

COAL'S HIDDEN THREAT

Urgent action is needed now to solve Iowa's
Coal Combustion Waste Disposal Crisis



PLAINS JUSTICE is a public interest environmental law center that works for environmental justice and a sustainable economy on the Great Plains through community partnerships. Questions and comments may be directed to Plains Justice at info@plainsjustice.org.

Credits to Carrie La Seur and Jeffrey Stant, authors of the original report, and to Donna Wong-Gibbons and Kelsey Collier-Wise for additional research and input. For additional data, contact information, supporting documents, graphs, and reference sources about the threat posed by CCW in Iowa, please refer to the full version of the "Plains Justice Iowa Coal Combustion Waste Disposal Report," available online from plainsjustice.org or free by mail from Plains Justice: 100 First Street SW, Cedar Rapids, IA 52404, USA.

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WHAT'S IN THIS REPORT – AND WHY IOWANS SHOULD CARE

This report describes Iowa's regulation of Coal Combustion Waste (CCW), the risks this material poses and the changes to state and federal laws required to protect public health and Iowa's environment. As new sources of toxic CCW in Iowa and nearby states develop, disposal sites in Iowa are being targeted for hundreds of thousands of tons of additional coal waste. To safeguard the health of all Iowans, more effective state regulation of CCW disposal practices is urgently needed.

THE COAL INDUSTRY'S DIRTY SECRET: POISONS ON TAP

CCW is the mix of waste products left over when coal is burned to provide power. When improperly disposed of, the heavy metals in this material can leach into and pollute groundwater. The result is a poisonous cocktail containing dangerous levels of arsenic, lead, selenium, zinc, mercury and other known cancer-causing agents. Why should Iowans be concerned? Because today, right now, Iowa is producing – and even importing – enormous amounts of hazardous coal ash. This toxic waste is being placed into our landfills, abandoned mines, quarries and other sites – all without the kind of regulations in place that could prevent or monitor the contamination of our aquifers, wells and other drinking water sources.

IOWA'S CCW DISPOSAL LAWS: HAZARDOUS TO YOUR HEALTH

In 2007 and 2008, Iowa alone produced more than 1.6 million tons of CCW. But this staggering number is only part of the story. Since disposing of coal ash is a major expense to plant operators, this waste product currently crosses state boundaries in search of the cheapest, least-regulated sites. Because of Iowa's relatively weak CCW disposal regulations, coal-burning plants from as far away as Indiana are sending their coal ash waste here, and they're sending it by the boxcar and truckload. Recent state records show nearly two dozen sites where CCW from in- and out-of-state sources has been dumped as "fill," but the actual number of fill sites could be much higher. CCW is also applied to agricultural land in large quantities as a "soil modifier." Two Iowa sites use what may be the riskiest form of storage: filling unlined, open-air quarries with huge quantities of dangerous waste. And, even more troubling, a significant portion of these sites are located adjacent to residential areas or rural water supplies. "As we do more to address air quality problems caused by coal combustion, we turn air toxics into soil and water toxics by putting high concentrations of heavy metals in the ground," says Carrie La Seur, the founder of Plains Justice.

CCW'S DEADLY FORMULA: HEAVY METALS + DRINKING WATER = PROVEN DAMAGES

The main health risk from the dumping of toxic CCW materials in Iowa comes from contamination of groundwater, which ends up as drinking water for both humans and livestock. The contaminants in CCW include heavy metals proven to cause cancer and other diseases. These poisonous substances include not only arsenic, but also cadmium, chromium, lead, thallium, boron, selenium, nickel, molybdenum, antimony and vanadium. Ironically, recent advances in controlling the release of coal plant pollution into the air have actually increased the levels of these hazardous substances in coal plant waste: the technology that "scrubs" pollution from smokestack emissions concentrates heavy metals in the left-over materials. As this technology continues to improve, coal ash will become increasingly dangerous to humans and animals.

WHAT EXACTLY IS CCW?

