

2492

5.23  
1944  
LA-4875

# Plutonium in Autopsy Tissue



**los alamos**  
**scientific laboratory**  
of the University of California  
LOS ALAMOS, NEW MEXICO 87544



**MASTER**

UNITED STATES  
ATOMIC ENERGY COMMISSION  
CONTRACT W-7405-ENG. 36

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Atomic Energy Commission, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Printed in the United States of America. Available from  
National Technical Information Service  
U. S. Department of Commerce  
5285 Port Royal Road  
Springfield, Virginia 22151  
Price: Printed Copy \$3.00; Microfiche \$0.95

LA-4875

UC-48

ISSUED: January 1973



## Plutonium in Autopsy Tissue

by

Evan E. Campbell  
Morris F. Milligan  
William D. Moss  
Harry F. Schulte  
James F. McInroy

Work partially supported by the US AEC Division of Biology and Medicine.

### NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Atomic Energy Commission, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

**MASTER**

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

*fly*

# PLUTONIUM IN AUTOPSY TISSUE

by

Evan E. Campbell, Morris F. Milligan,  
William D. Moss, Harry F. Schulte, and James F. McInroy

## ABSTRACT

Since 1959, selected tissues from deceased humans have been examined for the presence of plutonium. The original purpose was to correlate plutonium body burden calculated from urine assay and actual burden determined by analysis of autopsy materials. The tissues have provided data on plutonium deposition in man resulting from general distribution of plutonium in the environment through global fallout and that resulting from plutonium fabrication or research and development operations.

Lung, liver, kidney, lymph, and skeletal tissue are the principal materials examined. The analytical data, the significance of the findings, and the considerable uncertainties in the radiochemical analysis and calculations are discussed. The data will be completely evaluated in other Los Alamos Scientific Laboratory reports.

The results are contained in the appendixes to this report. Median concentrations in the organs and tissues of a general population (not occupationally exposed) were (each number represents *dis/min Pu per kg*): liver, 1.4; lung, 0.8; lymph nodes, 3.0; bone, 0.6; and kidney, 0.6. Plutonium concentration is generally higher in the tissues of those who have been occupationally exposed to plutonium; the concentration obviously depends upon the nature of the exposure and its severity and duration.

---

## I. INTRODUCTION

Since 1959, the Los Alamos Scientific Laboratory Industrial Hygiene Group has collected necropsy material for analysis. The analysis consists of plutonium measurement by variations of the methods routinely used in the bioassay program to determine plutonium in the urine of employees potentially exposed to plutonium.

The original intent of our tissue-analysis effort was to seek confirmation or denial of the validity of estimates of plutonium body burdens by urinalysis. In at least one notable case,<sup>1</sup> confirmation of estimates of body burden made during life was obtained by analysis of tissues from the deceased. The ubiquity of plutonium in the environment has since led us to examine autopsy material from

the general population, to learn whether plutonium exists in detectable amounts in the tissues of individuals from that population.

Harley<sup>2</sup> has estimated that the testing of nuclear weapons distributed ~300 kCi of <sup>238</sup>Pu over the surface of the earth before the beginning of the moratorium. Tests by France and China have added about 5%. More recently, <sup>238</sup>Pu became detectable in the environment because of the burnup of a SNAP generator. It is therefore expected that plutonium can be detected in the tissue of nonoccupationally exposed humans. Tissue data are limited because of the various tissue-analysis problems that will be discussed.

Magno<sup>3</sup> reported an average of 0.14 to 1.1 pCi of <sup>239</sup>Pu/kg wet weight in the lungs, with the bone

concentrations ranging from 0.04 to 0.12 pCi/kg. Tarasov et al.<sup>4</sup> tried to correlate the measured air concentration in each year with the lung concentration of humans over the age of 50 who did not suffer from any pulmonary pathology. Their data suggest that pulmonary deposition is consistent with air concentration. They gave:

0.15 ± 0.1 pCi of <sup>239</sup>Pu/kg in the lung for 1965, and

0.11 ± 0.2 pCi of <sup>239</sup>Pu/kg in the lung for 1966.

The concentrations in the tracheobronchial lymph nodes for the same period were 6.85 ± 8.5 and 9.6 ± 7.6 pCi/kg, respectively. Takizawa<sup>5</sup> analyzed two to five cases per year from the Niigata District in Japan from 1960 to 1967; his analyses showed that the lung contained 0.012 to 0.038 pCi/kg. Takizawa stated that he found 2.36 pCi <sup>239</sup>Pu/kg in the genital organs of a 70-yr-old woman and 6.3 pCi/kg in her bone. Krey et al.<sup>6</sup> reported the following results for a group of cases.

#### PLUTONIUM CONCENTRATION

	<u>(dis/min)/kg</u>
Lung	1.74 ± 0.17
Lymph Node	11 ± 4
Kidney	0.99 ± 0.22
Gonad	7.9 ± 1.9

They concluded that the lung and lymph-node deposition confirmed values that might be calculated from airborne contamination.

Because of the variable values reported above, the AEC provided a number of samples from metropolitan New York City so that we might confirm or deny the plutonium concentrations previously reported.

## II. TISSUE SAMPLES

### A. Sample Selection

The local pathologist provides samples from as many autopsies as possible. No attempt is made to exclude any case. Therefore, we receive a number of samples from outside the geographical area as a result of traumatic accidents occurring within the jurisdiction of the pathologist. Most of the samples, however, are from residents of Los Alamos, New Mexico. This is a single-industry town, with a population of approximately 14,000, containing a research laboratory. The industry includes a plutonium-research development laboratory. Studies of the plutonium in the environs of this laboratory have been documented.<sup>7-9</sup>

A special series of samples were collected in New York City through the cooperation of Dr. John Harley of the New York Operations Office of the AEC. These samples were from males and were received by the medical examiner's office. Generally only small weights of each organ were made available, but the gonads were included. The limited mass available for these analyses permitted detection of ~0.03 dis/min of plutonium in the aliquot, or a lower limit of 1.5 (dis/min)/kg if a 20-g sample was used.

Since June 1970, this program has been expanded to include a number of other areas, using a similar selection of cases.

### B. Sample Storage

The pathologist selects the tissues and packages each separately in a plastic bag. These tissues are held in a freezer until released by the pathologist for chemical processing. A small section of the lung, liver, kidney, and lymph node is preserved for analysis for other metals.

### C. Autopsy Samples

**Lung.** Both lungs are normally received and treated without special preparation. Small amounts of tissue other than lung normally accompany the sample. No attempt is made to separate the lower bronchial lymph nodes or other lymphatic tissue from the lung tissue itself. The weight recorded is the weight actually received at the time of preparation and represents both lungs. The amount of plutonium in the lung includes that in the pulmonary lymph tissue.

**Liver.** The whole organ is normally received and prepared for chemical analysis.

**Kidney.** At least one kidney has been used in each case. Every attempt is made to obtain both kidneys for analysis.

**Gonads.** The gonads were included in samples received from New York City and Denver, Colorado.

**Lymph Nodes** The lymphatic tissue of the tracheobronchial region is received for analysis. Usually it includes only the lymph nodes of that region and is only a small part of the total lymph-node mass. In a few cases, adnexal tissue is included.

**Bone.** Unless otherwise designated, all bone samples are wedges from the 4th and 5th lumbar vertebrae. The bone weights include only a small amount of adnexal tissue. If other types of bones are available, they are analyzed separately.

### III. ANALYTICAL PROCEDURE

#### A. Method

1. Each tissue is placed in an appropriate vessel for dry ashing. The liver and lung are placed in porcelain evaporating dishes, and the other tissues are placed in Pyrex beakers of appropriate size. Since June of 1971, all tissues have been air dried at 100 to 150°C to remove excess water.

2. The samples are placed on shelves in a muffle furnace to prevent direct heating of the vessel. The temperature-programmed muffle furnace is operated from 200 to 500°C, reaching maximum temperature in 24 h. The samples are held an additional 24 h at 500°C partly to whiten them.

3. After the samples cool in the furnace, the liver and lung residues are transferred to 800-cm<sup>3</sup> beakers. The vessels are thoroughly washed with 2N nitric acid, and the washing, combined with the residue, is evaporated to dryness.

4. Each residue is heated repeatedly with nitric and hydrofluoric acid until it remains white. From 1968 to 1971, we used hydrogen peroxide in conjunction with nitric acid to speed the ashing process, but because of concentrated hydrogen peroxide's high metal content, we no longer use it. Excess HF is removed by repeated evaporation with nitric acid.

5. Each residue is finally dissolved in 2N nitric acid and transferred to a volumetric flask. Except for the lung and bone samples, the procedure brings about complete dissolution of the residue. The following volumetric flasks are normally used for each sample.

Liver	1000-cm <sup>3</sup>	Lymph Nodes	50-cm <sup>3</sup>
Lung	1000-cm <sup>3</sup>	Bone	250-cm <sup>3</sup>
Kidney	100-cm <sup>3</sup>	Gonads	50-cm <sup>3</sup>

6. Each sample is mixed well and stored pending analysis of groups of samples.

7. At the time of analysis, aliquots are taken from each sample as indicated in Table I. Each aliquot is "spiked" with <sup>236</sup>Pu at a level of 2 dis/min and evaporated to dryness, treated with concentrated nitric acid several times, and allowed to evaporate almost to dryness. The salts of the lung and liver are dissolved in 200 cm<sup>3</sup> of 8N nitric acid, sodium nitrite is added, and the mixture is allowed to stand overnight before anion-exchange separation.

