

Mini Sacks



Department of Energy

Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

July 21, 2000

Mr. Frank Marcinowski
Office of Radiation and Indoor Air
Environmental Protection Agency
Center for Federal Regulation
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Washington, D. C 20460

Dear Mr. Marcinowski:

This purpose of this letter is to request approval from the Environmental Protection Agency for the elimination of the magnesium oxide (MgO) mini-sacks from the Waste Isolation Pilot Plant (WIPP) repository. We previously briefed your agency regarding this subject on April 13, 2000, in Washington, D. C.

Elimination of the mini-sacks would reduce the total mass of MgO emplaced by about 15%, however a large excess of MgO was included in the quantity specified in the Compliance Certification Application (CCA). Based upon the conservative assumption that all organic carbon in the waste would be converted to carbon dioxide (CO₂) by microbial degradation, the mass of MgO being emplaced was at least 1.95 times more than needed to sequester the entire resulting CO₂ inventory. In fact, it was appreciated at that time, and has been confirmed by experimental results, that methanogenesis, which only converts half of the organic carbon to CO₂, will be the dominant biodegradation pathway in the WIPP and will account for 95% of overall carbon degradation. As a result, the quantity of MgO specified in the CCA is actually 3.7 times more than that required to sequester the entire possible inventory of CO₂. Even with the elimination of the mini-sacks, there will still be a 3.2-fold excess of MgO in the repository.

As discussed in the enclosed paper, the elimination of the mini-sacks will have no impact on the expected performance of the MgO within the repository environment, as described in the compliance certification documentation that EPA used to certify WIPP in May 1998, but will enhance worker safety and afford substantial efficiencies in the WIPP operations.



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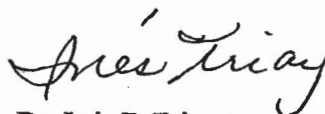
Mr. Frank Marcinowski

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If you have any questions, please contact George Basabilvazo at 505-234-7488 or Daryl Mercer at 505-234-7452.

Sincerely,



Dr. Inés R. Triay
Manager

Enclosure

cc w/enclosure:

D. Huizenga, EM-20

M. Kruger, EPA-ORIA

✓ C. Byrum, EPA, Region VI

M. Silva, EEG

cc w/o attachments:

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J. Lee, WID

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