CCW INCLUDES A VARIETY OF WASTE PRODUCTS FROM THE BURNING OF COAL IN POWER PLANTS. COAL ASH CONTAINS BOTH FLY ASH AND BOTTOM ASH. ANOTHER COMPONENT OF CCW IS FLUE GAS DESULFURIZATION WASTE, WHICH IS GENERATED WHEN SMOKESTACK EXHAUST IS "SCRUBBED" TO REMOVE SULFUR, WHICH CAUSES ACID RAIN. BOILER SLAG IS THE MOLTEN COAL ASH FROM THE BOTTOM OF COAL-BURNING FURNACES. ALL OF THESE MATERIALS ARE REFERRED TO AS COAL COMBUSTION WASTE. THE TERM "COAL ASH" IS ALSO COMMONLY USED TO DESCRIBE ANY OR ALL OF THESE MATERIALS.



THE TVA KINGSTON COAL ASH SPILL: A BILLION GALLONS OF TOXIC SLUDGE. 300 ACRES OF DESTRUCTION. \$1.2 BILLION IN COSTS AND COUNTING...

On December 22, 2008, the Tennessee Valley Authority's Kingston Fossil Plant disposal site in Harriman, Tennessee experienced the worst CCW containment site disaster in U.S. history. On that day, a dike built from coal ash materials unexpectedly suffered a catastrophic failure, unleashing a tidal wave of toxic coal ash sludge from the impoundment. The dike failure poured over one billion gallons of highly contaminated sludge across an area of more than 300 acres. The material surged into streams that drained into the Tennessee River, generating dangerous levels of arsenic, chromium, lead and other heavy metals and chemicals. According to information released by the TVA: "Estimated expenses for the cost of the clean-up related to the Kingston ash spill range from \$933 million to \$1.2 billion. The estimate does not include certain costs, such as damages that might be awarded in litigation or fines that might be imposed."

Could Iowa taxpayers be expected to foot the bill for a similar CCW disposal site failure here in our state? As our regulations currently stand, the answer is clearly "yes."

How severe are the potential health risks from exposure to CCW? In 2007, the U.S. Environmental Protection Agency (EPA) released a draft risk assessment that determined there are extremely high risks to human health and the environment from the disposal of CCW in waste ponds and unlined landfills. In the agency's 2007 CCW Damage Case Assessment report, EPA collected information and evaluated 85 possible damage cases around the country. Of the 85 cases, EPA determined that 24 were proven cases of damage. Sixteen cases revealed proven damages to ground water and eight showed proven damages to surface water. Four of the proven damage cases involved ground water from unlined landfills, five were from unlined surface impoundments, one was due to a liner failure at a surface impoundment, and the remaining six were from unlined sand and gravel pits. Another 43 cases were determined to involve potential damages to ground water or surface water.

With nearly 600 surface or landfill CCW disposal sites identified by EPA as of September, 2009, the damage cases cited above represent merely the tip of a virtual iceberg of toxic waste in terms of potentially serious, long-term health impacts. With 24 proven damage cases of 85 that were evaluated, almost 30% of the cases resulted in proven damages. If a similar percentage of damage cases are found in the 580 sites identified by fall 2009, it would translate to more than 150 documented damage cases nationwide.

EPA itself has estimated that sites may continue to leach or contaminate their surroundings for 75 to 100-plus years after being closed. This means sites receiving a "clean" bill of health today might still contaminate both ground and surface water for decades to come.

But what is the specific nature of the pollution threat from these disposal practices? In the case of arsenic, one of the heavy metals that can be highly concentrated in CCW, the conse-



IOWANS SPEAK OUT AGAINST CCW

Here in Iowa, we have great resources in terms of water - aquifers and rivers and streams. And if we continue to allow coal ash to be disposed of in unlined quarries, we are not serving as good stewards of those resources.

— G.M. "Jeri" Thornsberry, Waterloo, IA

Coal ash is something that was a part of everyday life in Iowa. People used to shovel it out of their gravity furnace and spread it on their garden or in the fields. They also sent it to the landfill without thinking about consequences. It was considered a benign aspect of winter life. At some point, as we converted our coal burning gravity furnaces to cheaper to operate natural gas, society began to forget about coal ash. [Roughly] 70% of the electricity produced in Iowa is produced from coal. Power companies are now major producers of coal ash and they store it and eventually ship it to places that society has deemed appropriate. Especially after the TVA release of coal ash, we have become aware that what was acceptable regarding storage and disposal of coal ash is acceptable no longer. Today, we recognize, more than ever, that everything in the world is connected. If we make large pools of coal ash and they are released into our rivers and streams, there are consequences for the environment and for everything that draws life from the ecosystem."