TABLE I

#### FRACTIONS ANALYZED

Tissue	Through 1969		Since 1970 & Repeats	
	Aliquot (cm <sup>3</sup> )	% of Total	Aliquot (cm <sup>3</sup> )	% of Total
Lung	50	5	500	50
Liver	50	5	500	50
Kidney	10	10	50	50
Lymph Node	10	20	10	20
Bone	10	4	50	20

Normally, all the salts except the lung and bone are in solution. These latter two suspensions are shaken before aliquoting as listed above. Most of the tissue salts are in solution after evaporation and redissolution in 8N HNO<sup>3</sup>. All the salts are treated with hydrofluoric acid, and the excess HF is removed by repeated nitric acid evaporation and treatment with boric acid.

8. Each aliquot is subjected to anion exchange on a Bio-Rad AG 1 x 2 anion-exchange resin, using a modification of the procedure of Campbell and Moss.<sup>10</sup> The 6-mm by 10-cm columns are eluted with dilute hydrochloric acid, and the eluate is evaporated to dryness and prepared for electrodeposition using an acid oxalate electrolyte. The plutonium is electroplated on 1/2-in.-diam stainless steel plates and counted by alpha spectrometry, using a 300-mm<sup>2</sup> silicon-surface barrier detector. The column effluents that do not contain plutonium are saved for possible future use. Each sample is counted for 1000 min with a counter efficiency of 30% and a counter background of 0.004 ± 0.003 counts/min. The <sup>239</sup>Pu reagent blank is 0.007 ± 0.004 counts/min, including the <sup>236</sup>Pu internal standard.

Until 1967, we analyzed all samples by Schwendiman and Healy's<sup>11</sup> method, using nuclear-track alpha counting, preceded by electrodeposition as stated above. We have reanalyzed many samples from that time which contained analytically significant amounts, using <sup>236</sup>Pu tracer added when the aliquot is taken. Schwendiman and Healy's method cannot be used in the presence of added <sup>236</sup>Pu tracer. We have also reanalyzed a number of samples of analytical significance using larger aliquots to demonstrate that the plutonium recovery was essentially complete.

## B. Replicate Analyses

Our former procedure was to select 50-cm<sup>3</sup> aliquots of a 1000-cm<sup>3</sup> solution of lung or liver tissue for analysis. This is 1/20th of the total weight, or ~50 g of the lung or ~60 g of liver, a quantity satisfactory for a surveillance of occupational-exposure cases. We reanalyzed 15 lung and liver tissue solutions containing measurable amounts of plutonium, using a 500-cm<sup>3</sup> aliquot.

Measurements from analysis of large (500-cm<sup>3</sup>) and small (50-cm<sup>3</sup>) aliquots indicate that use of the large aliquot reduces the standard deviation of the individual analysis significantly, but also show no statistically significant difference in results obtained from analyzing large or small aliquots of the same solution. Replicate analyses of various tissue-ash solutions analyzed at the same time by the same method indicate good agreement among aliquots. Table II indicates the typical degree of replication.

## C. Effect of Salts on Plutonium Recovery

Because our chosen procedure involves an isolation technique (ion exchange) without a preconcentration step, we investigated the effects of normally occurring salts in tissue-sample solutions. We used a solution of bone and lung from a case known to have a detectable plutonium burden for analysis. Each aliquot was evaporated to dryness and made to the same volume for ion-exchange separation. The mass of salt in each solution was determined by weighing an evaporated aliquot. The results are shown in Table III.

Because these results suggest that analysis of unnecessarily large aliquots can lead to low recoveries, we use no

TABLE II

### TYPICAL REPLICATION OF VALUES (dis/min per aliquot)

Solution	1	2	3	Mean
A	0.38	0.62	0.36	0.45
B	0.01	0.06	0.02	0.01
C	0.33	0.39	0.53	0.42
D	1.1	1.0	1.2	1.2
E	0.07	0.03	0.11	0.07
F	5.9	7.8	5.3	6.3
G	28	25		26.5
H	38	35	40	38
I	3.5	3.7		3.6
J	0.11	0.10		

TABLE III

### EFFECT OF SALTS ON PLUTONIUM RECOVERY

Tissue Solution Analyzed (cm <sup>3</sup> )	Bone		Lung	
	Measured Activity (dis/min/cm <sup>3</sup> )	Mass of Solids (g)	Measured Activity (dis/min/cm <sup>3</sup> )	Mass of Solids (g)
1	0.39	0.058	5.31	0.014
2	0.39	0.117	4.16	0.027
3	0.34	0.175	4.25	0.041
5	0.37	0.292	3.75	0.068
10	0.32	0.584	3.32	0.137
15	0.25	0.876	3.42	0.206
25	0.23	1.46	3.78	0.342
50	0.15	2.92	3.34	0.685

more than 50 cm<sup>3</sup> in aliquoting highly concentrated solutions. Each aliquot is evaporated to dryness, treated with nitric acid, and made to 500 cm<sup>3</sup> with 8N nitric acid for ion-exchange isolation\* to reduce the salt concentration. By increasing the total volume of the tissue-salt solution and increasing the column size to 6 mm by 10 cm, we have minimized the effects of high ionic strength noted above.

## D. Recovery of Plutonium During Analysis

The use of <sup>236</sup>Pu to evaluate the radiochemical separation does not represent an attempt to determine total yield of the overall procedure; accordingly, the tracer is added at the time of aliquotting, not at the time of ashing. The library of tissue solutions is still available for analysis for other nuclides. Examples of tracer recovery are given in Table IV.

TABLE IV

### RECOVERY OF <sup>236</sup>Pu FROM TISSUE SOLUTIONS

Tissue	Bone	Liver	Lung	Gonad
No. of Samples	9	9	9	9
Mean Recovery (%)	80.1	74.1	74.1	85.7
Standard Deviation	13.4	18.9	12.3	26.7

The analytical losses after the tissue is ashed are low, and may be estimated from the percentages of recovery given above.

#### E. Overall Recovery

We spiked beef tissues of the same weight as human organs with  $^{239}\text{Pu}$  and used the outlined procedure to ash and analyze the tissue for plutonium. The overall recovery was  $87 \pm 8\%$ .

#### F. Observed Losses

Because some insoluble material normally defies dissolution in  $2N$  nitric acid, we conducted additional studies. The salts, probably silicates and phosphates, cannot be brought into complete solution at this stage. We used solutions of tissue salts from individuals known to have been occupationally exposed to plutonium in the following study. We examined paired aliquots of the solution and of the insoluble residue in the following manner.

The suspension (in  $2N$  nitric acid) was well mixed during aliquoting to produce as homogeneous a mixture as possible. Small aliquots of the suspension were taken and centrifuged. The insoluble portion and the centrifugate were separated and spiked with  $^{236}\text{Pu}$  as an internal tracer. Each portion was evaporated to dryness, treated repeatedly with hydrofluoric acid and nitric acid, and finally evaporated repeatedly with nitric acid to remove the excess HF. Any fluoride surviving the evaporation was complexed as the fluoborate, after which the solutions were carried through the ion-exchange procedure and the separated plutonium was counted by alpha spectrometry. The results indicate that the loss by incomplete dissolution of the plutonium from the salts in the procedure *without* repeated HF treatment may be as much as 20%.

### IV. RESULTS

All of the results obtained under this program are reported in the appendixes:

Appendix A - Tables of Individual Cases

Appendix B - Cumulative Frequency Distributions

Appendix C - Summary Tables

The tables of individual cases contain the most detailed, properly available information about each case examined. Included are case numbers, assigned by this laboratory and unrelated to any numbers assigned by pathologists or hospitals, occupation at time of death, age, sex, city of residence, and cause of death as described by the pathologist. The cause of death is also described by the HEW Code Number.<sup>1,2</sup> Laboratory data included are: weight of organ (or tissue) as received; total volume

of ash solution; aliquot of ash solution analyzed; disintegrations per minute of plutonium in the aliquot, of plutonium in the total sample, and of plutonium per gram of sample (concentration); and disintegrations per minute per standard organ, calculated for convenience, weights of standard organs having been defined by ICRP Publication 2.<sup>1,3</sup>

The cumulative frequency distributions (Appendix B) are presented for convenience in viewing the results on a population basis rather than the individual basis used in Appendix A.

The summary tables (Appendix C) are the least detailed, and briefly present the median values (50th percentile) derived from Appendix B.

### V. EVALUATION OF RESULTS

The plutonium concentrations in the analyzed tissues cannot be compared directly because the portions of the organs analyzed were never identical. To put the data on a common basis, therefore, we converted the results per aliquot to disintegrations per minute per kilogram and disintegrations per minute per standard organ weight. We used these data to estimate the concentration of plutonium in human tissues per unit of weight for each of the population groups listed in Appendix A.

Because of incomplete knowledge of sample selection, incomplete tissue collection, and uncertainties in the assay, we have not tried to evaluate statistical differences among groups of data, but have chosen to leave the testing to another study involving additional data with better controls.

Histograms of the frequency distribution of the data for each type of tissue from Appendix A were found to be skewed to the right. We therefore assumed that the data are distributed log-normally, and demonstrated the validity of that assumption by plotting the cumulative frequency of the number of samples against the plutonium concentration on logarithmic normal-probability graph paper. The data thus plotted gave acceptable straight-line fits, and these graphs are presented in Appendix B.

