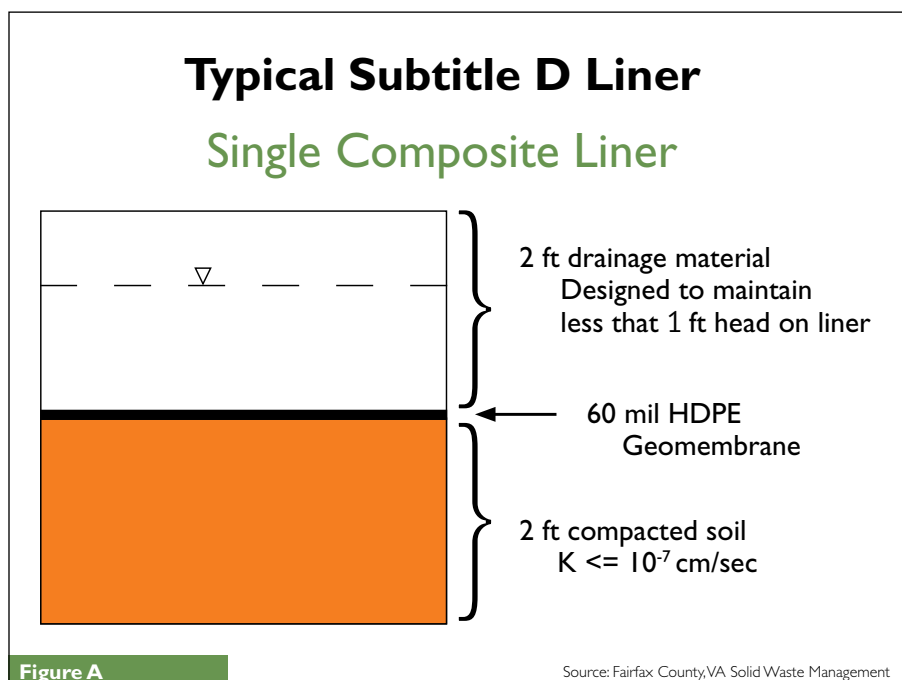
Responsible Structural Fill Strategies Provide Superior Environmental Protection

By Christopher D. Hardin, P.E.

In its Proposed Ruling on CCRs (Proposed Rule), the U.S. Environmental Protection Agency (EPA) indicates that there are concerns with the disposal and reuse of some coal combustion residuals (CCRs) in unlined landfills, non-encapsulated structural fill and mine reclamation applications. The EPA notes that these concerns are exacerbated when acceptable engineering standards and controls are absent. The purpose of this article is to review a Subtitle D lined landfill approach for coal ash disposal, and how the system uses design controls to protect groundwater beneath a site. In addition, the following sections stress the importance of the coal combustion utilities and the CCR recycling industry continuing to employ best practices to preserve strategic beneficial reuse opportunities.

COAL ASH DISPOSAL AND RECYCLING

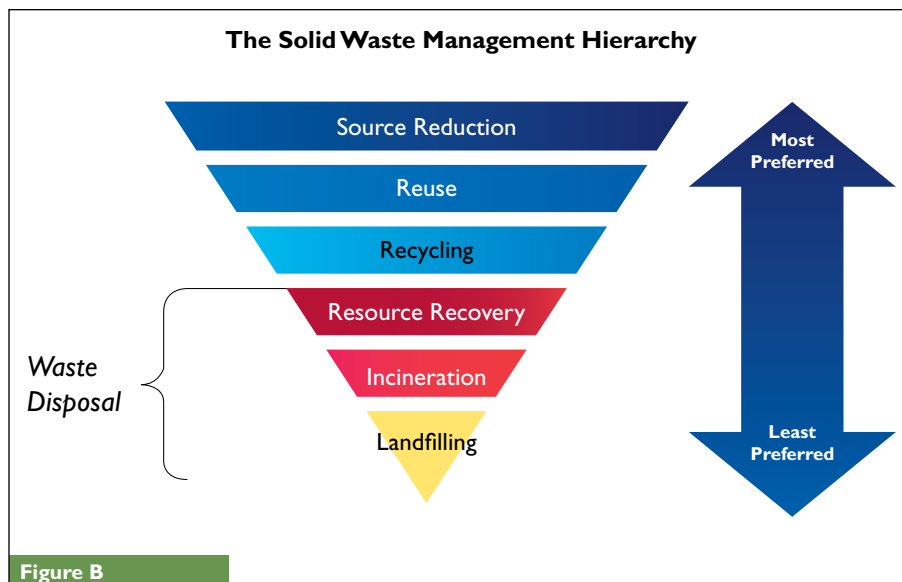
The disposal option for coal ash that has been recommended by many in the coal combustion utility and CCP reuse industries is a single composite liner with a leachate collection system. This option has been labeled Subtitle D Prime by the industry and is similar to the approach used for Subtitle D lined, municipal solid waste (MSW) landfills. The Subtitle D MSW landfill regulation has more than a 20 year track record of successfully managing an average of over 200 million tons of MSW per year. Subtitle D for MSW is an EPA mandated, and State managed program that was phased in over a 10 year period in the 1980s and 1990s. It typically requires synthetic liners, an extensive groundwater monitoring network, and



collection and treatment of the leachate. A cross section of a typical Subtitle D single composite liner system is provided in Figure A.

Subtitle D lined landfills for containing contamination and protecting groundwater resources from the potential hazards of MSW have a successful track record. When an MSW landfill is lined with a composite liner of HDPE and low permeability soil, and a leachate collection system there is very low probability, if any, that groundwater will be impacted. A typical Subtitle D liner system is designed to contain contaminants and heavy metals in MSW that are frequently more problematic than the constituents found in coal ash.

Recognizing that many coal ash landfills and impoundments have performed effectively for years without the use of synthetic liners or leachate collection systems, industry representatives developed the term "Subtitle D Prime" to allow alternative liners and containment systems for CCPs. Subtitle D Prime would still allow the EPA to establish a robust environmental program for coal ash disposal units, but without crippling the CCP beneficial use and recycling industry. The Subtitle D Prime solution, as suggested by the Utilities Solid Waste Activities Group (USWAG) and American Public Power Association (APPA), also recommends that the closure time frame for existing CCR disposal units be phased in over a much longer time period than the



180 day period in the Proposed Rule. The approach in Subtitle D Prime is consistent with the flexibility and time frame that was used when Subtitle D was applied to existing solid waste landfills in the 1980s and 1990s. One of the main reasons for this flexibility would be to allow local county governments and the general public time to adjust to the cost of increasing regulation.

As most experienced solid waste design engineers are aware, the individual parts of a Subtitle D liner system can or will malfunction at times without causing any impact to the surrounding environment. The reason a Subtitle D liner system works is simple – REDUNDANCY in the system. The multiple systems of liners, leachate collection, and runoff and runoff controls work because they have been designed as a coordinated system with each of the components having clear performance guidelines. In addition to the redundant liner and leachate collection systems, Subtitle D landfills have extensive groundwater monitoring and waste characterization requirements. All of these measures have resulted in a waste management approach that is respected and utilized not only in the United States, but worldwide.

RECYCLING SHOULD COME FIRST

An important aspect of handling any solid waste stream is to reduce, reuse and recycle where possible. The principle of emphasizing reduction, reuse and recycling is essential to the preservation of

Greenfield space, and maximizing the airspace in any modern landfill. The Solid Waste Management Hierarchy as shown in Figure B depicts the importance of encouraging and protecting material reuse and recycling as the cornerstone of any waste management strategy. Currently, in the United States, 33.8 percent of MSW is recovered and recycled or composted, 11.9 percent is burned at combustion facilities, and the remaining 54.3 percent is disposed of in landfills. In 1980, the percentage being recovered and recycled was approximately 10 percent. It is noteworthy that it took over 25 years for the MSW recycling industry to develop, and the American public to make this shift to the current recycling rates for MSW. The CCP recycling industry has developed a much higher percentage of recycling in a shorter time period by working closely with industry, and developing safe and reliable methods for beneficial reuse.