— Paul Deaton, a native Iowan living in rural Johnson County

quences can be frightening. The cancer risk for adults and children who drink groundwater contaminated with arsenic from unlined CCW landfill sites can be as high as one in 100. This figure is 10,000 times higher than EPA regulatory goals for reducing cancer. According to Harvard University research into the effects of arsenic on humans, skin lesions will appear after several years of low-level arsenic exposure. Over longer periods, victims will develop thickened, horny tissue on the hands and feet, followed by cancers on the skin. Exposures of 20 to 30 years can result in cancers of the lungs, kidneys, liver and bladder among ten percent of victims.

Other toxic metals found in CCW are also extremely dangerous to humans. Long-term increased consumption of selenium can result in deformation and loss of fingernails and toenails, loss of hair, excessive tooth discoloration and decay, listlessness and decreased mental alertness. High levels of cadmium have been linked to kidney damage and higher risk of prostate and respiratory cancers. Lead poisoning has a host of harmful health effects, with young children especially vulnerable. Their developing nervous systems are uniquely susceptible to even very low levels of lead exposure, which can result in reduced IQ, learning disabilities, attention deficit disorder, behavioral problems, stunted growth, impaired hearing and kidney damage. Higher levels of lead poisoning can cause mental retardation, coma and death. In adults, lead exposure can increase blood pressure, cause fertility problems, nerve disorders and a range of cognitive problems. The best science today tells us that there may be no safe level of exposure to lead. How does Iowa rate when it comes to protecting our children and our families from exposure to lead? Currently, Iowa's lead poisoning level is nearly three times the national average.

But isn't EPA on the job, protecting Americans health in this vital area? Unfortunately, documents recently released by EPA reveal that during the past decade, EPA publications and other documentation about the dangers of CCW have been submitted to, and altered by, representatives of the coal ash industry who watered down official reports, brochures and fact-sheets in a variety of ways intended to mask the true nature of the threat posed by CCW. Coal industry representatives were allowed to remove references to potential dangers and play up "environmental benefits" of a wide range of applications for these hazardous materials.

The released documentation also shows that EPA staff members alerted coal industry personnel about conference calls and other intra-agency discussions about concerns over "increased leaching of arsenic" from fly ash in order to let the coal industry know where to target its lobbying efforts. One coal industry representative actually joked to EPA staff about the cozy relationship between Big Coal and EPA in an October 27, 2008 e-mail. Referring to a news article about mercury contamination from coal ash, this person stated: "We [the coal industry] are in bed with EPA again, it looks, at least according to this article."

While it's a well-worn axiom that "politics makes strange bedfellows," the bedfellows in this example represent a decidedly unwholesome relationship, with direct and very real consequences for the unprotected public. Industry redaction of EPA materials also serves as a powerful and disconcerting statement about the nature of information available to citizens when it comes to the dangers posed by CCW. Finally, industry's success over decades in preventing needed regulation of CCW is a clear warning about the risks of allowing private business interests to gain unwarranted influence over the agencies charged with overseeing them. American families deserve better, and we must ensure that EPA quickly implements more stringent oversight in this vital area of public safety.

[Reference the **CCW DISPOSAL TOTALS FOR SELECTED IOWA SITES IN 2007-2008** chart on pages 7-10.]

THINK THERE ARE TOUGH NATIONAL STANDARDS FOR REGULATING CCW? THINK AGAIN.

In 1980, Congress decided these waste products should temporarily be classified as non-hazardous, pending further analysis. In 2000, EPA determined that national regulations were in fact appropriate for CCW placed in landfills and surface impoundments and, under some conditions, when placed in abandoned mines.

But as of December 2009, EPA had not acted on the earlier decision that national regulations were needed.

