Use of Fly Ash in Acid Mine Reclamation: Arsenic Behavior. (A05-kolbe162407-Poster)

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Abstract:

Coal Combustion Products (CCPs) such as fly ash residues are produced in large quantities by electric power plants using coal as fuel. In Indiana there are a number of active and inactive coal mines where mine filling with CCPs is permitted under Indiana Department of Natural Resources regulations. One such mine was an inactive open-pit (or strip) mine in Southern Indiana located near a power plant with active acid mine drainage. Over the past 13 years the mine has been filled with approximately 1.6 million tons of fly ash in an attempt to neutralize the pH and reclaim the land. Several water-monitoring wells have been installed and numerous core samples have been taken, including a continuous 60 ft, 2 in diameter split-spoon core from the center of the fill material for monitoring the reclamation progress. In this research, sequential leaching experiments have been performed on several core samples to evaluate the mobility of arsenic and other constituents from the ash and surrounding spoils material. We report on aqueous leachate and total ash concentrations of various inorganic components with depth and compare them to groundwater concentrations at the site.

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