Every data point obtained experimentally is included in Appendix B. It is obvious that excluding all those results that were below our detection limit would increase the median unrealistically; therefore, results that were, in fact, below our detection limit are assigned an artificial value of 0.03 (dis/min)/kg simply to aid in the presentation of the data.

This assignment makes the plots flatten at the lower section, consistent with limitations of measurement sensitivity. Similar deviation from the straight-line fit at the upper end is associated with a selection against an upper



limit of sample specification. From the logarithmic-probability plots, we estimated the median, or 50th percentile, data points for each distribution expressed as disintegrations per minute per kilogram. The estimates are shown in Table C-I (Appendix C). The median values for each tissue type and population group suggest that there are no significant differences among the population groups except for the high-potential-exposure group.

Other aspects of the plutonium concentration in human tissue may be obtained from the log-normal probability graphs. We combined the data from Tables A-I through A-III and A-VII into a single unexposed population group and plotted the data for each tissue on log-normal probability graphs. These graphs provided estimates of the median, the 95th percentile, and the 5th percentile. These points include 90% of the results. These data are shown in Table C-II, along with similarly derived estimates of the occupationally exposed groups.

#### ACKNOWLEDGMENTS

We acknowledge the assistance of the entire staff of the Laboratory Section of Group H-5 and all members of the Health Division who have helped collect supportive information, especially B. C. Eutsler, H. M. Ide, I. K. Kressin, and Jean McClelland. We are grateful to the late Thomas L. Shipman, M. D., Health Division Leader, for his encouragement in this program. The program continues under the direction of George L. Voelz, M. D., with the assistance of the Division of Biomedical and Environmental Research of the Atomic Energy Commission and is a cooperative effort among Battelle Northwest Laboratories, LASL, and the U. S. "Transuranium Registry." We thank various Divisions within the Laboratory, in particular P Division, for their assistance and preparation of electronic equipment used to determine plutonium. Many people have assisted in the preparation and analysis of samples; these include Rita Bieri, Romualda Madrid, Romayne Owens, Sherry Stephens, Patricia Isham, and Eudena Boyles. Doctors C. C. Lushbaugh and Michael W. Stewart performed the autopsies and selected many of the samples.

#### REFERENCES

1. T. L. Shipman et al., "Acute Radiation Death Resulting from An Accidental Nuclear Critical Excursion," J. Occ. Med. 3, 146-192 (1961), Special Supplement.
2. J. H. Harley, "Worldwide Fallout from Weapons Tests," pp. 4-5 in "Proceedings of Environmental Plutonium Symposium," Los Alamos Scientific Laboratory report LA-4756 (1971).
3. P. J. Magno, P. E. Kauffman, and B. Shleien, "Plutonium in Environmental and Biological Media," Health Phys. 13, 1325-30 (1967).
4. S. I. Tarasov et al., "The Extent of Aerogenic Introduction of  $^{239}\text{Pu}$  Into The Human Body," Gig. Sanit., 4, 34-38 (1968).
5. Y. Takizawa, "Japanese Hygienist Points Out Increase in Plutonium in Human Body," Japan Society of Public Hygiene, Nagoya, Japan (October 28, 1970).
6. P. W. Krey, D. Bogen, and E. French, "Plutonium in Man and His Environment," Nature 195, 263-265 (1962).
7. H. S. Jordan and R. E. Black, "Evaluation of the Air Pollution Problem Resulting from Discharge of a Radioactive Effluent," J. Amer. Indust. Hyg. Assoc. 19, 20 (1958).
8. W. R. Kennedy and W. D. Purtymun, "Plutonium and Strontium in Soil in the Los Alamos, Espanola, and Santa Fe, New Mexico, Areas," Los Alamos Scientific Laboratory report LA-4562 (1971).
9. W. R. Kennedy and W. D. Purtymun, "Plutonium and Strontium in Soil Near Technical Area 21, Los Alamos Scientific Laboratory, Los Alamos, New Mexico," Los Alamos Scientific Laboratory report LA-4563 (1971).
10. E. E. Campbell and W. D. Moss, "Determination of Plutonium in Urine by Anion Exchange," Health Phys. 11, 737-742 (1965).
11. L. C. Schwendiman and J. W. Healy, "Nuclear-Track Technique for Low-Level Pu in Urine, Nucleonics 16, 78 (1958).
12. "International Classification of Diseases," U. S. Department of Health, Education, and Welfare, 1 and 2, No. 719 (Dec. 1962).
13. "Report of Committee II on Permissible Dose for Internal Radiation," ICRP Publication 2 (Pergamon Press, New York, 1959).
14. E. E. Campbell, W. D. Moss, L. Johnson, M. F. Milligan, Jean McClelland, and James F. McInroy, "Plutonium Concentration in Tissue of Occupationally Exposed Workers," Los Alamos Scientific Laboratory report in preparation.

## APPENDIX A

### TABLES OF INDIVIDUAL CASES

The data tabulations are divided into convenient population categories based on residential area and occupational exposure.

TABLE A-I. Los Alamos residents with no occupational exposure to plutonium.

TABLE A-II. Nonresidents of Los Alamos with no known occupational exposure to plutonium.

TABLE A-III. Colorado cases analyzed for plutonium.

Former employees of the Los Alamos Scientific Laboratory were grouped according to their potential exposure to plutonium. If the work area or job assignment was directly related to plutonium handling, or known potential exposure of short duration, the case was considered as having a high potential exposure and placed in Table A-V or A-VI. Because of the nature of the Laboratory's work, all other former employees have a potential for exposure to plutonium; these cases are listed in Table A-IV.

TABLE A-IV. LASL employees known to have a potential exposure to plutonium.

TABLE A-V. LASL employees known to have a high plutonium-exposure potential.

TABLE A-VI. Special cases. Cases discussed in other reports<sup>1</sup> and for which other than the standard set of tissues were analyzed for plutonium.

TABLE A-VII. New York City cases analyzed for plutonium. (These cases are listed separately because of the differences in weight of organs received and because the gonads were always included.)

The minimum reporting level (MRL) is based on the total counts, background, and recovery statistics. The MRL is 0.03 dis/min of plutonium found in the aliquot analyzed.

Uranium, mercury, and other elements have been determined and will be reported elsewhere. Tissues received during the past three years have been examined by gamma spectroscopy to determine <sup>40</sup>K, <sup>137</sup>Cs, and other radionuclides used therapeutically. Americium 241 and <sup>238</sup>Pu will be reported separately. A complete review of the occupationally exposed cases reported here has been published.<sup>14</sup>

TABLE A-1 RESIDENTS OF LOS ALAMOS, NO OCCUPATIONAL EXPOSURE TO PLUTONIUM

\*MRL = MINIMUM REPORTING LEVEL = 0.03 DPM PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS/RNG AND RECOVERY STATISTICS