While EPA and a utility industry consortium have created a "Voluntary Action Plan" for CCW management, this plan is a vaguely worded, unenforceable document that fails to address even the most basic conditions for safe CCW management. Until EPA does act, there is no effective nationwide regulation of the vast quantities of highly toxic materials headed for numerous CCW dumping sites in Iowa and other states.

CURRENT IOWA CCW DISPOSAL REGULATIONS – AND WHY THEY DON'T WORK

As they are now written, Iowa's CCW disposal regulations are weaker than those of many other states, and much looser than the regulations recommended to EPA by national and regional environmental organizations, including Plains Justice. This makes Iowa a leading contender in the "race to the bottom" as coal plants go looking for the cheapest, most casually regulated sites in which to dump their waste products.

Iowa's sanitary landfill CCW regulations are clearly insufficient to protect Iowan's health or our environment. CCW approved for "Beneficial Use" (see page 5) is subject to even fewer protective standards and is totally exempt from even the modest permitting requirements for landfills. Among their deficiencies, these requirements fail to analyze a fill site's suitability prior to approval.

Another area of concern involves adequate barrier and cover for dump sites. While other Midwestern states have detailed, comprehensive requirements for the isolation and covering of their disposal sites, Iowa has no regulations addressing these vital issues.

Monitoring of CCW dump sites is another area where effective regulation is desperately needed. Under current law, the total lack of surface water sampling and infrequency of groundwater sampling at dump sites means dangerous contamination will go unnoticed or be "fixed" too late to avoid severe human and environmental damage. Even with the insufficient monitoring now being conducted, data collected from Iowa CCW landfills shows that waste from these facilities has begun to contaminate groundwater.

Lack of financial assurances from operators is one more cause for concern when it comes to CCW disposal in Iowa. Without enforceable rules regarding liability, the state may be forced to shift the costs

of site monitoring, closure and/or clean up to taxpayers. As the billion-dollar-plus price tag of the recent TVA Kingston coal ash spill in Tennessee clearly shows, costs resulting from improper regulation of CCW disposal sites can be astronomical.

Additionally, under the existing statutes in Iowa, the state can and does grant “variances,” or exceptions to the regulations regarding safe CCW disposal. For instance, under certain conditions, operators who subject their CCW to a process that hardens it into a cement-like substance before or during disposal are then allowed to exceed the accepted toxicity limits for heavy metals like lead, beryllium, cadmium and chromium. But the science on whether or not this process makes the CCW safe is far from settled, and long-term tests proving the safety of this “set-up” waste material have yet to be conducted.

For years, power plant operators in the state have lobbied hard to keep Iowa’s CCW disposal regulations from interfering with their ability to dump these toxic materials where they want, when they want, with virtually no effective oversight or financial responsibility should anything go wrong. This state of affairs poses a direct, proven threat to the health of Iowans and should be seen by both legislators and voters as unacceptable.

WHO REALLY BENEFITS FROM “BENEFICIAL USE”?

One of the more worrisome aspects of CCW disposal is the classification of coal plant waste for “beneficial use.” The “beneficial use” designation ignores the proven toxicity of CCW to make this waste material available for a variety of industrial processes and products, from gypsum wallboard to fill material for abandoned quarries.

Iowa currently has nearly two dozen sites approved for CCW “beneficial use,” including abandoned, unlined quarries, empty “rooms” in working mines filled with waste on an on-going basis, and one-time projects such as road building or construction fill. Conditions vary from site to site, but under present Iowa law, none of these dump sites are required to monitor for any potential pollution.

EPA is currently evaluating whether or not to re-classify CCW as “hazardous” waste. This would certainly impact the various “beneficial” uses of coal ash waste materials, from dumping in landfills and mines to use in consumer products. But Iowans shouldn’t have to wait for federal action. We can, and should, protect our citizens and environment now by enacting comprehensive protective regulations regarding CCW disposal in Iowa.

YOUR WATER OR YOUR LIFE: WHY IOWA CAN’T WAIT FOR FEDERAL REFORM

To protect the health of Iowans and provide the most basic safeguards for our environment, Iowa’s CCW disposal regulations need to improve, and quickly. If we want to take Iowa out of the running as the preferred Midwestern state for dumping toxic coal ash, flue gas desulfurization waste and boiler slag, the following proposed improvements to regulations for landfill sites are a sound foundation for comprehensive CCW oversight in Iowa.

