



Waste-To-Energy Ash Residue

Waste-to-energy facilities burn trash to generate electricity. After combustion, an ash residue remains that traditionally has been disposed in landfills. Disposal isn't the only option. **Nearly 3 million tons of ash, or more than one-third of all residue, is being reused annually as landfill roadbed material, daily and final landfill cover, road aggregate, asphalt-mixture, and even in the construction of artificial reefs and cement blocks.**¹

In accordance with the federal law, waste-to-energy ash is tested to ensure it is non-hazardous. The U.S. EPA developed a test called the Toxicity Characteristic Leaching Procedure (TCLP) that subjects ash to acidic liquid, causing metals to leach from the material. If metals leach in amounts greater than a fraction of a percent, the ash is considered hazardous. Years of testing ash from every waste-to-energy facility in the country has proven ash safe for disposal and reuse. **Waste-to-energy ash consistently passes TCLP, despite the fact that the TCLP test greatly exaggerates the potential for metals to leach from ash into the environment.**²

Test results and measurements taken in the field show that the levels of metals present in waste-to-energy ash leachate are close to the significantly more restrictive drinking water standards and far lower than the TCLP toxicity criteria.³

Ash represents about 10% by volume of the trash combusted. Ferrous metals are removed at the facility, leaving a residue that looks a lot like wet cement. Waste-to-energy residue actually has physical properties similar to construction mixtures such as concrete. **After a short time, waste-to-energy ash "cures" and resembles concrete.**

For more information, visit the Waste-to-Energy Research and Technology University Ash Consortium website at www.seas.columbia.edu/earth/wtert/ash/html.

¹ JVL Kiser, The 2004 IWSA Directory of Waste-To-Energy Plants, (June, 2004); see also W.C Ormsby, Federal Highway Administration, "Paving with Municipal Incinerator Residue," in Proceedings of the First International Conference on Municipal Solid Waste Combustor Ash Utilization, at 49 (Oct. 1988); C.N. Musselman, et al., "Utilizing Waste-to-Energy Bottom Ash as an Aggregate Substitute in Asphalt Paving," in Proceedings of the Eighth International Conference on Municipal Solid Waste Combustor Ash Utilization, at 59 (November 1995); C.M. Jones, et al., "Utilization of Ash from Municipal Solid Waste Combustion," Final Report, Phase I, NREL Subcontract N XAR-3-1322 at 13 (1994); F.J. Roethal & V.T. Breslin, "Stony Brook's MSW Combustor Ash Demonstration Programs," in Proceedings of the Third International Conference on Municipal Solid Waste Combustor Ash Utilization, at 237 (November 1990). The 2002 IWSA Directory of Waste-to-Energy Plants, J.V. Kiser (March, 2002).

² U.S. Environmental Protection Agency and the Coalition on Resource Recovery and the Environment, "Characterization of Municipal Combustion Ash, Ash Extracts, and Leachates," (March 1990).

³ Ibid., U.S. EPA (March 1990); C.A. Andrews, "Analysis of Laboratory and Field Leachate Test Data for Ash From Twelve Municipal Solid Waste Combustors," in Municipal Waste Combustion: Conference Papers and Abstracts for the Second Annual International Specialty Conference. (April 1991).