By comparison, approximately 135 million tons of coal ash are generated every year in the United States. The percentage of recycling and reuse was 43 percent in 2009. The reuse and recycling of CCPs in 2009 was a combination of engineered structural fills, mine reclamation, concrete, brick and block. Since the initiation of the Proposed Rule, there has been a steady reduction in the volume of recycling of coal ash. Micro-encapsulated uses such as concrete block and cement remain acceptable methods for recycling CCPs, but continued concern about the potential ruling on the toxicity of coal ash caused temporary decreases in the use of

CCPs in most other recycling methods. Most notably the reuse of CCPs in structural fills and roadways has decreased in the time period from 2007 to 2009 with most of these recyclable materials being sent to lined landfills.

Recently passed legislation in Congress, HR 2273 – “the Coal Ash Residuals Reuse and Management Act” would create a Federal coal ash disposal system that meets the requirements established by the EPA, but would still be managed by the States. It would be modeled after the successful implementation of the Subtitle D program for MSW that was phased in over a 10 to 15 year period. With a phased approach the States would still be required to submit their plan for a Subtitle D compliant coal ash management system that meets minimum EPA requirements. It is anticipated that phasing in of the requirements for CCP landfills and other lined options for coal ash would follow an approach similar to that used for the MSW rules. If the phased approach proposed in HR 2273 is used, then the impact to State regulatory agencies and the costs to the public caused by rapidly increasing costs for electric power would be minimized.

One thing that does not appear to be addressed in either the Proposed or pending bills in Congress is how to avoid the impact on the coal ash recycling industry. These impacts have come in form of lost jobs and the dismantling of a successful recycling industry that took many years to create. Without compromising a practical approach for protecting the environment there needs to be a way return coal ash recycling to its necessary and prominent position in the CCP waste management hierarchy.

COMMON AND GENERALLY ACCEPTED METHODS FOR COAL ASH RECYCLING?

In the Proposed Rule the EPA made it clear that it was not proposing to “change the May 2000 Regulatory Determination for beneficially used CCRs”, and that it was also not “proposing to address the placement of CCRs in mines, or non-minefill uses of CCRs at coal mine sites.” The focus of many sections in the Proposed Rule on CCRs was on controlling risks

associated with the improper placement of CCRs in structural fill applications. In the Proposed Rule on CCRs the EPA is soliciting comment and recommendations on what is necessary to continue using CCRs in structural fills and mine reclamation. Since structural fills and mine reclamation typically account for 16 to 43 percent of the total utilization of CCRs every year in the United States, it is essential that the meaningful input from coal combustion utilities and the CCR recycling industry are followed to preserve these important beneficial reuse opportunities.

Prior to 2009, approximately 43 percent of CCPs were recycled in a combination of concrete, engineered structural fills and encapsulated mine reclamation projects. Volume and placement information from 2007 to 2009 indicates that the volume of CCPs that would typically be recycled decreased by 10 to 30 percent. The value and importance of CCP recycling as an essential part of a coal ash management strategy suggests that this trend will cause significant problems if not addressed.

To begin to address these issues and develop guidelines the following is a list of several safe, effective and time-tested beneficial reuses of CCPs:

- Micro-encapsulated methods such as brick, concrete, block, flowable and a wide variety of cementitious products.
- Roadway base course placed over a compacted soil subgrade and/or as part of cementitious mixtures such as lime and CCPs.
- Shallow and deep structural fills of CCPs when placed as part of an engineered compaction program where moisture, density and drainage of the CCPs are controlled. Depending on the depth of fill the CCPs may be placed over a compacted, low permeability soil subgrade or a geomembrane liner.
- Macro-encapsulated methods for CCPs placement that utilize engineering and design of systems with geotextiles, geomembranes and geocomposite geonets.
- Macro-encapsulated methods including a low permeability, compacted soil

subgrade located above the water table and beneath layers of compacted and moisture controlled CCPs. The finished CCP layer is then covered with a low permeability cover soil and vegetative topsoil layer.

- Micro-encapsulated methods for CCP reuse that involve additives such as lime, cement, and a wide variety of hydro-phobic admixtures.
- Roadway fills, engineered structural fills and mine reclamation with a minimum 2-foot separation from the groundwater table as described in HR 2273.

In addition to the general description of common and accepted CCP reuse methods provided above, many States have extensive and detailed beneficial reuse programs for CCPs that have been safely used without problems for many years. As it stands right now, many of these successful programs have been put "on hold" as the uncertainty with the Proposed Rule on CCRs is worked out.

IMPACTS OF NOT RECYCLING COAL ASH?

As mentioned in previous sections, many of the safe and effective methods that were previously utilized by coal ash recycling and reuse companies have been eliminated in the past two years. So where is this displaced volume of coal ash being stored, and what is the potential impact on the environment? Conservative estimates indicate that 2 to 10 million tons

have been routed away from CCP recycling and to waste disposal over the past two years. From a solid waste management perspective, one of the most important principles for environmentally safe and cost effective waste management is making an effort to NEVER HANDLE any waste or recycle material TWICE. Once a waste or recycle material reaches its final destination it always takes additional energy to get it to the next stage. In addition to added energy cost there are potential impacts to environment when any solid waste material is re-excavated and transported to a new disposal or recycling facility. The same is true for coal ash as it is MSW or any industrial waste material.

A review of the CCP reuse and recycling industry information for the past 3 years indicates the following trends as the uncertainty over regulatory issues persists:

- Substantial volumes of coal ash that could have been recycled have been placed in the new lined, CCP landfills. Conservative estimates indicate the volume of re-routed and recyclable CCPs is in the range of 2 to 10 million tons over the past 2 years.
- More landfills and filled up new landfills means more impact to open space and valuable natural resources such as sand and gravel.
- It is conservatively estimated that approximately 10 percent or 10 million



Prior to 2009, approximately 43 percent of CCPs were recycled in a combination of concrete, engineered structural fills and encapsulated mine reclamation projects.

tons of the coal ash has been re-routed away from construction fill materials and/or concrete the past 2 years. These changes result in:

- 400,000 tons of additional greenhouse gases, per year.
- Over \$50 million in additional energy costs, per year.
- Over 100 million gallons of additional water used for cement production or natural resources mining, per year.
- Corresponding increases in the volume of valuable natural resources used for leachate collection systems and as a replacement for CCPs not being used in engineered structural fills.
- Additional transportation costs and the resulting increase in greenhouse gas emissions from the burning of fossil fuels in hauling trucks and construction equipment.

In addition to the impact on the natural resources and the environment, not being able to recycle coal ash is impacting the CCP recycling industry. The confusion over what constitutes safe and effective recycling of CCPs has even impacted the EPA's Reduce, Reuse and Recycle Program. The recycling of non-hazardous industrial waste is an essential part of the EPA Reduce, Reuse and Recycle Program. The EPA indicates that "Industrial non-hazardous wastes that can be recycled and reused are key to a successful resource conservation program." Unfortunately, one of the largest volumes of recycled industrial waste in the US has been eliminated from the recycling system as the current regulatory uncertainty persists.

HOW CAN COAL ASH BE SAFELY PUT BACK TO WORK?