			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	1- 60	SEX M	LIVER	1213.0	250	100	1.251	3.12	2.58	4.38
OCCUPATION	UNEMPLOYED	AGE 80	LUNG	890.0	1000	50	0.000	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS 15	LYMPH	6.6	100	10	.150	1.50	227.27	2.27
STATE	NEW MEXICO		KIDNEY	100.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PNEUMONIA	YEAR 1959	RIB	138.0	250	100	.022	<MRL*	<MRL*	
NEW CODE NO.	491.8	KG NA	VERTEBRAE	172.0	200	100	.094	.19	1.09	7.65
			SPLEEN	125.0	250	100	.708	1.77	14.16	2.12
CASE NO.	1- 84	SEX M	LIVER	615.0	500	50	.040	.40	.65	1.11
OCCUPATION	STUDENT	AGE 16	LYMPH	4.5	25	10	.010	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS 16	KIDNEY	326.0	100	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO		SPLEEN	234.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	GUNSHOT IN HEAD	YEAR 1960								
NEW CODE NO.	E979.0	KG NA								
CASE NO.	1- 70	SEX M	LIVER	701.0	500	50	.060	.60	.86	1.46
OCCUPATION	CHILD	AGE 07	LUNG	210.0	500	50	.020	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS 07	LYMPH	5.0	25	10	.020	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	135.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	ENCEPHALITIS	YEAR 1960								
NEW CODE NO.	343.0	KG NA								
CASE NO.	1- 76	SEX F	LIVER	330.0	500	50	.200	2.00	6.06	10.30
OCCUPATION	CHILD	AGE 11	LUNG	700.0	500	50	.490	4.90	7.00	7.00
RESIDENT	LOS ALAMOS	YEARS 11	LYMPH	30.0	25	10	.050	.13	4.17	.04
STATE	NEW MEXICO		KIDNEY	95.0	100	10	.040	.40	4.21	1.26
CAUSE OF DEATH	ACUTE MENINGITIS	YEAR 1960								
NEW CODE NO.	340.9	KG NA								
CASE NO.	1- 88	SEX M	LIVER	776.0	500	50	.100	1.00	1.29	2.19
OCCUPATION	CHILD	AGE 08	LUNG	307.0	250	50	.470	2.35	7.65	7.65
RESIDENT	LOS ALAMOS	YEARS 08	LYMPH	1.8	25	10	.040	.10	100.00	1.00
STATE	NEW MEXICO		KIDNEY	124.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	BRAIN TUMOR	YEAR 1960								
NEW CODE NO.	193.3	KG NA								
CASE NO.	1- 90	SEX M	LIVER	2520.0	1000	50	.040	.80	.32	.54
OCCUPATION	RETIRED	AGE 80	LUNG	1010.0	1000	500	.332	.66	.66	.66
RESIDENT	LOS ALAMOS	YEARS NA	LYMPH	10.0	50	10	.020	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	270.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	LEUKEMIA	YEAR 1960								
NEW CODE NO.	204.0	KG NA								
CASE NO.	1- 96	SEX F	LIVER	906.0	1000	50	.030	.60	.66	1.13
OCCUPATION	HOUSEWIFE	AGE 59	LUNG	576.0	1000	500	.203	.41	.70	.70
RESIDENT	LOS ALAMOS	YEARS 05	LYMPH	7.0	50	10	.020	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	180.0	100	10	.030	.30	1.67	.50
CAUSE OF DEATH	CANCER	YEAR 1960								
NEW CODE NO.	199.0	KG NA								
CASE NO.	1-100	SEX M	LIVER	2409.0	1000	50	.120	2.40	1.00	1.69
OCCUPATION	RESIDENT	AGE 56	LUNG	1292.0	1000	50	.360	7.20	5.57	5.57
RESIDENT	LOS ALAMOS	YEARS 02	LYMPH	23.0	50	10	.070	.35	15.22	.15
STATE	NEW MEXICO		KIDNEY	202.0	100	10	.050	.50	2.48	.74
CAUSE OF DEATH	CORONARY DCC	YEAR 1960								
NEW CODE NO.	420.1	KG NA								
CASE NO.	1-102	SEX F	LIVER	1400.0	1000	50	.060	1.20	.86	1.46
OCCUPATION	HOUSEWIFE	AGE 55	LUNG	680.0	1000	50	.130	2.60	3.82	3.82
RESIDENT	LOS ALAMOS	YEARS 05	LYMPH	35.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	255.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	RHEUMATIC HEART	YEAR 1960								
NEW CODE NO.	416.0	KG NA								
CASE NO.	1-106	SEX M	LIVER	1141.0	1000	50	.060	1.20	1.05	1.79
OCCUPATION	RESIDENT	AGE 61	LUNG	1380.0	1000	50	.050	1.00	.72	.72
RESIDENT	LOS ALAMOS	YEARS 08	LYMPH	26.0	50	10	.030	.15	5.77	.06
STATE	NEW MEXICO		KIDNEY	239.0	100	10	.040	.40	1.67	.50
CAUSE OF DEATH	EMPHYSEMA	YEAR 1960								
NEW CODE NO.	527.1	KG NA								
CASE NO.	1-116	SEX M	LUNG	759.0	1000	50	.180	3.00	3.95	3.95
OCCUPATION	RESIDENT	AGE 47	LYMPH	16.0	50	10	.030	.15	9.37	.09
RESIDENT	LOS ALAMOS	YEARS 13	KIDNEY	259.0	100	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO									
CAUSE OF DEATH	CORONARY OCC	YEAR 1960								
NEW CODE NO.	420.1	KG NA								
CASE NO.	1-118	SEX M	LIVER	1355.0	1000	50	.050	1.00	.74	1.25
OCCUPATION	RESIDENT	AGE 35	LUNG	617.0	1000	50	0.000	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS 06	LYMPH	16.0	50	10	.010	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	249.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	VAGAL SHOCK	YEAR 1961								
NEW CODE NO.	451.9	KG NA								

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	YEAR	KG	TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
1-134	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	NOSE CANCER	160-0	F	48	01	1961	NA	LIVER	1734-0	1000	80	.030	.60	.35	.59
											LUNG	675-0	1000	50	.010	<MRL*	<MRL*	
											LYMPH	5-0	50	10	0.002	<MRL*	<MRL*	
											KIDNEY	277-0	100	10	.010	<MRL*	<MRL*	
1-138	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	RUPTURED AORTA	451-9	F	76	02	1961	NA	LIVER	1317-0	1000	50	.060	1.20	.91	1.55
											LUNG	611-0	1000	500	.259	.52	.85	.85
											LYMPH	16-0	50	10	.120	.60	37.50	.37
											KIDNEY	203-0	100	10	9.000	<MRL*	<MRL*	
2- 8	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	CANCER	199-0	F	53		1961	NA	LIVER	1192-0	1000	50	.005	<MRL*	<MRL*	
											LUNG	720-0	1000	50	.230	4.60	6.39	6.39
											LYMPH	11-0	50	10	.005	<MRL*	<MRL*	
											KIDNEY	200-0	100	10	.002	<MRL*	<MRL*	
2- 10	RETIRED	LOS ALAMOS	NEW MEXICO	ARTERIOSCLEROSIS	450-0	M	80	07	1961	NA	LIVER	957-0	1000	50	.120	2.40	2.51	4.26
											LUNG	345-0	100	10	.113	1.13	3.28	3.28
											LYMPH	7-0	50	10	.210	1.05	150.00	1.50
											KIDNEY	170-0	100	10	.012	<MRL*	<MRL*	
2- 26	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	UNKNOWN	NA	F	62	05	1961	NA	LIVER	1025-0	1000	50	.042	.84	.82	1.39
											LUNG	705-0	1000	50	.008	<MRL*	<MRL*	
											LYMPH	3-0	50	10	0.000	<MRL*	<MRL*	
											KIDNEY	295-0	100	10	0.000	<MRL*	<MRL*	
2- 34	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	PULMON EMBOLISM	465 0	F	71	14	1962	NA	LIVER	1627-0	1000	50	.089	1.78	1.09	1.86
											LUNG	875-0	1000	500	.796	1.59	1.62	1.62
											LYMPH	20-0	50	10	0.000	<MRL*	<MRL*	
2- 36	HOTEL MNGR	LOS ALAMOS	NEW MEXICO	MYOCARDIAL INF	420-1	M	60	08	1962	NA	LIVER	1505-0	1000	250	1.603	6.41	4.26	7.24
											LUNG	490-0	1000	500	.482	.56	1.97	1.97
											LYMPH	13-0	50	10	0.000	<MRL*	<MRL*	
											KIDNEY	275-0	100	10	.004	<MRL*	<MRL*	
2- 60	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	CANCER	199-0	F	46	12	1962	NA	LIVER	2759-0	1000	50	.016	<MRL*	<MRL*	
											LUNG	441-0	500	50	.302	3.02	6.85	6.85
											LYMPH	3-0	50	10	.003	<MRL*	<MRL*	
											KIDNEY	226-0	100	10	.003	<MRL*	<MRL*	
											VERTEBRAE	154-0	250	10	.007	<MRL*	<MRL*	
2- 90	STUDENT	LOS ALAMOS	NEW MEXICO	HEAD INJURIES	853-0	M	16	15	1962	NA	LIVER	1203-0	1000	50	.150	3.00	2.49	4.24
											LUNG	775-0	1000	80	.200	4.00	5.16	5.16
											LYMPH	5-0	50	10	.040	.20	40.00	.40
											KIDNEY	248-0	100	10	.010	<MRL*	<MRL*	
											VERTEBRAE	182-0	250	10	.030	.75	4.12	28.85
2- 92	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	UNKNOWN	NA	F	72	03	1962	NA	LIVER	1333-0	1000	50	.040	.80	.60	1.02
											LUNG	669-0	1000	50	.060	1.20	1.79	1.79
											LYMPH	4-0	50	10	.010	<MRL*	<MRL*	
											KIDNEY	295-0	100	10	.030	.30	1.18	.35
2-102	CLERK	LOS ALAMOS	NEW MEXICO	DRUGS	972-0	F	44	16	1962	NA	LIVER	1615-0	1000	50	.106	2.12	1.31	2.23
											LUNG	1190-0	1000	50	.421	8.42	7.08	7.08
											LYMPH	3-0	50	10	.110	.55	183.33	1.83
											KIDNEY	237-0	100	10	.002	<MRL*	<MRL*	
											VERTEBRAE	267-0	250	10	.224	5.60	20.97	146.82
2-122	CLERK	LOS ALAMOS	NEW MEXICO	CANCER OF BREAST	170-0	F	51	10	1962	NA	LIVER	1200-0	1000	50	0.000	<MRL*	<MRL*	
											LUNG	549-0	1000	50	0.000	<MRL*	<MRL*	
											LYMPH	11-0	50	10	0.000	<MRL*	<MRL*	
											KIDNEY	120-0	100	10	0.000	<MRL*	<MRL*	
											RIB	185-0	200	10	0.000	<MRL*	<MRL*	

