

ODOR CONTROL ABATEMENT STUDY No. 3

Spartanburg, SC Landfill Recycling & Disposal Facility
July-August 1995

Waste Management Inc. (WMX, Inc.) operates a landfill and recycling facility in a suburban Spartanburg, South Carolina community. In 1994 they began accepting sludges from a nearby wastewater treatment plant for inclusion into the landfill in a separate cell. It was hoped that because the sludge had been completely processed that it would not produce any excess odors that could not be controlled by landfill daily cover. It became apparent that the amount of sludge that was being accepted from the wastewater treatment plant during the course of the day exceeded the original anticipated volumes and the sludges were reverting back to an anaerobic stage generating hydrogen sulfide gases which were wafting into a nearby neighborhood. The reversion of the sludge to an anaerobic state had a lot to do with the temperature and humidity generic to the region.

In searching for a solution Waste Management submitted several products to the State of South Carolina for state approval for odor control to determine their efficacy and the impact on biota. The State of South Carolina approved the use of KZN-100 at Spartanburg in two areas, first, to be added topically to the trucks bringing the sludge to the landfill to suppress odors emanating from the truck while it drives down highways to the landfill and secondly, to be applied during the course of the day after each truck arrived at the sludge cell and deposited the sludge into the landfill. The reasons KZN-100 was selected are: its superior ability to act as a gas absorber, the stability it gives to sludges because of its desiccation properties (it also replaces flocculants), and its ion exchange capabilities to attack the hydrogen sulfide and completely attenuate these malodors. When the KZN-100 was applied in the actual test it immediately shut down the hydrogen sulfide odors.

KZN-100 is a naturally occurring mineral that has very unique properties of molecular sieving, ion exchange and desiccation. Because of these unique properties it can be used in various application for one or all of its basic properties. In the case of hydrogen sulfide from sludges it uses all three properties which is why it is so effective in controlling odors. Because KZN-100 attenuates hydrogen sulfide and ammonia so effectively it can also be used in certain applications for corrosion control.