Many of the answers to this question are already provided in the EPA's approach to the successful management and disposal of municipal solid waste as outlined in Subtitle D. Other answers for safe and effective use of CCPs are included on the EPA's web page for the Reduce, Reuse and Recycle Program. The following is a list of suggested interim measures for getting

“Unfortunately, one of the largest volumes of recycled industrial waste in the US has been eliminated from the recycling system as the current regulatory uncertainty persists.”

coal ash back into the industrial waste recycling system:

- Interim Measure No. 1: Allow for the placement of CCPs in coal and mineral mine reclamation sites using the existing State and Federal guidelines for engineering design, environmental remediation, and groundwater protection. The US has over 1 million acres of non-reclaimed coal and mineral mines that could easily and safely be remediated with a combination of properly placed and compacted FGD and coal ash. The regulatory programs for this type of mine reclamation with CCPs already exist.
- Interim Measure No. 2: Allow industries in States with a pre-existing beneficial reuse program for engineered structural fills and mine reclamation with CCPs to return to recycling CCPs if their program meets the groundwater separation guidelines described in HR 2273 and the Federal Standards required by the Clean Drinking Water Act.
- Interim Measure No. 3: Have EPA provide more clarity about what is meant by "sham beneficial reuse" and proper methods of waste disposal for CCPs, as well as the meaning of the terms encapsulated and unencapsulated uses of CCPs. For these definitions to have a clear and defensible scientific basis, it seems reasonable that they be developed in conjunction with experienced geochemists, and geotechnical and environmental engineers who have experience with the use and application of these terms in a wide variety of waste disposal applications.

In addition to the interim measures listed above, it seems prudent and within the EPA process to allow technical professionals on both sides of the issue to work out a few practical solutions. This may

involve bringing together a national committee of respected technical professionals, from both sides of the debate, to develop practical solutions for CCP storage, disposal and recycling. Among the technical professionals there appears to be substantial agreement on what constitutes safe and effective methods for the disposal and recycling of CCPs. Of course there will always be exceptions that will require additional scrutiny and debate, but these should not keep things from moving forward on issues that are applicable to the majority of the coal ash containment sites. The practical points of the of agreement for CCP disposal and recycling can be applied now, as more the more challenging issues surrounding coal combustion energy production are addressed.

In closing, it seems that developing a few interim solutions to remove some of the uncertainty surrounding key sections of the Proposed Rule could be a great way to enhance recycling, ensure safe and effective disposal of CCPs. None of the interim measures listed above would limit the ability of the EPA to make a full and complete review of current practices that are mentioned in the Proposed Rule on CCRs. In fact, breaking down the complex array of technical issues into a few key categories, that could be studied and solved by technical professionals, would actually serve to provide a more thorough review and increased environmental protection. ♦

Christopher D. Hardin, P.E. is a geotechnical and environmental engineer who serves the Coal Combustion Practice Leader for Haley & Aldrich. He has over 24 years in landfill design, sediment remediation, constructability reviews, innovative re-use of coal combustion byproducts, dredged containment facility management, groundwater treatment system design, and geo-synthetic applications.



LEGAL CONSIDERATIONS

Defending a Resource Conservation and Recovery Act Citizen Suit

By Joshua R. More and Ashley L. Thompson

In the wake of increasing federal, state, and environmental activist oversight and considering the potential for groundwater and surface water impacts often found at coal ash management sites, developing viable strategies for defeating citizen

suits under Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act of 1976 ("RCRA") are extremely important. 42 U.S.C.A § 6901, *et seq.* Generally, Section 7002(a)(1)(B) of RCRA provides a cause of action where contamination creates an imminent and substantial endangerment to health or the environment. Specifically, the

statute authorizes a citizen to bring a suit against "any person...who has or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment." 42 U.S.C.A § 6972(a)(1)(B).

Although coal ash is exempt from RCRA regulation as a hazardous waste, coal ash contamination may still give rise to a citizen suit under RCRA. This is because coal ash, if not beneficially used, can be characterized as a solid waste for purposes of RCRA, and a solid waste, like a hazardous waste, gives rise to a RCRA citizen suit if the waste may present or threatens to present an imminent and substantial endangerment to human health or the environment.

While at first blush the burden of bringing a citizen suit appears to be low, a plaintiff is not assured of winning the case just by presenting the court with evidence of contamination. First, the statute provides a prosecution bar against a citizen suit where EPA or the state is already involved. Second, the plaintiff must prove that the contamination causes an "imminent and substantial endangerment" and courts have held that the mere fact that contamination exists is insufficient to rise to the level of an "imminent and substantial endangerment."

Statutory Bars

In the first type of defense, if EPA or the state is involved in addressing the

contamination, the government's involvement may bar the citizen suit entirely. Pursuant to the terms of the statute, a citizen may not pursue a RCRA citizen suit if (a) EPA has commenced and is diligently prosecuting a CERCLA Section 106 action or EPA or the state has filed a RCRA endangerment action; (b) EPA or the state is engaging in its own removal action under CERCLA Section 104; or (c) EPA or the state has incurred costs under CERCLA Section 104 to initiate a remedial investigation and feasibility study and is diligently proceeding with a remedial action. 42 U.S.C.A § 6972(b)(2)(B) & (C). Additionally, if a court or administrative order under CERCLA Section 106 or RCRA Section 7003 has been issued and a party is diligently complying with the order, then a RCRA citizen suit may be barred. *Id.*

"While at first blush the burden of bringing a citizen suit appears to be low, a plaintiff is not assured of winning the case just by presenting the court with evidence of contamination."

For example, in *Miami-Dade County v. United States*, 345 F. Supp. 2d 1319 (S.D. Fla. 2004), the county brought a citizen suit against the federal government and sought an order requiring the federal government to clean-up vinyl chloride and other volatile organic compounds found in soil and groundwater at the Miami International Airport. *Id.* at 1330. The Court held, however, that the citizen suit was barred under Section 7002(b)(2)(B)(iii) because U.S. EPA had already completed a RI/FS on the property and implemented a remediation plan for the site. *Id.* at 1354. See also *Hudson Riverkeeper Fund, Inc. v. Harbor at Hastings Assocs.*, 917 F. Supp. 251, 254-56 (S.D.N.Y. 1996) (dismissing the RCRA citizen suit because the lawsuit was barred by the pending state court action).

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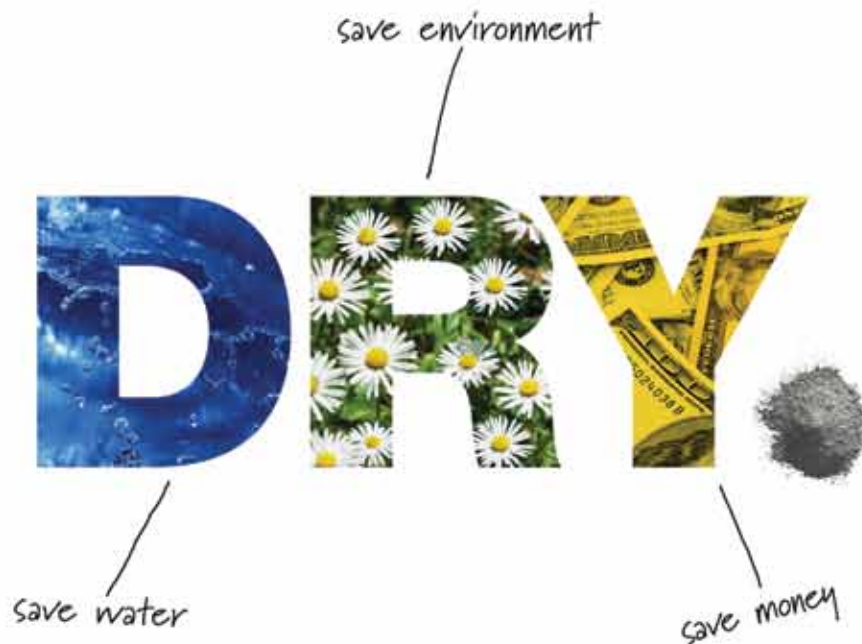
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While the statutory bar is a powerful tool under the right set of facts, courts have generally interpreted provisions barring RCRA claims narrowly and allowed citizen suits to proceed. For example, a citizen suit is not barred where the federal or state enforcement action does not address the environmental conditions articulated in the citizen suit complaint. *Sanchez v. Esso Standard Oil Company*, 572 F.3d 1 (1st Cir. 2009). In *Sanchez*, the Court explained that “[f]or the government action to bar a citizen suit, the government action must seek ‘to require compliance with the standard, limitation, or order’ [that] the citizen alleges is violated.” *Id.* at 3. Therefore, a court may allow a citizen suit to proceed where the complaint addresses an additional constituent or environmental condition that was not addressed by the government’s remediation plan.

