

PAHs and Dioxins Not Present in Fly Ash at Levels of Concern

Lisa J.N. Bradley¹, A. Elizabeth Perry¹, Kelly A.S. Vosnakis², and Christine Archer³

¹AECOM Environment, 2 Technology Park Drive, Westford, MA 01886; ²AECOM Environment, 11 Phelp's Way, P.O. Box 506, Willington, CT 06279; ³AECOM Environment, 171 Daniel Webster Highway, Suite 11, Belmont, NH 03220

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ABSTRACT

Coal ash is the material remaining after coal burns, and fly ash is the fraction that exits the combustion chamber in the flue of the boiler and is collected in air pollution control systems prior to atmospheric release. Although numerous published reports have demonstrated that polycyclic aromatic hydrocarbons (PAHs) and polychlorinated dibenzodioxins/dibenzofurans (dioxins/furans) are not present in fly ash at appreciable levels, some regulators continue to require a site-specific demonstration. The results from ten fly ash samples analyzed for PAHs and dioxins/furans are presented and compared to conservative risk-based human health and ecological screening levels. The comparison indicates that all PAH concentrations in all 10 samples were below the conservative screening levels. The dioxin/furan data were evaluated on a toxic equivalency (TEQ) basis using USEPA-approved toxic equivalency factors (TEF). All 10 results were below the human health TEQ screening level, and the majority of the samples (8 of 10) were below mammalian- and avian-based ecological TEQ screening levels. The findings suggest that expensive analyses for PAHs and dioxins/furans for future fly ash site investigations may be unnecessary and unwarranted.