



Department of Energy

Field Office, Albuquerque  
Los Alamos Area Office  
Los Alamos, New Mexico 87544

*[Faint stamps and handwritten notes]*

*Barbara  
Slaten*

NOV 17 1993

Barbara Driscoll  
RCRA Permits Branch  
Hazardous Waste Management Division  
U.S. Environmental Protection Agency, Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Dear Ms. Driscoll:

Enclosed is the response by Los Alamos National Laboratory to the comments by Mr. Jon Rauscher of the U.S. Environmental Protection Agency staff on the Technical Assumptions for Data Collection and Evaluation. I appreciate Mr. Rauscher's taking the time to comment on this important component of the Environmental Restoration Program. Should any of the comments remain unresolved, I would be pleased to arrange a conference call to discuss them.

If you have questions, please call Steve Slaten at 505-665-5050 or me at 505-665-7203.

Sincerely,

*[Handwritten signature: T. J. Taylor]*

Theodore J. Taylor  
Program Manager  
Environmental Restoration Program

Enclosure

cc w/ enclosure:

- K. Sisneros, New Mexico Environment Department
- S. Slaten, ESH, LAAO
- C. Fesmire, ESH, LAAO
- T. Taylor, ESH, LAAO
- K. Bitner, ERPO, AL, MS-A906
- RFP, MS M772

cc w/o enclosure:

- R. Harris, EM-452, HQ
- J. Shipley, EE-AETO, UC-LANL, MS-F643
- R. Vocke, EM-13, UC-LANL, MS-M992

HSWA LANL G/M/6/93

*TR*



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## Response to Comments on Technical Assumptions for Data Collection and Evaluation for Los Alamos and Sandia National Laboratories.

### General Comment:

Thank you for providing the information on central tendency and reasonable maximum exposure parameters.

### Specific Comment #1:

EPA (1989b, p. 6-28) gives a representative value of 1/8 acres (~500m<sup>2</sup>) for a residential backyard. We have chosen this value as representative of exposure units for residential and long-term worker settings. For recreational settings we have assumed a value representing continued use of an area of about 1/2 acre (~2000m<sup>2</sup>).

### Specific Comment #2:

Although gamma (photon) ionizing radiation is highly penetrating, matter (including construction material and human tissue) does retard the kinetic energy of such radiation. This retardation will reduce the likelihood of a receptor organ receiving a gamma exposure if it is shielded by such materials. The National Council on Radiation Protection and Measurement (NCRP Report #76, 1984, p. 218) estimates that structural shielding can reduce the gamma exposure by a factor of 5% to 90% of the unshielded exposure. We have chosen to use 70% as most representative of the shielding afforded by structures in Northern New Mexico.

### Specific Comment #3:

We have chosen to use measured values of dust loading in Los Alamos county for inhalation exposure parameters under conditions of non-construction activities.

### Specific Comment #4:

We agree that an onsite worker would likely consume 1 L/d of water and will change that in our exposure parameters.

### Specific Comments #5&6:

In general, we believe that on site workers will not directly contact water (except for ingestion) while on the job. Surface water is rare in Los Alamos County, and few workers routinely encounter it. Workers who routinely shower on the job would be dermally exposed to ground water. However, these workers are not common, and, should we encounter conditions where such an exposure is a reasonable potential, we shall evaluate it.

These default parameters do not preclude us from using other, situation specific values when warranted.

<b>FAX TRANSMITTAL</b>		# of pages ► 1
To <i>Lee Winn</i>	From <i>Jon RAUSCHER</i>	
Dept./Agency	Phone #	
Fax # <i>505-827-4361</i>	Fax #	

MEMORANDUM

SUBJECT: Comments on the Technical Assumptions for Data Collection and Evaluation for the Los Alamos & Sandia National Labs

FROM: Jon Rauscher

TO: Barbara Driscoll

The memorandum provides comments on the Technical Assumptions for Data Collection and Evaluation for the Environmental Restoration Program for the Los Alamos and Sandia National Laboratories.

General comment:

EPA risk assessments are required to consider a central tendency (or average) exposure and a "high end" exposure (Habicht, 1992). The Reasonable Maximum Exposure (RME) is considered to be a "high end" exposure (Longest and Diamond, 1992). The long-term worker and residential exposure scenarios have exposure information that would allow for the development of a central tendency exposure and RME scenarios (Rauscher, 1992).

Specific comments:

Table 1, General Exposure Parameters, Area of Exposure Unit (Aeu): More explanation is requested on the basis of the values selected for the Exposure Unit Areas.

Table 1, General Exposure Parameters, Indoor Shielding Factor for Gamma (SF): More explanation is requested concerning the Indoor Shielding Factor for Gamma of 70%. Gamma radiation does have a high penetration ability.

Table 1, Inhalation Pathway, Particulate Concentration in Air: The particulate concentrations proposed in the document are extremely high concentrations. For example, the National Ambient Air Quality Standard for particulate matter is 1.5 µg/cu. m. The particulate concentrations proposed are likely to be overestimate the expected exposure concentration of particulates.

Table 1, Ingestion Rates: The long-term and construction worker scenarios do not have a consumptive use of ground water. The EPA Standard Default Exposure Parameters (US EPA, 1991) allows for a consumptive use of 1 liter per day (1 liter out of 2 liter normally used) for an individual's water consumption at work.

Table 1, Soil Dermal Contact Pathway: The long-term worker has no dermal contact with soil. What is the basis for the long-term worker not having any dermal contact with soil?

Table 1, Groundwater Dermal Contact Pathway: The long-term worker has no dermal contact with groundwater. What is the basis for the long-term worker not having any dermal contact with groundwater?

Comments on the Technical Assumptions for Data Collection and Evaluation for the Los Alamos and Sandia National Laboratories

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