In addition, a citizen suit is often not barred if the site has been enrolled in a voluntary remediation program or if the site is subject to state administrative action. *Hernandez v. Esso Standard Oil Co.*, 597 F. Supp. 2d 272, 280 (D.P.R. 2009) (citizen suit not barred by state administrative action); *City of Waukegan v. Arshed*, 2009 WL 458621, *3 (N.D. Ill. Feb. 23, 2009) (citizen suit not barred by entry into a state voluntary clean-up program); *Kara Holding Corp. v. Getty Petroleum Mktg., Inc.*, 67 F. Supp. 2d 302, 307 (S.D.N.Y. 1999) (stating that “most courts” have held “that state administrative actions” do not bar a citizen suit).

Finally, in order for the statutory bars to be effective, the federal or state agency must be “diligently prosecuting” the remedial action. *Hudson Riverkeeper Fund, Inc.*, 917 F. Supp. at 256. In other words, the remedial action must not be used as a placeholder simply to prevent a citizen suit from proceeding.

Because the statutory bars to a citizen suit are limited, it is important to assess the likelihood of being sued under the citizen suit provision before entering into any type of agreement or order with a federal or state agency. In situations where a RCRA citizen suit is imminent, the client may benefit from being sued by EPA or the state regulatory agency in order to bar the citizen suit.

Mere Presence of Contamination is Insufficient

In addition to the statutory bars to a citizen suit, courts have held that the mere presence of contamination is insufficient to demonstrate that an imminent and substantial endangerment exists. Defendants can therefore argue that although contamination is present on the property, there is no cause of action under Section 6972(a)(1)(B). Two cases illustrate this point.

In *Foster v. United States*, 922 F. Supp. 642 (D.D.C. 1996), the owner of a contaminated site brought suit against the defendants, arguing that the defendants’ prior uses of the property contributed to the presence of PCBs, PAHs, and TPHs on the site. The defendants argued that the contamination did not present an imminent and substantial endangerment to health or the environment and the Court agreed. The Court granted summary judgment to the defendants because (1) the contamination was “located at depths greater than 10-15 feet below ground [and therefore] will not result in human exposure to soil contaminants through contacts, inhalation, or ingestion”;

(2) there was no risk of groundwater contamination because the contamination was not “migrating and percolating through the soil”; and (3) the groundwater at the site was not used as drinking water or for any other purpose. *Id.* at 662. Thus, although the site was contaminated, plaintiff failed to establish liability under RCRA because the contamination did not give rise to an imminent and substantial endangerment.

In a similar case, *Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199 (2d Cir. 2009), plaintiffs alleged that the shot fired from a nearby shooting range presented an imminent and substantial endangerment to health or the environment because lead concentrations in some soil samples exceeded the state cleanup standards. The Court dismissed the claim because plaintiffs “failed to adduce sufficient evidence on either of two issues: (1) the likelihood that existing lead contamination will in fact result in harm to human health or the environment; and (2) the severity of any harm that might occur.” *Id.* at 211. The Court made this determination in part because showing that the levels of contamination



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on the property exceeded state environmental standards was insufficient to establish liability under the RCRA citizen suit, and plaintiffs needed to provide more evidence regarding why the elevated levels of lead cause a "reasonable prospect of future harm that is both near-term and ... potentially serious." *Id.* at 212 (quotations and internal citations omitted). Rather, plaintiffs did not provide any evidence that "anyone is subject to long-term exposure to lead contamination at the [] site, or that there are realistic pathways of exposure there." *Id.* at 213. As a result, the Court dismissed the RCRA citizen suit because the evidence did not "indicate anything more than a speculative prospect of future harm" and did not "include sufficient information from which a reasonable jury could find that the potential harm at issue rises to the level of a serious endangerment." *Id.* at 214.

Plaintiffs' obligation to prove that harm or a threat is imminent can provide fruitful defense opportunities. As illustrated by the cases above, at a bare minimum, plaintiffs must demonstrate to a court that an actual risk of harm threatens to occur immediately. The mere presence of contamination is insufficient to establish the requisite imminent endangerment or threat, and claims where contamination is present can fail under a variety of factual circumstances.

The owner or operator of a coal ash site must remain cognizant of the defense



Photo: Erick Jones/Photos.com

The speculative prospect of future harm does not carry much weight.

strategies available should there be a threat or the actual filing of a citizen suit. For example, if EPA or the state government is involved in diligently following a remedial action plan on the property, the citizen suit may be barred by the prosecution bars provided in the statute. Furthermore, a plaintiff cannot prevail unless he or she can establish that harm or endangerment to health or the environment is imminent. ♦

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Blended cements have grown in popularity for both technical and economic reasons. The high amount of energy and CO₂ produced in manufacturing and transporting cement, means the industry must take steps to reduce the impact on the environment. Transportation is a key area where costs and emissions can be reduced, through intermodal strategies for distribution. With road congestion, global trade and fuel costs on the increase; there is an economic and environmental challenge to be faced.

Patented and built by InBulk Technologies, ISO-Veyors are versatile, intermodal containers for effective transportation, storage and horizontal discharge of Dry Bulk Materials (without need for tipping). Available in a range of configurations, specifications, sizes and materials, they're ideal for all types of cement and CCP's.

The ISO-Veyor has a highly impressive technical specification. Available in mild steel, stainless steel or aluminium, it is also available in either 20ft or 30ft configurations.

ISO-Veyors are discharged by standard 2-barg air supply. They can be used in conjunction with a variety of intermodal infrastructure commonly used for box containers, including Intermodal Transfer Points, Rail Ports, Reach Stackers, Side Lifting Trailers and Cranes.



Intermodal Solution

The future proofed intermodal solution

As the transportation landscape evolves, and the demands of projects change, the ISO-Veyor provides a flexible, cost effective solution.

Road Transportation

The ISO-Veyor can be placed on a skeletal trailer and deployed as a powder road tanker. This combination provides an equivalent to road tankers at a significant cost advantage, with no loss in performance and a small payload difference. Customers utilising ISO-Veyors benefit from driver controlled deliveries, and are able to drop or switch loads without queuing for discharge slots. There's also no requirement for expensive tipping chassis, as ISO-Veyors discharge from a horizontal position.

Rail Transportation

The ISO-Veyor can be placed on a rail car and used in the same way as a powder rail tanker. This delivers great rail economics with all the flexibility of Just-In-Time road deliveries, allowing suppliers, end-users and rail operating companies new opportunities for intermodal rail freight supply.