			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOB ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	2-124	SEX	F LIVER	1384.0	1000	25	.164	6.56	4.74	8.06
OCCUPATION	MAILMAN	AGE	45 LUNG	940.0	180	25	.177	.71	.75	.75
RESIDENT	LOS ALAMOS	YEARS	17 LYMRH	13.0	50	10	.032	.16	12.31	.12
STATE	NEW MEXICO		KIDNEY	100.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	NEPHRITIS	YEAR	1962							
NEW CODE NO.	592.0	KG	NA							
CASE NO.	2-134	SEX	F LIVER	905.0	1000	25	.041	1.64	1.81	3.08
OCCUPATION	HOUSEWIFE	AGE	92 LUNG	585.0	1000	500	.618	1.24	2.11	2.11
RESIDENT	LOS ALAMOS	YEARS	03 LYMRH	9.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	163.0	107	10	.015	<MRL*	<MRL*	
CAUSE OF DEATH	CANCER	YEAR	1963 VERTEBRAE							
NEW CODE NO.	199.0	KG	NA							
CASE NO.	2-136	SEX	F LIVER	1141.0	1000	25	.113	4.52	3.96	6.73
OCCUPATION	HOUSEWIFE	AGE	54 KIDNEY	285.0	100	10	.025	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS	18							
STATE	NEW MEXICO									
CAUSE OF DEATH	UNKNOWN	YEAR	1963							
NEW CODE NO.	NA	KG	NA							
CASE NO.	2-140	SEX	M LIVER	2753.0	1000	50	0.000	<MRL*	<MRL*	1.36
OCCUPATION	REPAIRMAN	AGE	52 LUNG	1525.0	1000	500	1.039	2.08	1.36	
RESIDENT	LOS ALAMOS	YEARS	07 LYMRH	14.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	368.0	100	10	.020	<MRL*	<MRL*	
CAUSE OF DEATH	CARDIAC	YEAR	1963 VERTEBRAE							
NEW CODE NO.	NA	KG	NA							
CASE NO.	2-146	SEX	F LIVER	1564.0	1000	25	.030	1.20	.77	1.30
OCCUPATION	HOUSEWIFE	AGE	42 LUNG	1180.0	1000	500	.595	1.19	1.00	1.00
RESIDENT	LOS ALAMOS	YEARS	11 LYMRH	2.0	50	10	.030	.15	75.00	.75
STATE	NEW MEXICO		KIDNEY	265.0	100	10	.030	.30	1.13	.34
CAUSE OF DEATH	MYOCARDIAL INF	YEAR	1963 RIB							
NEW CODE NO.	420.1	KG	NA							
CASE NO.	3- 36	SEX	M LIVER	1185.0	1000	25	.078	3.12	2.63	4.48
OCCUPATION	INS AGENT	AGE	92 LUNG	888.0	1000	500	.945	1.89	2.13	2.13
RESIDENT	LOS ALAMOS	YEARS	04 LYMRH	7.0	50	10	.087	.43	62.14	.62
STATE	NEW MEXICO		KIDNEY	315.0	100	10	.556	5.56	17.65	5.30
CAUSE OF DEATH	PERITONITIS	YEAR	1967 RIB							
NEW CODE NO.	576.0	KG	NA							
CASE NO.	3- 38	SEX	F LIVER	1750.0	1000	250	3.560	14.24	8.14	13.83
OCCUPATION	HOUSEWIFE	AGE	63 LUNG	843.0	1000	500	1.108	2.22	2.63	2.63
RESIDENT	LOS ALAMOS	YEARS	NA LYMRH	20.0	50	10	.050	.25	12.50	.13
STATE	NEW MEXICO		KIDNEY	199.0	100	25	2.200	8.80	44.22	13.27
CAUSE OF DEATH	HEART ATTACK	YEAR	1967 RIB							
NEW CODE NO.	447.0	KG	NA							
CASE NO.	3- 42	SEX	M LIVER	1015.0	1000	25	.056	2.24	2.21	3.75
OCCUPATION	NA	AGE	61 LUNG	1030.0	1000	25	.061	2.44	2.37	2.37
RESIDENT	LOS ALAMOS	YEARS	NA LYMRH	12.0	50	10	.051	.25	21.25	.21
STATE	NEW MEXICO		KIDNEY	355.0	100	10	.055	.55	1.55	.66
CAUSE OF DEATH	ARTERIOSCLEROSIS	YEAR	1967 RIB							
NEW CODE NO.	450.0	KG	NA							
CASE NO.	3- 48	SEX	M LIVER	1870.0	1000	25	.069	2.76	1.48	2.51
OCCUPATION	STUDENT	AGE	17 LUNG	1215.0	1000	25	.063	2.52	2.07	2.07
RESIDENT	LOS ALAMOS	YEARS	17 LYMRH	10.0	50	10	.021	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	330.0	100	10	.022	<MRL*	<MRL*	
CAUSE OF DEATH	TRAUMATIC INJ	YEAR	1967 RIB							
NEW CODE NO.	825.0	KG	NA							
CASE NO.	3- 54	SEX	F LIVER	2180.0	1000	25	.061	2.44	1.12	1.90
OCCUPATION	HOUSEWIFE	AGE	41 LUNG	600.0	1000	25	.072	2.88	4.80	4.80
RESIDENT	LOS ALAMOS	YEARS	14 LYMRH	10.0	50	10	.209	1.04	104.50	1.04
STATE	NEW MEXICO		KIDNEY	350.0	100	10	.114	1.14	3.26	.98
CAUSE OF DEATH	CANCER OF RECTUM	YEAR	1967 RIB							
NEW CODE NO.	154.0	KG	NA							
CASE NO.	3- 58	SEX	M LIVER	2060.0	1000	25	.205	8.20	3.98	6.77
OCCUPATION	REALTOR	AGE	54 LUNG	1090.0	1000	25	.034	1.36	1.25	1.25
RESIDENT	LOS ALAMOS	YEARS	02 KIDNEY	270.0	180	10	.004	<MRL*	<MRL*	
STATE	NEW MEXICO		RIB	120.0	250	10	.027	<MRL*	<MRL*	
CAUSE OF DEATH	CIRRHOSIS	YEAR	1967							
NEW CODE NO.	561.0	KG	NA							
CASE NO.	3- 62	SEX	M LIVER	1520.0	1000	25	.078	3.12	2.05	3.49
OCCUPATION	BAKER	AGE	57 LUNG	767.0	1000	25	.270	10.80	14.08	14.08
RESIDENT	LOS ALAMOS	YEARS	24 LYMRH	10.0	50	10	.031	.15	15.50	.15
STATE	NEW MEXICO		KIDNEY	260.0	189	10	.117	1.17	4.50	1.45
CAUSE OF DEATH	CARDIAC	YEAR	1967 RIB							
NEW CODE NO.	422.9	KG	NA							

(DIS/MIN)

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	HEW CODE NO.	SEX	AGE	YEARS	YEAR	KG	TISSUE	WEI WEIGHT SAMPLE (GRAM)	VOLUME OR SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
3- 68	DRUGGIST	LOS ALAMOS	NEW MEXICO	CORONARY OCC	420-1	M	67	02	1967	NA	LUNG	987.0	1000	25	.142	5.68	5.75	5.75
											LYMPH	13.0	50	10	.003	<MRL>	<MRL>	<MRL>
											KIDNEY	380.0	100	10	.010	<MRL>	<MRL>	<MRL>
											RIB	62.0	100	10	.012	<MRL>	<MRL>	<MRL>
3- 74	MECHANIC	LOS ALAMOS	NEW MEXICO	PNEUMONIA	493-9	M	42	NA	1968	NA	LIVER	2150.0	1000	25	.096	3.92	1.82	3.10
											LUNG	1275.0	1000	500	.011	1.62	1.27	1.27
											LYMPH	5.0	50	10	.020	<MRL>	<MRL>	<MRL>
											KIDNEY	440.0	100	10	.072	.72	1.64	.49
											RIB	40.0	100	10	.001	<MRL>	<MRL>	<MRL>
3- 76	STUDENT	LOS ALAMOS	NEW MEXICO	BIRTH DEFECTS	053-8	M	15	15	1968	NA	LIVER	1660.0	1000	25	0.000	<MRL>	<MRL>	<MRL>
											LUNG	1780.0	1000	500	.426	.85	.48	.48
											LYMPH	5.0	50	10	.033	.16	33.00	.33
											KIDNEY	270.0	100	10	.026	<MRL>	<MRL>	<MRL>
											RIB	50.0	100	10	.259	2.49	49.80	348.60
3- 82	BUSINESS	LOS ALAMOS	NEW MEXICO	GUNSHOT IN HEAD	979.0	M	41	20	1968	NA	LIVER	2100.0	1000	25	.149	5.96	2.84	4.82
											LUNG	1325.0	1000	500	.676	1.35	1.02	1.02
											LYMPH	4.0	50	10	.001	<MRL>	<MRL>	<MRL>
											KIDNEY	410.0	100	10	.003	<MRL>	<MRL>	<MRL>
											RIB	38.0	100	10	.075	.75	19.74	138.16
3-124	STUDENT	LOS ALAMOS	NEW MEXICO	MEMORRHAGE	856-9	MA	15	NA	1969	NA	LIVER	1400.0	1000	800	.877	1.75	1.25	2.13
											LUNG	1228.0	1000	500	.236	.47	.38	.38
											KIDNEY	297.0	100	10	.012	<MRL>	<MRL>	<MRL>
											RIB	83.0	100	100	.009	<MRL>	<MRL>	<MRL>
3-140	TEACHER	LOS ALAMOS	NEW MEXICO	LIVER CANCER	156.0	F	74	20	1969	NA	LUNG	680.0	500	250	.636	1.37	2.02	2.02
											LYMPH	1.0	50	10	.005	<MRL>	<MRL>	<MRL>
											KIDNEY	270.0	100	10	0.000	<MRL>	<MRL>	<MRL>
											RIB	88.0	150	50	.014	<MRL>	<MRL>	<MRL>
5- 2	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	CARCINOMA	156.0	F	68	68	1967	NA	LIVER	3476.0	1000	250	.614	2.46	.71	1.20
											LUNG	2267.0	1000	250	.369	1.48	1.16	1.16
5- 14	REST OWNER	LOS ALAMOS	NEW MEXICO	CANCER	199.0	M	49	03	1969	NA	LIVER	1692.0	1000	250	1.397	5.59	3.30	5.61
											LUNG	1757.0	1000	500	.453	.91	.52	.52
											KIDNEY	270.0	100	50	.013	<MRL>	<MRL>	<MRL>
											RIB	190.0	250	100	.065	.16	.88	8.99
5- 16	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	LUNG CANCER	163.0	F	52	23	1969	NA	LIVER	2570.0	1000	500	.379	.76	.29	.50
											LUNG	530.0	500	250	1.235	2.47	4.66	4.66
											LYMPH	2.0	50	10	.052	.26	130.00	1.30
											KIDNEY	300.0	100	10	.022	<MRL>	<MRL>	<MRL>
											RIB	85.0	100	50	.085	.17	2.00	14.00
5- 18	RES PROP	LOS ALAMOS	NEW MEXICO	PNEUMONIA	493-9	M	78	NA	1969	NA	LIVER	1400.0	1000	250	.942	3.77	2.69	4.58
											LUNG	1693.0	1000	900	.707	1.41	.84	.84
											LYMPH	5.0	50	10	.053	.26	53.00	.53
											KIDNEY	311.0	100	10	.015	<MRL>	<MRL>	<MRL>
											RIB	105.0	100	50	0.000	<MRL>	<MRL>	<MRL>
5- 22	HOUSEWIFE	NA	NA	HEART ATTACK	420-1	MA	80	NA	1969	NA	LIVER	1555.0	1000	800	7.000	14.00	9.00	15.31
											LUNG	974.0	1000	800	1.948	5.90	6.05	6.65
5- 26	HOUSEWIFE	LOS ALAMOS	NEW MEXICO	PUL EMBOLISM	445.	F	76	NA	1969	NA	LIVER	1040.0	1000	250	.204	.82	.78	1.33
											LUNG	650.0	500	250	.408	.82	1.26	1.26
											LYMPH	8.0	50	10	.018	<MRL>	<MRL>	<MRL>
											KIDNEY	147.0	100	10	0.000	<MRL>	<MRL>	<MRL>
											RIB	85.0	100	50	.015	<MRL>	<MRL>	<MRL>

			TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	5- 34	SEX	F	LIVER	1270.0	1000	500	.019	<MRL*	<MRL*	
OCCUPATION	HOUSEWIFE	AGE	35	LUNG	563.0	1000	250	.171	.68	1.21	1.21
RESIDENT	LOS ALAMOS	YEARS NA		LYMPH	3.0	50	10	.005	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	213.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	GUNSHOT WND	YEAR	1969	RIB	78.0	100	50	0.000	<MRL*	<MRL*	
NEW CODE NO.	E979.0	KG	NA								
CASE NO.	5- 38	SEX	M	LIVER	1456.0	1000	500	.192	.38	.26	.45
OCCUPATION	NA	AGE	85	LUNG	1010.0	1000	500	.112	.22	.22	.22
RESIDENT	LOS ALAMOS	YEARS NA		LYMPH	10.0	50	10	.014	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	250.0	100	10	.023	<MRL*	<MRL*	
CAUSE OF DEATH	PULMONARY INF	YEAR	1969	RIB	170.0	250	100	.047	.12	.69	4.84
NEW CODE NO.	465.0	KG	NA								
CASE NO.	5- 56	SEX	F	LIVER	1434.0	1000	250	.067	.27	.19	.32
OCCUPATION	HOUSEWIFE	AGE	73	LUNG	1050.0	1000	250	.212	.85	.81	.81
RESIDENT	LOS ALAMOS	YEARS 72		LYMPH	3.0	50	10	.006	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	264.0	100	10	.044	.44	1.67	.50
CAUSE OF DEATH	HEART ATTACK	YEAR	19 0	VERTEBRAE	70.0	100	10	.058	.58	8.29	50.00
NEW CODE NO.	420.1	KG	NA								
CASE NO.	5- 58	SEX	F	LIVER	900.0	250	100	.718	1.79	1.99	3.39
OCCUPATION	BNK CLERK	AGE	37	LUNG	675.0	500	250	.794	1.59	2.34	2.34
RESIDENT	WHITE ROCK	YEARS 37		LYMPH	2.0	50	10	.044	.22	110.00	1.10
STATE	NEW MEXICO			KIDNEY	193.0	200	10	.018	<MRL*	<MRL*	
CAUSE OF DEATH	CANCER	YEAR	19 0	VERTEBRAE	75.0	250	100	.013	<MRL*	<MRL*	
NEW CODE NO.	199.0	KG	NA								
CASE NO.	5- 60	SEX	F	LIVER	1577.0	500	250	.133	.27	.17	.29
OCCUPATION	HOUSEWIFE	AGE	67	LUNG	430.0	500	250	.132	.26	.61	.61
RESIDENT	LOS ALAMOS	YEARS 67		LYMPH	5.0	50	10	.044	.22	44.00	.44
STATE	NEW MEXICO			KIDNEY	255.0	200	10	.013	<MRL*	<MRL*	
CAUSE OF DEATH	HEART ATTACK	YEAR	19 0	VERTEBRAE	106.0	200	100	.039	.08	.78	5.45
NEW CODE NO.	420.1	KG	NA								
CASE NO.	5- 74	SEX	F	LUNG	1214.0	500	250	.306	.61	.50	.50
OCCUPATION	HOUSEWIFE	AGE	48	LYMPH	22.0	25	10	.026	<MRL*	<MRL*	
RESIDENT	LOS ALAMOS	YEARS NA		KIDNEY	414.0	100	10	.019	<MRL*	<MRL*	
STATE	NEW MEXICO			RIB	90.0	200	100	.285	.57	5.82	40.71
CAUSE OF DEATH	COR PULMONALE	YEAR	1970								
NEW CODE NO.	434.7	KG	NA								
CASE NO.	5- 86	SEX	F	LIVER	1785.0	500	250	1.624	3.25	1.02	3.09
OCCUPATION	STUDENT	AGE	17	LUNG	543.0	500	250	.156	.31	.57	.57
RESIDENT	LOS ALAMOS	YEARS 17		LYMPH	5.0	25	10	.018	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	222.0	100	10	.105	1.05	4.73	1.42
CAUSE OF DEATH	HEAD INJURY	YEAR	1970	RIB	50.0	200	100	.036	.07	1.44	10.08
NEW CODE NO.	850.1	KG	NA								
CASE NO.	5-110	SEX	F	LIVER	957.0	500	100	.502	2.51	2.62	4.46
OCCUPATION	HOUSEWIFE	AGE	87	LUNG	801.0	1000	250	.241	.93	1.20	1.20
RESIDENT	LOS ALAMOS	YEARS NA		LYMPH	14.0	25	10	.008	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	299.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PUL EMBOLISM	YEAR	1971	RIB	81.0	200	100	.064	.13	1.58	11.06
NEW CODE NO.	465.0	KG	NA								
CASE NO.	7- 2	SEX	F	LIVER	1140.0	1000	250	.920	3.68	3.23	5.49
OCCUPATION	HOUSEWIFE	AGE	88	LUNG	648.0	1000	250	.060	.24	.37	.37
RESIDENT	LOS ALAMOS	YEARS NA		LYMPH	4.1	25	10	.006	1.52	349.51	3.70
STATE	NEW MEXICO			KIDNEY	170.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	HEART ATTACK	YEAR	1971								
NEW CODE NO.	434.1	KG	NA								
CASE NO.	7- 14	SEX	F	LIVER	1275.0	1000	250	1.300	5.20	4.08	6.93
OCCUPATION	HOUSEWIFE	AGE	69	LUNG	967.0	1000	250	.405	2.42	2.50	2.50
RESIDENT	LOS ALAMOS	YEARS NA									
STATE	NEW MEXICO										
CAUSE OF DEATH	STROKE	YEAR	1971								
NEW CODE NO.	334.0	KG	NA								

TABLE A-II NON-RESIDENTS OF LOS ALAMOS, NO OCCUPATIONAL EXPOSURE TO PLUTONIUM

\*MRL = MINIMUM REPORTING LEVEL = 0.03 DPM PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS, BRQ, AND RECOVERY STATISTICS