1. There must be improved analysis of proposed CCW disposal sites before permits are approved.
2. Operators of CCW disposal sites must be responsible for analyzing and reporting the chemical and physical properties of CCW before accepting it at their facilities, and must continue to analyze and report these attributes over time.
3. Operators must design a facility that is able to limit the impact of hazardous substances to acceptable levels during the lifetime of the site, through the closure of the site and after the site has been closed.
4. Increased monitoring is needed of the construction, operation and performance of the site during operation and after its closure.
5. Both groundwater and surface water monitoring must be in place to provide a realistic picture of contamination from hazardous materials leaching out of the CCW.
6. Correction of adverse effects from sites must be required by setting standards that call for remedial action if the standards are exceeded as well as if standards will be exceeded in the future.
7. Financial responsibility on the part of operators during the life of the site and during closure/post-closure years must be assured before permits for landfills are approved.

There are numerous, well-documented instances of harmful effects from the improper disposal of CCW throughout the United States, yet Iowa’s laws still make no meaningful effort to regulate dumping these toxic materials in our landfills, quarries and mines.

The lax control over so-called “beneficial use” of hazardous coal plant waste products is another area where legislative action is necessary.

We recommend that the Iowa Administrative Code (IAC) be changed to remove the “beneficial use” exemption from the Code’s existing landfill standards. Because of the many other deficiencies in Iowa regulation of hazardous coal plant waste disposal, we also recommend:

1. Halting any additional permitting, renewal or expansion of beneficial use.
2. Closing existing fill sites on the most expeditious yet practical schedule, but in any case within two years.
3. Imposing immediate and long-term monitoring at existing fill sites.
4. Requiring cleanup of contamination detected at existing sites.

IN CONCLUSION...

Iowa’s longstanding under-regulation of CCW landfill sites and so-called “beneficial use” of these dangerous materials pose significant risks of undetected environmental damage, major financial liability and proven threats to the health of Iowans. Waiting for national reform may not be an option. Iowa must take immediate steps to improve its CCW disposal regulations, or risk becoming – or remaining – the go-to state for any operator seeking the most economical, least-regulated sites for CCW dumping.

For the sake of Iowa’s children, families and environment, now is the time to demand more effective regulation of a situation that, left unattended, poses ever-greater threats to the health and well-being of Iowans.

UNMONITORED WASTE. UNACCEPTABLE RISK.

More than 80,000 tons of poisonous CCW were dumped in the open-air site at Waterloo South Quarry in 2007 and 2008, all without liners required or any post-disposal monitoring of contaminants leaching into groundwater.



This report is an updated, condensed version of the “Plains Justice Iowa Coal Combustion Waste Disposal Report,” issued in November 2007. The full report is available online at plainsjustice.org or free by mail from Plains Justice, 100 First Street SW, Cedar Rapids, IA 52404.