Sea Transportation

ISO-Veyors are ideally suited for either short or deep sea shipping, in the same way as standard box containers. This allows customers to increase their export reach and widen their geographical radius of supply. ISO-Veyors can be stacked on either container ships or barges.



Benefits

Ground Storage

Used on the ground, the ISO-Veyor becomes a ready-made weatherproof silo, for storage of cement blends to be used for construction or precast projects. This helps to avoid multiple handling and cuts investment in new silo capacity.

Cost Benefits

ISO-Veyors provide the functionality of dedicated powder road or rail tankers – without the expense. Dedicated modal solutions require storage silos to receive the material at either end of the transport chain. ISO-Veyors remove this requirement. Product integrity is ensured as the material itself is not handled until discharge into the final process.

Intermodal Benefits

ISO-Veyors are easy to fill, discharge, and handle. Deliveries of Dry Bulk materials are safe, efficient and secure, as there's no requirement to transfer the material from one modal container to another.

Environmental Benefits

The ISO-Veyor is a closed, sealed system resulting in zero opportunity for pollution or spillage of material during transfers. There's also a greatly reduced chance of accidental discharge into waterways, the atmosphere or other sensitive areas. The balancing of loads between road, rail and sea has a significant effect on air pollution and provides little opportunity for contamination.

Flexibility

ISO-Veyors can be utilised in any transport and storage setting. They offer strategic flexibility as the transportation landscape evolves and projects change.

Safety

As ISO-Veyors can be discharged in a horizontal position, without the need for tipping, this leads to a reduced risk of accidents and represents a major improvement to the safety of on-site deliveries.

Case Study

ISO-Veyors play a crucial part in building the world's longest railway tunnel

When Holcim cement required a special intermodal solution for the transport of cement and binders to remote construction sites, they turned to InBulk's ISO-Veyor for the solution.

Sedrun is a remote holiday town in the heart of the Swiss Alps. It's also the location used to provide materials for the construction of the world's longest railway tunnel. From Sedrun, a supply line runs 800m into the mountain, then a further 800m down. This brings material to the midpoint of the new Gotthard rail link, which will be a staggering 57KM in length when completed in 2016.

The Sedrun site is rail connected via a narrow gauge mountain railway, which carries the ongoing materials needed to build the tunnel. InBulk Technologies are currently supplying PFA ash to the site with a number of 20ft ISO-Veyors carried on small 20ft intermodal flat wagons.

The project highlights just how versatile InBulk's ISO-Veyors can be in serving the most difficult and remote customer locations, giving quality logistics solutions, tailored to the most demanding situations.



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HIGH VOLUME FLY ASH GROUT

Concrete Masonry Construction Improves Sustainability and Performance with Coal Ash

By Drew DeCarlo, Headwaters Resources

Reducing the amount of portland cement used in construction has important environmental benefits in terms of both the energy used to manufacture the cement as well as in lower CO₂ emissions and embodied energy in the assemblage. These considerations can have economic benefits to concrete producers, masonry contractors, masonry and paver producers and stakeholders in the masonry industry.

To improve the sustainability of concrete masonry construction, research was conducted by the California Masonry Association of California and Nevada (CMACN) to determine the viability of replacing up to 60 percent of the portland cement in masonry grout with recycled materials like coal fly ash. Various combinations of Class F Fly Ash, portland cement and standard concrete materials

were evaluated for performance, sustainable benefits and practicality. Headwaters Resources contributed time and materials to the study.

Concrete masonry using high volume fly ash grout has many enhanced sustainable benefits incorporating green design and structural integrity, including:

- The incorporation of high fly ash contents can greatly reduce the Embodied Energy in a masonry wall unit. (Portland cement contributes 90 percent to 95 percent of the Embodied Energy in masonry construction, depending on the cement content.) The manufacturing of portland cement produces approximately one ton of CO₂ released into the atmosphere for every ton of portland cement produced. Utilizing fly ash at high replacement

levels reduces the carbon footprint of a masonry unit.

- Durability and low maintenance requirements with reduced permeability and porosity.
- Lower moisture transmission through wall unit and a longer life cycle because of the impervious improvement of the cementitious matrix.
- Structural capacity as designed (ability to withstand earthquake and high wind events, severe weather).
- Inhibits efflorescence of the masonry assemblage.
- These same qualities can also be applied to all grouts and concrete used in Insulated Concrete Form (ICF) building systems.



High volume fly ash grouts flow easily and are placed with less effort. This is due to the highly plasticized concrete created by the amorphous, spherical shape of the fly ash in the mix.

- Fly ash is the largest volume recycled material in the country and inclusion at high replacement levels increases concrete masonry construction sustainability. (See Citizens for Recycling website at www.recyclingfirst.org and www.whymasonry.org for more information)
- High volume fly ash grout is an excellent choice for DOT sound-wall construction because of its superior pumping and reconsolidation characteristic.
- Use of high volume fly ash grout contributes to obtaining credits in the USGBC LEED certification and other green building programs.

PERFORMANCE BENEFITS OF INCLUDING FLY ASH IN GROUT

Remember, fly ash is a spherical material that acts as a lubricant in concrete mixes, especially grouts. Even though a significant portion of the mix water can be reduced in a high volume fly ash grout mix, care and caution must be exercised to keep an adequate amount of water in the grout mix so that the normal absorption process from the grout to the concrete masonry unit can occur. (See ASTM C-476) Typical high-water, high cement grouts exhibit dramatic shrinkage between the inner shell of the masonry unit and the grout as concrete hydrates in the cell. High volume fly ash grout uses less water for the same or higher slump and can minimize this shrinkage and increase the bond and shear strength between the grout and the masonry unit.

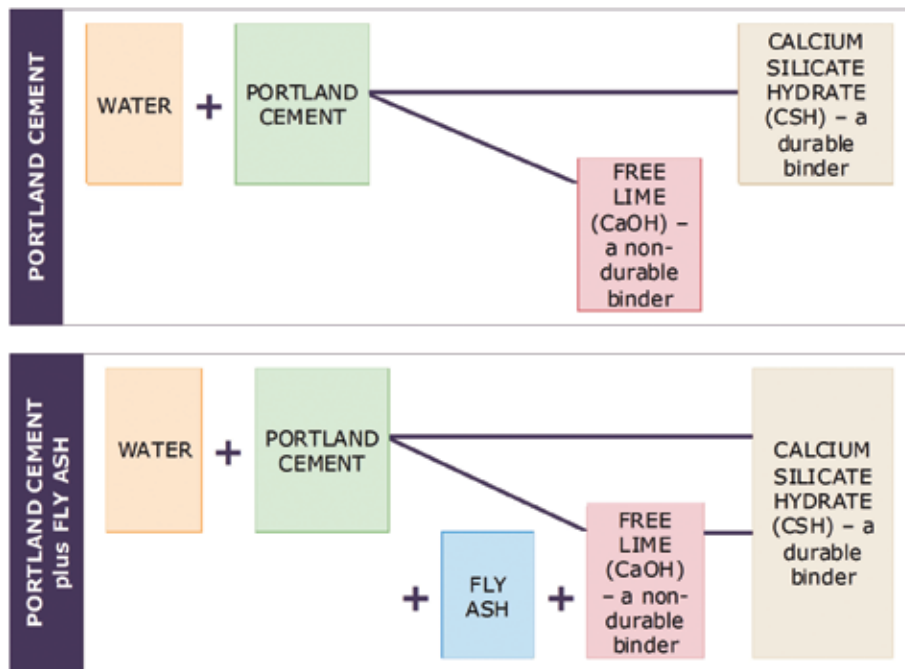
Reducing the amount of portland cement in grouts can be especially significant in high seismic regions. Because of the stringent structural requirements due to high seismic risk, concrete masonry walls are typically fully grouted, resulting in about half of the wall's volume being grout. It is estimated that over 1.3 million tons of portland cement are used annually in the production of grout for concrete masonry walls in California and Nevada. National numbers are much higher for other states. Replacing a substantial percentage of portland cement with recycled materials such as fly ash represents a significant potential to reduce CO₂ emissions associated with concrete masonry construction, creating a "greener" product and image for the masonry industry while enhancing the integrity of the masonry assemblage at the same time.



