

February 6 1992

NOTE TO: Mike Weber, *NMSS*
FROM: Heather Astwood, *OCM*
SUBJECT: USDA REQUEST FOR 20.302 DISPOSAL

This is in response to your request to review USDA's request for 20.302 disposal of contaminated animal carcasses in the Jornada Experimental Range in Las Cruces, New Mexico.

The limited information provided by the USDA consisted of the total activity in microcuries of the isotopes present, the weight in pounds of the animal carcasses and the dimensions of the burial pit. No hydrogeologic data was provided except the depth to the water table, which was approximately 400 feet.

Since this information was limited, several assumptions were made in order to utilize the RESRAD computer code. The concentration of activity in the waste, in picocuries per gram, was determined by dividing the total activity provided by the total weight of the carcasses. The concentrations of Cs-134 and Mn-54, and the pit dimensions were then used in the RESRAD code. The concentrations of Zn-65 and I-125 were not capable of being used in the RESRAD code because of their short half lives. All other values needed to run the code were default values.

The resulting doses for both Cs-134 and MN-54 summed over all pathways for time=0 were less than $5.0e-7$ mrem/yr and decreased with time to near zero within 10 years.

Additional information is needed for a more site specific RESRAD run to be completed, however from the data provided it would appear there are small doses associated with the burial of this waste. In addition, the time period since contamination of the carcasses to the present has already decreased the activity of some of the isotopes significantly, thus decreasing the risk even farther.

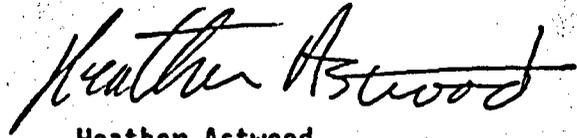
An additional conservative RESRAD run was made using the original activities of Cs and Mn assuming no loss during the experiment. These activities were then divided by only half the volume of waste reported to produce an over estimate of the concentrations. The cover was also reduced to .5 meters from the reported 1.8 meters and the distance to the water table was decreased from 121 meters to 4 meters. Even with these conservative estimates of source term and burial setting, the doses were still less than 4.0 mrem/yr. Therefore, I feel there is no need for addition site characterization to determine if this burial should be approved. The time since burial and the low doses seem to pose little risk.

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Enclosed are copies of two RESRAD printouts showing the doses associated with Cs-134 and Mn-54, summed over all pathways, for both the original and the conservative run.

Please call if you have any additional questions.

A handwritten signature in cursive script that reads "Heather Astwood". The signature is written in black ink and is positioned above the printed name.

Heather Astwood

Enclosures: As stated