

Environmentally Friendly Landfill Cover Absorbs Toxic Gases

University of Maine-Orono



Decomposing waste materials in landfills release sulfur-bearing gases, which often create foul-smelling air around the landfill and possible health issues for landfill personnel and nearby residents. Landfill operators are required to cover the working face of the landfill on a daily basis, with soil or plastic tarps being the preferred method. Tarps are labor-intensive because they need to be rolled out at the end of the day and removed in the morning. They also do a poor job of containing the troublesome gasses.

To streamline this procedure, as well as reduce gas emissions, Susan MacKay, Ph.D., Karl Bishop, Ph.D., Doug Ruthven, Ph.D., and Michael Bilodeau at the University of Maine-Orono invented a paper-based cover that contains an engineered zeolite (Zeo-BLOC™). This mineral reacts with sulfur-bearing gas to precipitate a non-toxic solid that is trapped in the fibrous web of the cover.

This low-cost, biodegradable alternative to plastic tarps not only effectively covers the working face, but also captures and neutralizes a significant portion of the noxious gases, as well as reducing the unwanted sulfur concentrations in

the biogas that is recovered from the landfill. The paper cover also does not have to be removed—it can remain in the landfill, saving labor and removal costs.

The University of Maine, in partnership with Maine-based Zeomatrix, LLC, has developed a commercial version of this product, which is currently being tested in the field. Commercial production is expected in 2008.

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