			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DPS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	1- 72	SEX M	LIVER	1705.0	1000	50	.060	1.20	.70	1.20
OCCUPATION	RETIRED	AGE 76	LUNG	884.0	1000	500	.334	.67	.76	.76
RESIDENT	NEW ORLEANS	YEARS NA	LYMPH	20.0	25	10	.060	.15	7.50	.07
STATE	LOUISIANA		KIDNEY	300.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	POST OP SHOCK	YEAR 1960								
NEW CODE NO.	998.0	KG NA								
CASE NO.	1- 78	SEX F	LIVER	1361.0	1000	50	0.000	<MRL*	<MRL*	
OCCUPATION	HOUSEWIFE	AGE 72	LUNG	475.0	1000	500	.697	1.39	2.93	2.93
RESIDENT	LAS VEGAS	YEARS NA	LYMPH	12.0	25	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	242.0	100	10	.030	.30	1.24	.37
CAUSE OF DEATH	POST OP SHOCK	YEAR 1960								
NEW CODE NO.	998.0	KG NA								
CASE NO.	1- 82	SEX F	LUNG	853.0	1000	500	1.366	2.73	3.20	3.20
OCCUPATION	RESIDENT	AGE 75	LYMPH	16.0	100	10	.010	<MRL*	<MRL*	
RESIDENT	SCRANTON	YEARS NA	KIDNEY	320.0	100	10	.830	8.30	25.94	7.78
STATE	PENNA.									
CAUSE OF DEATH	CARDIAC	YEAR 1960								
NEW CODE NO.	420.3	KG NA								
CASE NO.	1- 84	SEX F	LUNG	1068.0	1000	500	.916	1.83	1.72	1.72
OCCUPATION	HOUSEWIFE	AGE 88	LYMPH	6.0	100	10	.010	<MRL*	<MRL*	
RESIDENT	NA	YEARS NA	KIDNEY	234.0	100	10	.110	1.10	4.70	1.41
STATE	NA									
CAUSE OF DEATH	POST OP SHOCK	YEAR 1960								
NEW CODE NO.	998.0	KG NA								
CASE NO.	1- 86	SEX F	LIVER	2220.0	1000	50	.080	1.60	.72	1.23
OCCUPATION	HOUSEWIFE	AGE 40	LUNG	956.0	1000	500	1.101	2.20	3.96	3.96
RESIDENT	SANTA FE	YEARS NA	LYMPH	2.0	50	10	.010	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	450.0	100	10	.010	<MRL*	<MRL*	
CAUSE OF DEATH	LEUKEMIA	YEAR 1960								
NEW CODE NO.	204.0	KG NA								
CASE NO.	1- 92	SEX F	LIVER	1180.0	1000	50	.050	1.00	.85	1.44
OCCUPATION	HOUSEWIFE	AGE 77	LUNG	517.0	1000	500	.902	1.80	3.49	3.49
RESIDENT	NA	YEARS NA	LYMPH	3.0	50	10	.010	<MRL*	<MRL*	
STATE	NA		KIDNEY	246.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	ARTERIOSCLEROSIS	YEAR 1960								
NEW CODE NO.	420.0	KG NA								
CASE NO.	1- 98	SEX F	LIVER	854.0	1000	50	.030	.60	.70	1.19
OCCUPATION	HOUSEWIFE	AGE 89	LUNG	834.0	1000	500	.339	.68	.81	.81
RESIDENT	NOVA SCOTIA	YEARS 8	LYMPH	14.0	50	10	.090	.45	32.14	.32
STATE	BRITISH CO		KIDNEY	143.0	100	10	.040	.40	2.80	.84
CAUSE OF DEATH	PNEUMONIA	YEAR 1960								
NEW CODE NO.	493.0	KG NA								
CASE NO.	1-104	SEX M	LIVER	2120.0	1000	50	.060	1.20	.57	.96
OCCUPATION	NA	AGE 31	LUNG	1460.0	1000	500	1.249	2.50	1.71	1.71
RESIDENT	NA	YEARS NA	LYMPH	11.0	25	10	.640	1.60	145.45	1.45
STATE	NA		KIDNEY	375.0	100	10	.140	1.40	3.73	1.12
CAUSE OF DEATH	ALCOHOLISM	YEAR 1960								
NEW CODE NO.	381.0	KG NA								
CASE NO.	1-142	SEX F	LIVER	1480.0	1000	50	.140	2.80	1.89	3.22
OCCUPATION	HOUSEWIFE	AGE 78	LUNG	646.0	1000	500	.598	1.20	1.85	1.85
RESIDENT	NA	YEARS NA	LYMPH	28.0	50	10	.100	.50	17.86	.18
STATE	NA		KIDNEY	170.0	100	10	.130	1.30	7.65	2.29
CAUSE OF DEATH	MYOCARDIAL HYPER	YEAR 1961								
NEW CODE NO.	422.0	KG NA								
CASE NO.	1-143	SEX F	LIVER	2070.0	1000	50	.040	.80	.39	.66
OCCUPATION	HOUSEWIFE	AGE 45	LUNG	1415.0	1000	500	.630	1.26	.89	.89
RESIDENT	NA	YEARS NA	LYMPH	7.0	50	10	.140	.70	100.00	1.00
STATE	NA		KIDNEY	267.0	100	10	.040	.40	1.50	.45
CAUSE OF DEATH	PNEUMONIA	YEAR 1961								
NEW CODE NO.	490.0	KG NA								
CASE NO.	1-146	SEX F	LIVER	1149.0	1000	50	.180	3.60	3.13	5.33
OCCUPATION	HOUSEWIFE	AGE 58	LUNG	775.0	1000	50	.210	4.20	5.42	5.42
RESIDENT	NA	YEARS NA	LYMPH	3.0	50	10	0.000	<MRL*	<MRL*	
STATE	NA		KIDNEY	291.0	100	10	.060	.60	2.06	.62
CAUSE OF DEATH	BREAST CANCER	YEAR 1961								
NEW CODE NO.	170.0	KG NA								
CASE NO.	1-148	SEX M	LIVER	1292.0	1000	50	.040	.80	.62	1.05
OCCUPATION	FORST SERV	AGE 76	LUNG	510.0	1000	500	.593	1.19	2.33	2.33
RESIDENT	SANTA FE	YEARS NA	LYMPH	21.0	50	10	.010	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	185.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	RUPTURED AORTA	YEAR 1961								
NEW CODE NO.	451.0	KG NA								



			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	2- 6	SEX	M LIVER	1665.0	1000	50	.048	.96	.58	.98
OCCUPATION	RETIRED	AGE	78 LUNG	785.0	1000	500	.906	1.81	2.31	2.31
RESIDENT	NA	YEARS	NA LYMPH	7.0	50	10	0.000	<MRL*	<MRL*	
STATE	NA		KIDNEY	310.0	100	10	.040	.40	1.29	.39
CAUSE OF DEATH	RUPT VENTRICLE	YEAR	1961							
NEW CODE NO.	420.1	KG	NA							
CASE NO.	2- 12	SEX	M LIVER	1468.0	1000	50	.052	1.04	.71	1.20
OCCUPATION	RETIRED	AGE	70 LUNG	1187.0	1000	50	.915	<MRL*	<MRL*	
RESIDENT	NA	YEARS	NA LYMPH	33.0	50	10	.020	<MRL*	<MRL*	
STATE	NEW JERSEY		KIDNEY	260.0	100	10	.026	<MRL*	<MRL*	
CAUSE OF DEATH	NEPHRITIS	YEAR	1961							
NEW CODE NO.	593.0	KG	NA							
CASE NO.	2- 16	SEX	F LIVER	3555.0	1000	50	.003	<MRL*	<MRL*	
OCCUPATION	NA	AGE	54 LUNG	943.0	1600	50	.045	.90	.95	.95
RESIDENT	NA	YEARS	NA LYMPH	14.0	50	10	.009	<MRL*	<MRL*	
STATE	NA		KIDNEY	430.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	NA	YEAR	1961							
NEW CODE NO.	NA	KG	NA							
CASE NO.	2- 18	SEX	F LIVER	857.0	1000	50	.034	.68	.79	1.35
OCCUPATION	NA	AGE	59 LUNG	570.0	1000	50	.005	<MRL*	<MRL*	
RESIDENT	NA	YEARS	NA LYMPH	20.0	50	10	.019	<MRL*	<MRL*	
STATE	NA		KIDNEY	254.0	100	10	.017	<MRL*	<MRL*	
CAUSE OF DEATH	BILE NEPHROSIS	YEAR	1961							
NEW CODE NO.	593.0	KG	NA							
CASE NO.	2- 22	SEX	F LIVER	1505.0	1000	50	.018	<MRL*	<MRL*	
OCCUPATION	HOUSEWIFE	AGE	68 LUNG	541.0	1000	50	.002	<MRL*	<MRL*	
RESIDENT	NA	YEARS	NA LYMPH	8.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW JERSEY		KIDNEY	406.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PANCREAS CANCER	YEAR	1961							
NEW CODE NO.	157.0	KG	NA							
CASE NO.	2- 24	SEX	M LIVER	1150.0	1000	50	.114	2.28	1.96	3.37
OCCUPATION	NA	AGE	74 LUNG	1400.0	1000	50	.104	2.08	1.49	1.49
RESIDENT	NA	YEARS	NA LYMPH	20.0	50	10	0.000	<MRL*	<MRL*	
STATE	NA		KIDNEY	207.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	CEREBRAL MEM	YEAR	1961							
NEW CODE NO.	331.0	KG	NA							
CASE NO.	2- 28	SEX	F LIVER	1480.0	1000	50	.494	9.88	6.68	11.35
OCCUPATION	HOUSEWIFE	AGE	71 LUNG	863.0	1000	50	1.567	31.34	36.32	36.32
RESIDENT	NA	YEARS	NA LYMPH	11.0	50	10	.028	<MRL*	<MRL*	
STATE	NA		KIDNEY	272.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	BILIARY OCC	YEAR	1961							
NEW CODE NO.	586.1	KG	NA							
CASE NO.	2- 32	SEX	M LIVER	845.0	1000	50	.119	2.38	2.02	4.79
OCCUPATION	RETIRED	AGE	80 LUNG	875.0	1000	50	.052	1.04	1.19	1.19
RESIDENT	ESPAÑOLA	YEARS	NA KIDNEY	200.0	100	10	.015	<MRL*	<MRL*	
STATE	NEW MEXICO									
CAUSE OF DEATH	EMPHYSEMA	YEAR	1962							
NEW CODE NO.	527.1	KG	NA							
CASE NO.	2- 38	SEX	M LIVER	840.0	1000	50	.063	1.26	1.50	2.55
OCCUPATION	RETIRED	AGE	86 LUNG	910.0	1000	500	.341	.68	.75	.75
RESIDENT	CHARLOTTE	YEARS	NA LYMPH	9.8	50	10	0.000	<MRL*	<MRL*	
STATE	N CAROLINA		KIDNEY	162.0	100	10	.004	<MRL*	<MRL*	
CAUSE OF DEATH	NA	YEAR	1962							
NEW CODE NO.	NA	KG	NA							
CASE NO.	2- 40	SEX	M LIVER	1076.0	1000	50	.014	<MRL*	<MRL*	
OCCUPATION	RETIRED	AGE	87 LUNG	1177.0	1000	500	.363	.73	.62	.62
RESIDENT	ESPAÑOLA	YEARS	NA LYMPH	4.0	50	10	.006	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	215.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PNEUMONIA	YEAR	1962							
NEW CODE NO.	491.9	KG	NA							
CASE NO.	2- 42	SEX	M LIVER	1043.0	1000	50	.016	<MRL*	<MRL*	
OCCUPATION	RETIRED	AGE	77 LUNG	742.0	1000	500	.138	.28	.37	.37
RESIDENT	ESPAÑOLA	YEARS	NA LYMPH	9.0	50	10	.003	<MRL*	<MRL*	
STATE	NEW MEXICO		KIDNEY	350.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	UNKNOWN	YEAR	1962							
NEW CODE NO.	NA	KG	NA							
CASE NO.	2- 62	SEX	F LIVER	1489.0	1000	50	.050	1.00	.67	1.14
OCCUPATION	HOUSEWIFE	AGE	72 LUNG	916.0	1000	500	.271	.54	.59	.59
RESIDENT	NA	YEARS	NA LYMPH	12.0	50	10	0.000	<MRL*	<MRL*	
STATE	TEXAS		KIDNEY	211.0	100	10	.014	<MRL*	<MRL*	
CAUSE OF DEATH	NA	YEAR	1962							
NEW CODE NO.	NA	KG	NA							

