

Computer Simulations of Ammonia Migration from Ash Monofills

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KEYWORDS: Ash disposal, ammonia release, computer simulation

ABSTRACT

Computer simulations were conducted to evaluate potential migrating pathways of ammonia from fly ash monofills and to provide an overall understanding of the fate of ammonia in such environment. Computer models were employed to provide quantitative analysis of the transformations and movements of ammonia through various environmental media. The pathways that were being evaluated include leaching of ammonia from the unsaturated zone to the water table, mass loading into the water table, solute transport in groundwater, and groundwater mixing with a receiving surface water body. The models use a combination of general relationships and assumptions, hypothetical settings, published and/or situation-specific information to estimate the distribution of ammonia over space and time to assess potential exposure to environmental receptors. A number of different transport scenarios were simulated to assess the sensitivity of critical input parameters that may impact the mobility of ammonia and its nitrogen derivatives at different stages of transport in various media.

Submitted for consideration in the 2005 World of Coal Ash, April 11-15, 2005, Lexington, Kentucky, USA.