



ENVIRONMENTAL & COAL TECHNOLOGY

PROJECT FACTS

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Technology for the Recovery of Fuel and Adsorbent Carbons from Coal Burning Utility Ash Ponds and Landfills

Utilization of stored combustion ash is a topic of significant concern for coal-burning utilities. The primary use for stored ash has historically been limited to structural fill. However, developments in ash processing technology at CAER provide the potential to generate high-quality, consistent products from stored ash making new markets for these products available. Successful implementation of these technologies will greatly mitigate current ash disposal pressure by creating additional space in existing ponds and by eliminating the cost and environmental liabilities associated with construction of new disposal facilities.

The overall objective of this project was to conduct proof-of-concept (POC) scale testing of the *Fuel Float*TM technology, a technology developed to recover high-quality fuel and lightweight aggregate from utility ash ponds and landfills. Pilot scale testing was conducted at WKE's Coleman Station located in Hawesville, KY. Coleman Station is a 521 MW facility burning bituminous coal and utilizing a sluicing system to store combustion ash on site. Pond coring was completed at Coleman Station and it was determined that 1.35M tons of ash is stored on site, of which approximately 88K tons is recoverable carbon. Of the remaining 1.27M tons of carbon-free ash, 12 % is potentially usable as lightweight aggregate.

Pilot-scale testing recovered over 500 pounds of coarse carbon as well as 500 pounds of fine carbon from the ash pond at Coleman Station using the *Fuel Float*TM process, a technology that uses hydraulic classification to separate fine and coarse-size fractions. Carbon was recovered from the coarse-size fraction by gravity concentration, while additional carbon was recovered from the fine-size fraction by froth flotation. Both streams were dewatered to produce a high-quality supplemental fuel and characterized for use as supplemental fuel in a utility boiler as well as adsorbent carbon.