Efflorescence forming on the lower section of this wall due to repeated wet/dry cycles can be drastically reduced by high volume fly ash grout mixes. The free lime (CaOH) that is a byproduct of Portland cement hydration is chemically tied up. See the following diagram that explains this reaction.

Fly ash has been used as a cement replacement in portland cement concrete for over 80 years. In concrete products, fly ash moderates the rate of compressive strength gain and in high volumes acts as a plasticizer because of its shape, so it improves the workability, flowability, pumpability and placement of the plastic grout. Replacement of up to 20 percent to 30 percent (typically by weight) of portland cement by Class F fly ash is currently a common practice in most concrete and

HYDRATION PRODUCTS OF CEMENTING BINDERS



Through pozzolanic activity, fly ash combines with free lime to produce the same cementitious compounds formed by the hydration of portland cement.

40 to 50 percent is being accepted in grout mix designs across the country.

Efflorescence, occurs when calcium hydroxide (free lime), a water soluble

by-product of the hydration process of portland cement, is carried to the surface of cement-based products by migrating water. Fly ash combines with this free lime to produce durable components within the concrete matrix, reducing the amount of free lime migrating to the masonry surface. Exposed to the atmosphere, calcium hydroxide reacts with carbon dioxide to form calcium carbonate deposits which remain apparent as unsightly, whitish stains. Too often, efflorescence shows up to severely degrade the aesthetic appeal of otherwise successful masonry projects.

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TESTING OF HIGH VOLUME FLY ASH GROUTS

Typical grout mix designs tested were code compliant and were in the range of the following proportions:

Design Strength 2000 – 2500 @ 28 Days – range of strength is appropriate for most grout mix designs ASTM C-476, Section 4.2.1.2

Water/Cement Ratio 0.69 – most grouts need to be at 0.60 or higher for proper placement ASTM C-476 Section 4.2.1.2 and ACI 530.1-11

Required Slump 9" (+ or – 1") – slump can be as high as 11 inches in high volume fly ash grout mixes

Cement (Type II/V) 338.4# – 60 percent or less – can be as low as 40 percent in certain applications

Fly Ash (Class F) 225.6 # – 40 percent – can be as high as 60 percent in certain applications

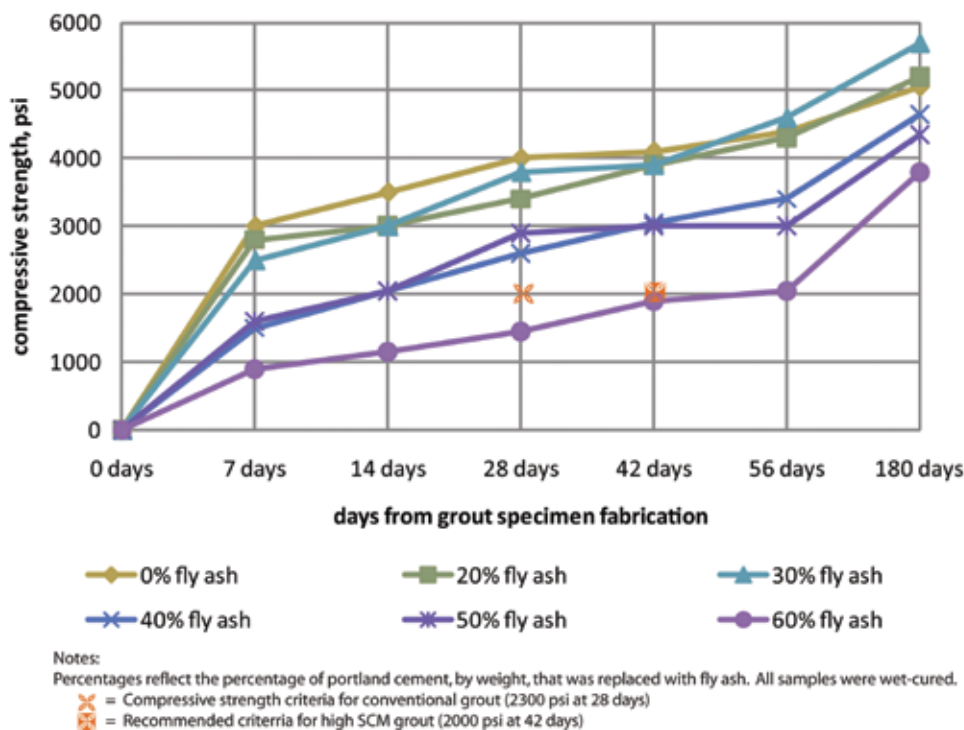
Fresh Water 47.00 Gallons (391#) – proper water content is necessary for absorption and slump control

Washed Concrete Sand 1735# – 62 percent – can be as low as 55 percent

3/8" Pea Gravel 1072# – 38 percent – can be as high as 45 percent

Stakeholder results from the tests are interesting. Results show that grout utilizing high volume fly ash meets the minimum requirements of most building codes at 28 days (2,000 psi or higher) even with replacement of 50 percent of the portland cement with fly ash; and at between 42 and 56 days all mix designs with up to 50 percent replacement equaled or exceeded code: the 60 percent mix, while acceptable over time, had a slower strength gain and may be used in any non-structural application upon acceptance.

Recent research conducted by the CMACN, Masonry Institute of America and Brigham Young University has demonstrated that up to 50 percent of the portland cement in masonry grout can be replaced by fly ash in a properly designed mix to produce a grout that meets all current code requirements for strength, and produces a more sustainable and economical system. The BYU research also included the utilization of fly ash in all types of masonry mortars to measure its performance in that application.



MEASURED STRENGTH OF GROUTS WITH MODERATE TO HIGH SCM REPLACEMENT OF PORTLAND CEMENT (FLY ASH ONLY)

Testing (see chart) shows that grout mixes with 20 percent and 30 percent cement replacement had strengths similar to those of the conventional grout throughout the time period evaluated. The 40 percent and 50 percent fly ash replacement grouts gained strengths slower than the conventional mixes, but still met the code required minimum strength at both 28 and 42 days.

High SCM grouts are a viable high strength, structural, sustainable and economic alternative for concrete masonry construction and need to be considered during the submittal process. The compressive strength testing at 42 days (versus the typical 28 days) should not have a significant effect on the overall building project schedule. Prism testing in addition to grout specimen testing may be warranted when using high volume fly ash and SCM grouts in masonry construction.

ADDITIONAL CONCLUSIONS AND ADVANTAGES FOR CONCRETE PRODUCERS:

- Grouts with up to 30 percent (by weight) of portland cement replaced with Class F fly ash can be treated as conventional masonry grout. Significant material, water and cement savings can be realized.
- When 40 percent to 50 percent (by weight) of portland cement is replaced with Class F fly ash, the compressive strength should be tested and evaluated at 42 days rather than 28 days, although many high quality mixes meet the 28 day benchmark.
- Analyze the economies of higher coarse aggregate or lower fine aggregate proportions in high volume fly ash grouts using gradations and other properties to fine tune mix proportions.
- Recycled or reclaimed and alternative aggregates may be appropriate for these mixes.
- Do not over-use chemical admixture to obtain proper slump ... fly ash at 40 percent plasticizes the concrete adequately. Many properly designed grout mixes use no chemical admixture.