More Than 1.6 Million Tons of Toxic Waste...and Counting

CCW DISPOSAL TOTALS FOR SELECTED IOWA SITES IN 2007-2008

PLANT / LANDFILL	DATES	WASTE TYPE	LANDFILLED TONNAGE	USAGE	PLANT / LANDFILL	DATES	WASTE TYPE	LANDFILLED TONNAGE	USAGE	
Interstate Power & Light Lansing Power Station	Jan. 1 - Mar. 31, 2007	Coal combustion waste	7,056.00	U	Grain Processing Corporation	Jan. 1 - Mar. 31, 2007	Coal combustion waste	10,772.00	U	
	July 1- Sept. 30, 2007	Unspecified	19,440.00	U		Jan. 1 - Mar. 31, 2007	Spent Carbon	1,260.00	U	
	July 1 - Sept. 30, 2007	Unspecified	23,504.00	U		July 1- Sept. 30, 2007	Coal combustion waste	11,341.00	U	
	Oct. 1 - Dec. 31, 2007	Unspecified	6,816.00	U		July 1- Sept. 30, 2007	Spent Carbon	1,288.00	U	
	Jan. 1 - Mar. 31, 2008	Unspecified	9,152.00	U		July 1 - Sept. 30, 2007	Coal combustion waste	8,943.00	U	
	Apr. 1 - Jun. 30, 2008	Unspecified	28,988.00	U		July 1 - Sept. 30, 2007	Spent carbon	2,557.00	U	
	July 1- Sept. 30, 2008	Unspecified	22,240.00	U		Oct. 1 - Dec. 31, 2007	Coal combustion waste	9,818.00	U	
	Oct. 1 - Dec. 31, 2008	Unspecified	3,920.00	U		Oct. 1 - Dec. 31, 2007	Spent carbon	1,614.00	U	
TOTAL 121,116.00					Jan. 1 - Mar. 31, 2008	Coal combustion waste	10,528.00	U		
Cedar Falls Utilities CCR Landfill	Jan. 1 - Mar. 31, 2007	Fly ash	2,190.00	U	Jan. 1 - Mar. 31, 2008	Spent carbon	2,489.00	U		
	July 1- Sept. 30, 2007	Fly ash	1,425.00	U	Apr. 1 - Jun. 30, 2008	Coal combustion waste	9,794.00	U		
	July 1 - Sept. 30, 2007	Fly ash	3,375.00	U	Apr. 1 - Jun. 30, 2008	Spent carbon	2,657.00	U		
	Oct. 1 - Dec. 31, 2007	Fly ash	3,585.00	U	July 1- Sept. 30, 2008	Coal combustion waste	9,343.00	U		
	Jan. 1 - Mar. 31, 2008	Fly ash	1,899.00	U	July 1- Sept. 30, 2008	Spent carbon	3,131.00	U		
	Apr. 1 - Jun. 30, 2008	Fly ash	373.00	U	Oct. 1 - Dec. 31, 2008	Coal combustion waste	9,150.00	U		
	July 1- Sept. 30, 2008	Fly ash	-	U	Oct. 1 - Dec. 31, 2008	Spent Carbon	2,763.00	U		
	Oct. 1 - Dec. 31, 2008	Fly ash	-	U	TOTAL 97,448.00					
TOTAL 12,847.00					Cargill Sweeteners	Jan. 1 - Mar. 31, 2007	Fly ash	-	U	
Corn Belt Power Cooperative CCR Landfill	Jan. 1 - Mar. 31, 2007	Coal combustion waste	864.60	U		Jan. 1 - Mar. 31, 2007	Coal combustion waste	-	U	
	July 1- Sept. 30, 2007	Coal combustion waste	360.40	U		July 1- Sept. 30, 2007	Coal combustion waste	-	U	
	July 1 - Sept. 30, 2007	Coal combustion waste	606.00	A		July 1 - Sept. 30, 2007	Coal combustion waste	-	U	
	Oct. 1 - Dec. 31, 2007	Coal combustion waste	284.00	U		July 1 - Sept. 30, 2007	Gypsum	-	U	
	Jan. 1 - Mar. 31, 2008	Coal combustion waste	1,000.00	U		Oct. 1 - Dec. 31, 2007	Coal combustion waste	-	U	
	Apr. 1 - Jun. 30, 2008	Coal combustion waste	669.80	U		Oct. 1 - Dec. 31, 2007	Gypsum	-	U	
	July 1- Sept. 30, 2008	Unspecified	1,136.40	U		Jan. 1 - Mar. 31, 2008	Coal combustion waste	-	U	
	Oct. 1 - Dec. 31, 2008	Coal combustion waste	-			Jan. 1 - Mar. 31, 2008	Gypsum	-	U	
TOTAL 4,921.20						Apr. 1 - Jun. 30, 2008	Coal combustion waste	-	U	
Iowa Army Ammunition Plant	Jan. 1 - Mar. 31, 2007	Coal combustion waste	509.00	B	Apr. 1 - Jun. 30, 2008	Gypsum	-	U		
	July 1- Sept. 30, 2007	Coal combustion waste	868.00	B	July 1- Sept. 30, 2008	Coal combustion waste	-	U		
	July 1 - Sept. 30, 2007	Coal combustion waste	497.00	U	July 1- Sept. 30, 2008	Gypsum	-	U		
	July 1 - Sept. 30, 2007	Sludge from coal pile run-off water treatment facility	367.00	U	Oct. 1 - Dec. 31, 2008	Coal combustion waste	-	U		
	Oct. 1 - Dec. 31, 2007	Coal combustion waste	933.00	U	Oct. 1 - Dec. 31, 2008	Gypsum	-	U		
	Jan. 1 - Mar. 31, 2008	Coal combustion waste	1,032.00	U	TOTAL -					
	Apr. 1 - Jun. 30, 2008	Coal combustion waste	753.00	U						
	July 1- Sept. 30, 2008	Coal combustion waste	128.00	U						
	July 1- Sept. 30, 2008	Sludge from coal pile run-off water treatment facility	367.00	U						
	Oct. 1 - Dec. 31, 2008	Coal combustion waste	1,118.00	B						
	TOTAL 6,572.00									