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Sample section of masonry wall with evidence of efflorescence and water intrusion. (SoCal 09)



Note the absence of efflorescence, water intrusion or aggressive chemical attack in this section of HVFA grouted wall. (SoCal 09)

- Grout strengths using high volume fly ash proportions are capable of achieving a wide strength range for structural application exceeding the “normal” grout requirements.
- Grout mixes with high fly ash content exhibit extremely fluid pumping characteristics. Reconsolidation and vibration time and costs on the job are greatly reduced.
- Cycle time for ready mix trucks and grout pumps is reduced due to ease of discharge, quicker pumping and placement on the job. Fly ash is a spherical material adding a lubricating effect.
- Sixty percent (by weight) replacement may be a viable grout alternative if the amount of displaced portland cement is a primary consideration. ♦

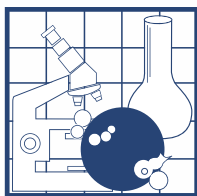
“Concrete masonry using high volume fly ash grout has many enhanced sustainable benefits incorporating green design and structural integrity.”

ACKNOWLEDGEMENTS

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1. Arizona Masonry Guild
2. Concrete Masonry Association of California and Nevada
3. Illinois Masonry Institute Promotion Trust
4. Masonry Institute of America
5. Northwest Concrete Masonry Association
6. Utah Masonry Council

Drew DeCarlo has been in the concrete products industry for 30 years, the last 12 with Headwaters Resources devoted to utilizing coal fly ash in better ways. Recently completing his MBA in Sustainability, Mr. DeCarlo is a long-standing member of the Los Angeles Greenbook Committee and a firm proponent of “performance concrete” and High Performance Concrete, the success of which depends on materials like fly ash. He has served as the LA Chapter President of the American Concrete Institute and is certified by the National Ready Mixed Concrete Association as a Concrete Sustainability Expert.



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ASH CLASSICS

National Ash Association Publications Illuminate Foundation of the Beneficial Use Industry

By David Goss, Former ACAA Executive Director



*This new recurring feature of **Ash at Work** will examine the early years of the National Ash Association (NAA) and issues and events that were part of the beneficial use industry's defining years. "Ash Classics" will delve into our industry's history and look at some innovations that came to fruition and some that didn't. We may even discover that beneficial use back then and today are very similar, with the same sorts of challenges and opportunities, despite the difference in decades. We hope that you will enjoy this retrospective perspective of history, when one can learn by looking back as well anticipate by looking ahead.*

When the American Coal Ash Association's name was adopted in 1985 as the name of the nation's leading advocate for utilization of "power plant ash," it already had been operating for 17 years in tireless efforts to better promote understanding of recycling and beneficial use of fly ash, bottom ash and boiler slag, as well as many of the air emission scrubber materials. The National Ash Association was formally incorporated in Washington, DC on March 8, 1968.

Charter members of NAA included the National Coal Association, Allegheny Power Service Corp., American Electric Power Services Corp., Baltimore Gas & Electric Co., Central Hudson Gas & Electric Co., Consolidated Edison Company of New York, Dayton Power & Light Co., Duquesne Light Co., Illinois' Power Co., Interstate Power Co., Kentucky Utilities Co., Niagara Mohawk Power Corp., Ohio Edison Co., Pennsylvania Electric Co., Pennsylvania Power & Light Co., Potomac Electric Power Co., Public Service Company of Indiana, Public Service Electric & Gas, Rochester Gas & Electric Corp., Tennessee Valley Authority, Toledo Edison Co. and Union Electric Co., Consolidation Coal Co., Peabody Coal Co., Slab Fork Coal Co., Valley Camp Coal Co., and Westmoreland Coal Co. In May of 1968, John Faber, a project coordinator with the U.S. Bureau of Mines, was selected as Executive Director. AEP's John A. Tillinghast was the association's first president.



Cover of the first edition of **Ash at Work**, 1969.

In 1968, NAA published the first *Ash at Work* – a six-page, two-color newsletter that eventually grew into a number of specialized bulletins or articles, all under the banner of *Ash at Work*, but focused on selected issues. The primary author and editor of the new publication was Allan W. Babcock of West Virginia who, despite this important role, rarely stepped into the spotlight. He quietly worked behind the scenes gathering information and collecting photographs, never seeking recognition for his work. Al passed away in late 2010 and his extensive collection of historical NAA documents was donated to ACAA where they have become valuable as insights into the history of this organization.

Beginning in 1974, the newsletters were printed on recycled paper, an early step toward sustainability. The last of these *Ash at Work* publications was published by ACAA in September 1999, at which time it went dormant until resurrected as a full color magazine in 2004.

Headlines from early issues of *Ash at Work* included: “Flyash Brick Demonstrated,” “Beneficiation Units Are Being Installed,” “U.S. Ash Utilization is On the Increase,” “Ash Used in Base and Paving...” and “New Fly Ash Concrete Masonry Block Introduced.” NAA also published technical guidance and case studies on many topics. Topics included “Ashphalt; Turning Waste Material into Useful Aggregate,” “Economics of Ash Utilization,” “How Fly Ash Improves Concrete Block, Ready-Mix Concrete, Concrete Pipe” and “Fly Ash as a Structural Fill.” The topics are as important today as they were in the 1970s.

NAA’s Executive Director James Covey initiated an effort in 1982 to keep the membership informed of upcoming issues, and did this in part through a new publication “Ash in Action.” It was an infrequently and undated printed update on activities in Washington, DC, especially those originating from federal offices.

In 1983, NAA was faced with the first efforts by the Environmental Protection Agency to define certain materials as hazardous wastes under Section 3001 of

the Resource Conservation & Recovery Act of 1976 (RCRA). Public hearings began in June 1983 and NAA was in the forefront. An “Ash Alert” was issued by the association urging members to participate in these hearings and work to help their business partners and others to understand the potential impact a hazardous definition could have on the costs of managing ash. A full page explanation titled “If this is ever termed ‘Hazardous Waste,’ a lot of you face big trouble” was widely distributed by NAA. At this time, the terminology was simply “ash” as coal combustion byproducts or residuals had not yet been used. Between 1983 and 1985, NAA submitted technical

documents and reports to the EPA supporting how beneficial coal ash was in construction activities.

When the EPA issued the Report to Congress in February 1988, it stated, “The EPA has concluded that coal combustion waste steams generally do not exhibit hazardous characteristics under current RCRA regulations. EPA does not intend to regulate under subtitle C fly ash, bottom ash, boiler slag and flue gas desulfurization wastes.”

NAA’s efforts, along with many other stakeholders, had provided sufficient data to help the EPA understand that CCPs



Past predicts the future? A National Ash Association handout from 1983.



A modern look at the WVU Coliseum – a 14,000-seat multi-purpose arena which is located in the Evansdale campus of West Virginia University. It was featured on the first *Ash at Work* in 1969.

were (are) not hazardous and that they were of significant value. In that same report, the EPA further stated that were CCP waste disposal problems to arise, the EPA would use section 7003 of RCRA and sections 104 and 106 of CERCLA to address any threats or imminent hazards to human health and the environment.

As can be seen by this brief introduction, many of the issues first encountered and addressed by NAA, continue

today. In future articles, we will learn more about NAA's outreach and education activities as well as a few stories that may entertain. ♦

“The primary author and editor of the new publication was Allan W. Babcock of West Virginia who, despite this important role, rarely stepped into the spotlight.”