USAGE LEGEND

- A = Beneficial Daily Coverage
- B = Manufacturing of Cement
- C = Gypsum/wallboard
- D = Road Snow Traction Control
- E = Roofing Granules
- F = Soil Stabilization
- G = C-Stone/manufactured aggregate
- U = Unspecified



Unless Iowa laws are changed, more CCW is on the way.

PLANT / LANDFILL	DATES	WASTE TYPE	LANDFILLED TONNAGE	USAGE
Muscatine Power & Water	Jan. 1 - Mar. 31, 2007	Fly ash	2,381.00	B, C, D
	July 1- Sept. 30, 2007	Fly ash	1,957.00	B, C, E
	July 1- Sept. 30, 2007	Bottom ash/FGD byproduct blend	200.00	U
	July 1- Sept. 30, 2007	Bottom ash	3,350.00	U
	July 1 - Sept. 30, 2007	Fly ash	2,505.00	B, C, E
	Oct. 1 - Dec. 31, 2007	Fly ash	1,968.00	U
	Oct. 1 - Dec. 31, 2007	Bottom ash	2,290.00	U
	Jan. 1 - Mar. 31, 2008	Fly ash	2,241.00	B, C, D, E
	Jan. 1 - Mar. 31, 2008	Bottom ash	531.00	U
	Apr. 1 - Jun. 30, 2008	Fly ash	2,461.00	U
	Apr. 1 - Jun. 30, 2008	Bottom ash	7,686.00	U
	July 1- Sept. 30, 2008	Bottom ash	1,942.00	U
	July 1- Sept. 30, 2008	Bottom ash/FGD byproduct blend	2,481.00	U
	July 1- Sept. 30, 2008	Fly ash	2,112.00	U
	Oct. 1 - Dec. 31, 2008	Bottom ash	3,378.00	B, C, D, E
	Oct. 1 - Dec. 31, 2008	Fly ash	1,793.00	U
	TOTAL			39,276.00
Central Iowa Power Cooperative	Jan. 1 - Mar. 31, 2007	Fly ash	936.00	U
	July 1- Sept. 30, 2007	Coal combustion waste / fly ash	7,922.00	U
	July 1 - Sept. 30, 2007	Coal combustion waste	28,603.00	U
	Oct. 1 - Dec. 31, 2007	Flyash, coal combustion waste	14,729.00	U
	Jan. 1 - Mar. 31, 2008	Flyash, coal combustion waste	1,760.00	U
	Apr. 1 - Jun. 30, 2008	Coal combustion waste	5,137.00	U
	July 1- Sept. 30, 2008	Coal combustion waste	18,562.00	U
	Oct. 1 - Dec. 31, 2008	Coal combustion waste	15,831.00	U
TOTAL			93,480.00	