Photo: Dlywu/Wikipedia



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IN & AROUND ACAA

TRANSPORTATION RESEARCH BOARD – JANUARY 2012

American Coal Ash Association members volunteered to staff the ACAA exhibit booth at this year's Transportation Research Board meeting in Washington DC. The TRB Annual Meeting program covered all transportation modes, with more than 11,000 attendees, 4,000 presentations in nearly 650 sessions and workshops addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions.



Keith Bargaheiser, Headwaters Resources and ACAA Technical Committee Chairman; Ann Couwenhoven, Constellation Energy; and Mike Adams, Headwaters Resources.



Dr. Lisa Bradley, AECOM; and Ann Couwenhoven, Constellation Energy.

WINTER MEETING

The American Coal Ash Association's winter meeting in Tampa, Florida, attracted 180 attendees – the largest tally for any meeting in memory. Attendees were treated to a strong slate of speakers, including presentations by U.S. Congressman David McKinley and representatives of the Environmental Council of the States, American Road and Transportation Builders Association, National Ready Mixed Concrete Association, Tennessee Valley Authority, Tampa Electric, Electric Power Research Institute, U.S. Agricultural Research Service and more.



United States Congressman David McKinley of West Virginia provided a keynote address. Rep. McKinley was the primary sponsor of the "Coal Residuals Reuse and Management Act" which was approved by the U.S. House of Representatives last October and is now under consideration by the U.S. Senate.



The 2012 Winter Meeting attracted record attendance.



ACAA Executive Director Thomas Adams and Congressman David McKinley listen to a presentation during a meeting of the Association's Government Relations Committee.

NEW ACAA OFFICE UP AND RUNNING

Thanks to months of advance planning by American Coal Ash Association staff in Colorado, ACAA headquarters has now taken up residence in Michigan. The relocation was completed when ACAA's Aurora, Colorado, lease terminated in February. The Michigan location, hosted by Creative Association Management, was selected last year after a volunteer member task team solicited bids, reviewed proposals and negotiated a management services contract that was approved by the ACAA Board of Directors. Alyssa Barto now provides the day to day member services previously handled by Annely Noble.



**Front Row (left to right): Stacey Clement (Lead Accountant), Alyssa Barto (Member Liaison), Vicki Rogers (Event Planner).
Back Row (left to right): Melinda Reynolds (Manager, Member Services), Renee Lewis (Director, Publishing & Event Services), Barry Bergin (Supervisor, Publishing Services), Ryan Jay (Graphic Designer).**

ACAA MEMBERSHIP

Growth Levels Off as Challenging Industry Conditions Persist

By Annely Noble,
ACAA Special Assistant

There is nothing more important to the American Coal Ash Association than its members, for without them ACAA would not have the staff or resources to advance the management and use of coal combustion products in ways that are environmentally responsible, technically sound, commercially competitive, and supportive of a sustainable global community.

Memorable events in the coal combustion products industry three years ago caused a landslide of ACAA member applications resulting in a 21 percent increase in the number of approved members to date since January 2009. The increase might have been even more dramatic had it not been for the loss of some existing members resulting from the EPA rulemaking uncertainty and economic tumult that have occurred since the EPA decided to potentially reconsider the classification of coal combustion products to "hazardous for disposal".

Figure 1 shows the membership gains and losses during 2011. Although 2010 ended with 153 ACAA members and ACAA approved 18 additional new memberships, member losses resulted in a net gain of only one new member to a total of 154 by the end of 2011.

In exit interviews, departing member company points of contact gave several different reasons for allowing memberships to lapse:

- Individual members who had found employment in the industry dropped their memberships because they acquired membership access through new employers who belonged to ACAA;
- The member company decommissioned its coal combustion stations as a result of the age of the units, the cost to retrofit for new regulatory standards, or the EPA coal ash rulemaking uncertainty;
- In one instance, the company said that it had to change the thrust of its mission

Figure 1

Membership Gains/Losses

2010 ended with 153 members.	Gains 18	Losses 17
2011 Q1	7	1
2011 Q2	7	2
2011 Q3	3	7
2011 Q4	1	7
6 December 2011 154 Members		2011 – Net gain of one member

Figure 2

Welcome New 2011 Members!

- CH2M Hill
- First Union Rail
- Veolia Enviro Services
- Pinnacle Design Build Grp
- Advanced Wall Technologies
- Sustainable Enviro Conslnnts
- Hugh Shannonhouse
- Waste Management
- UWY Westrn Research Inst*
- Agru America, Inc.
- Aurora Energy, LLC
- Tri-State Gen & Trans Assn
- GSE Lining Technology, LLC
- Anne Egelston / Spitfire
- TestAmerica Laboratories
- Consumers Energy
- VHSC Cement, LLC
- COMANCO Environmental
- Mississippi Lime Company

*Reclassified/Reinstated



The American Coal Ash Association always welcomes suggestions from its members.

to remain viable in light of potential EPA rulemaking, and as a result, that ACAA's mission no longer fulfilled its new or different needs;

- Member companies are merging, which resulted in the loss of one utility member.
- Sadly, ACAA lost one individual membership due to the death of one of its members.

Dues income arrived slowly into the ACAA office in 2011. Although the bulk of companies paid their dues during the first quarter of the year, by the end of the third quarter there were still several companies remaining who were working on budgets (or grants) in order to allow them to pay their 2011 dues, something unprecedented in previous years. Some members had requested the ACAA quarterly dues payment option in order to alleviate cash flow issues.

ACAA noticed that those members who had not been active in Association meetings or EPA comment formulation were the members who either paid their dues very late or not at all. In order to benefit from the Association's work, ACAA encourages member companies

to remain engaged by attending and networking at meetings, participating in regularly scheduled teleconferences and committee work, requesting supporting materials from the ACAA office, reading *The Phoenix* and other e-news updates, and checking the ACAA website frequently.

Currently, ACAA's membership is comprised of 42 Utilities (27.3 percent), 2 Non-utility Producers (1.3 percent), 16 Marketers (10.4 percent), 14 Specialty Marketers (9.1 percent), 67 Associates (43.5 percent), and 13 Individuals (8.4 percent). Of these members, ACAA has 62 members on the Board of Directors, which represents 40 percent of the membership. Figure 2 recognizes new members who joined ACAA during 2011.

ACAA welcomes its new members and notifies its existing members of these additions using three means of communication:

- Through an individual e-mailed announcement which is sent to all existing member companies and its employees, and which provides a profile of the new member com-

pany, downloadable Outlook contact information for the new primary and alternate points of contact, and a link to the new member's website;

- Through an announcement in *The Phoenix*, ACAA's monthly e-news publication sent to all members; and,
- With a post on the ACAA homepage of the new member's company information as listed in the first bullet point above.

After ACAA has done its part in spreading the word, it counts on its existing members to welcome the new points of contact and to make business connections with them.

ACAA's complimentary publication, *Ash At Work*, is a primary source of new membership due to its large readership of about 10,000, its abundance and quality of advertisers, and its impressive and timely industry articles and information. The ACAA website which provides up-to-date industry news including the latest on EPA's forthcoming rulemaking is another significant source of member draw. Finally, our existing members are our best referrals! The American Coal Ash Association always welcomes suggestions from its members of potential businesses that would benefit from a member association with ACAA. A link to the membership application may be found on the ACAA homepage at www.acaa-usa.org. ♦

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2012 AMERICAN COAL ASH ASSOCIATION MEMBERSHIP DIRECTORY

These listings are organized into the following seven membership categories:

▪ Utility ▪ Marketer ▪ Speciality Marketer ▪ Associate ▪ Non-Utility ▪ Individual ▪ Honorary Members

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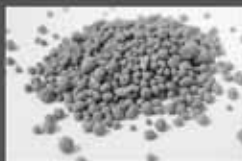
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