PLANT / LANDFILL	DATES	WASTE TYPE	LANDFILLED TONNAGE	USAGE	
MidAmerican - Louisa Generating Station	Jan. 1 - Mar. 31, 2007	Coal combustion waste	25,029.00	B	
	July 1- Sept. 30, 2007	Coal combustion waste	10,316.00	B, F	
	July 1 - Sept. 30, 2007	Coal combustion waste	5,073.00	B, F	
	Oct. 1 - Dec. 31, 2007	Coal combustion waste	2,905.00	B	
	Jan. 1 - Mar. 31, 2008	Coal combustion waste	52,671.00	B, F	
	Apr. 1 - Jun. 30, 2008	Coal combustion waste	33,393.00	B, F	
	July 1- Sept. 30, 2008	Coal combustion waste	30,098.00	B, F	
	Oct. 1 - Dec. 31, 2008	Coal combustion waste	32,641.00	B, F	
	TOTAL			192,126.00	
	MidAmerican - Walter Scott Jr. Energy Center	Jan. 1 - Mar. 31, 2007	-	-	U
		July 1- Sept. 30, 2007	Coal combustion waste	-	U
July 1 - Sept. 30, 2007		Coal combustion waste	21,959.58	U	
Oct. 1 - Dec. 31, 2007		Coal combustion waste	136,474.07	U	
Jan. 1 - Mar. 31, 2008		Coal combustion waste	88,689.18	U	
Apr. 1 - Jun. 30, 2008		Coal combustion waste	90,115.12	U	
July 1- Sept. 30, 2008		Coal combustion waste	88,680.75	U	
Oct. 1 - Dec. 31, 2008		Coal combustion waste	90,172.50	U	
TOTAL			516,091.20		
Ottumwa-Midland CCR Landfill		Jan. 1 - Mar. 31, 2007	Coal combustion products	7,602.80	U
	July 1- Sept. 30, 2007	Coal combustion products	7,793.61	U	
	July 1 - Sept. 30, 2007	Coal combustion products	7,284.66	U	
	Oct. 1 - Dec. 31, 2007	Coal combustion products	5,973.41	U	
	Jan. 1 - Mar. 31, 2008	Coal combustion products	5,828.19	U	
	Apr. 1 - Jun. 30, 2008	Coal combustion products	4,288.03	U	
	July 1- Sept. 30, 2008	C-Stone (CCP)	7,998.98	U	
	Oct. 1 - Dec. 31, 2008	Coal combustion products	6,351.66	U	
TOTAL			53,121.34		
MidAmerican - Neal North CCR Landfill	Jan. 1 - Mar. 31, 2007	Coal combustion waste	23,954.00	B, F	
	July 1- Sept. 30, 2007	Coal combustion waste	13,023.00	B, F	
	July 1 - Sept. 30, 2007	Coal combustion waste	159,542.00	B, F	
	Oct. 1 - Dec. 31, 2007	Coal combustion waste	17,411.00	B, F	
	Jan. 1 - Mar. 31, 2008	Coal combustion waste	228,570.00	B, F, G	
	Apr. 1 - Jun. 30, 2008	Coal combustion waste	-	B, F	
	July 1- Sept. 30, 2008	Coal combustion waste	-	B, F	
	Oct. 1 - Dec. 31, 2008	Coal combustion waste	-	B, F, G	
	TOTAL			442,500.00	
	MidAmerican - Neal South CCR Landfill	Jan. 1 - Mar. 31, 2007	Coal combustion waste	26,783.00	B, F, G
July 1- Sept. 30, 2007		Coal combustion waste	1,464.00	B, F, G	
July 1 - Sept. 30, 2007		Coal combustion waste	8,616.00	B, F, G	
Oct. 1 - Dec. 31, 2007		Coal combustion waste	14,444.00	B, F, G	
Jan. 1 - Mar. 31, 2008		Coal combustion waste	31,402.00	B	
Apr. 1 - Jun. 30, 2008		Coal combustion waste	7,431.00	B, F, G	
July 1- Sept. 30, 2008		Coal combustion waste	8,752.00	B, F, G	
Oct. 1 - Dec. 31, 2008		Coal combustion waste	3,698.00	B, F, G	
TOTAL			102,590.00		
GRAND TOTAL			1,682,088.74		

USAGE LEGEND
A = Beneficial Daily Coverage D = Road Snow Traction Control G = C-Stone/manufactured aggregate
B = Manufacturing of Cement E = Roofing Granules U = Unspecified
C = Gypsum/wallboard F = Soil Stabilization



These totals represent only a portion of the total CCW disposed of in Iowa, and even more CCW is sent to Iowa for disposal from other states.