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
2-72	NA	ESPAÑOLA	NEW MEXICO	CARDIAC	434.7	M	47	NA	LIVER LYMPH KIDNEY	1121.0 14.0 272.0	1000 50 100	50 10 10	.050 <MRL* 0.000	1.00 <MRL* <MRL*	.89 <MRL* <MRL*	1.52
2-104	CHILD	ESPAÑOLA	NEW MEXICO	LEUKEMIA	204.9	F	12	NA	LIVER LUNG LYMPH KIDNEY RIB	940.0 163.0 1.0 175.0 79.0	1000 160 50 100 100	50 10 10 10 10	.020 .760 0.000 0.000 0.000	<MRL* 7.60 <MRL* <MRL* <MRL*	<MRL* 46.63 <MRL* <MRL* <MRL*	46.63
2-106	TRUCK DRIV	ESPAÑOLA	NEW MEXICO	INJURIES	E025.0	M	27	NA	LIVER LUNG KIDNEY RIB	1383.0 615.0 214.0 259.0	1000 1000 100 500	50 50 10 10	.020 .060 0.000 0.000	<MRL* 1.20 <MRL* <MRL*	<MRL* 1.95 <MRL* <MRL*	1.95
2-108	HOUSEWIFE	ESPAÑOLA	NEW MEXICO	NEPHRITIS	180.0	F	80	NA	LIVER LUNG LYMPH KIDNEY RIB	1117.0 631.0 11.0 100.0 214.0	1000 1000 50 100 250	50 50 10 10 10	.030 .010 0.000 0.000 0.070	.60 <MRL* <MRL* <MRL* 1.75	.54 <MRL* <MRL* <MRL* 8.18	.91 57.24
2-116	HOUSEWIFE	NEBRASKA	CONARARY THROMBO	420.1	F	64	NA	LIVER LUNG KIDNEY	1575.0 1306.0 288.0	1000 1000 100	50 50 10	.030 .180 0.000	.60 3.60 <MRL*	.38 2.76 <MRL*	.65 2.76	
2-118	HOUSEWIFE	ANTON	TEXAS	CANCER OF PELVID	199.0	F	70	NA	LIVER LUNG LYMPH KIDNEY RIB	1210.0 573.0 7.0 217.0 283.0	1000 1000 50 100 250	90 50 10 10 25	.090 .110 .110 0.000 0.000	1.80 2.20 .55 <MRL* <MRL*	1.49 3.84 78.57 <MRL* <MRL*	2.53 3.84 .79
2-120	NA	ALBUQUERQUE	NEW MEXICO	SKULL FRACTURE	E025.0	M	23	NA	LIVER LYMPH KIDNEY RIB	1341.0 11.0 235.0 225.0	1000 50 100 250	50 10 10 10	0.000 0.000 0.000 0.000	<MRL* <MRL* <MRL* <MRL*	<MRL* <MRL* <MRL* <MRL*	
2-128	DENT ASST	POJOAQUE	NEW MEXICO	LEUKEMIA	204.3	F	36	NA	LIVER LUNG LYMPH KIDNEY	2945.0 1340.0 8.0 261.0	1000 1000 50 100	25 25 10 10	.032 .054 .156 .026	1.28 2.16 .78 <MRL*	.43 1.60 97.50 <MRL*	.74 1.60 .97
2-136	RETIRED	LAS VEGAS	NEW MEXICO	MYOCARDIAL INF	420.1	M	89	NA	LIVER LUNG LYMPH KIDNEY RIB	1273.0 885.0 23.0 252.0 485.0	1000 1000 50 100 500	50 500 10 10 10	0.000 .470 0.000 0.000 0.000	<MRL* .94 <MRL* <MRL* <MRL*	<MRL* 1.86 <MRL* <MRL*	1.06
2-148	NA	TIERNA AMARILLA	NEW MEXICO	PNEUMONIA	491.9	M	71	NA	LIVER LUNG LYMPH KIDNEY RIB	800.0 679.0 10.0 228.0 321.0	1000 1000 100 180 250	25 500 10 10 10	.105 1.632 .018 .023 .223	4.20 3.26 <MRL* <MRL* 5.57	5.25 4.81 <MRL* <MRL* 17.37	8.92 4.81 121.57
2-150	CHILD	OJO CALIENTE	NEW MEXICO	LEUKEMIA	NA	M	13	NA	LIVER LUNG LYMPH RIB	1143.6 1315.3 24.8 223.8	1000 1000 50 290	25 500 10 10	.076 1.158 .014 .112	3.04 2.32 <MRL* 2.80	2.66 1.76 <MRL* 12.56	4.52 1.76 87.89
3-38	NA	CHAMA	NEW MEXICO	STOMACH CANCER	151.0	M	56	NA	LIVER LUNG LYMPH KIDNEY RIB	1650.0 1040.0 18.0 348.0 75.6	1000 1000 50 180 250	25 500 10 10 10	.100 .678 .011 .007 .231	4.00 1.36 <MRL* <MRL* 5.77	3.81 1.38 <MRL* <MRL* 77.00	6.48 1.38 830.88

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	KG	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
3- 32	MILITARY	SANTA FE	NEW MEXICO	CANCER	153.0	M	71	NA	1967	LUNG	1027.0	1000	500	.499	1.00	.97	.97
										LYMPH	3.0	50	10	0.000	<MRL*	<MRL*	
										KIDNEY	360.0	100	10	0.000	<MRL*	<MRL*	
										RIB	125.0	250	10	.040	1.00	6.00	50.00
3- 34	COOK	WALTER J	NEW MEXICO		410.0	M	64	NA	1967	LIVER	987.0	1000	25	.058	2.32	2.35	4.00
										LUNG	1040.0	1000	500	1.052	2.10	2.02	2.02
										LYMPH	20.0	50	10	.020	<MRL*	<MRL*	
										KIDNEY	377.0	100	10	0.000	<MRL*	<MRL*	
										RIB	99.8	250	10	.030	.75	8.33	50.33
3- 40	NA	ESPANOLA	NEW MEXICO	PERITONITIS	576.0	M	47	NA	1967	LIVER	1608.0	1000	25	.106	4.24	2.64	4.40
										LUNG	975.0	1000	25	.018	<MRL*	<MRL*	
										LYMPH	16.0	50	10	0.000	<MRL*	<MRL*	
										KIDNEY	360.0	100	10	.022	<MRL*	<MRL*	
3- 50	NA	TAOS	NEW MEXICO	PNEUMONIA	490.9	M	74	NA	1967	LIVER	1000.0	1000	25	.080	3.20	1.78	3.02
										LUNG	1410.0	1000	25	.036	1.44	1.02	1.02
										LYMPH	14.0	50	10	.015	<MRL*	<MRL*	
										KIDNEY	520.0	100	10	.054	1.04		.31
										RIB	175.0	250	10	.237	5.92	33.06	237.00
3- 52	NA	TAOS	NEW MEXICO	SKULL FRACTURE	803.0	F	28	NA	1967	LIVER	2140.0	1000	25	.026	<MRL*	<MRL*	
										LUNG	890.0	1000	25	.042	1.68	1.89	1.89
										LYMPH	2.0	90	10	.154	.77	385.00	3.85
										KIDNEY	320.0	100	10	.027	<MRL*	<MRL*	
										RIB	70.0	250	10	.168	4.20	60.00	420.00
3- 56	HOUSEWIFE	NA	NEW MEXICO	RPTRD SPLEEN	865.9	F	51	NA	1967	LIVER	1330.0	1000	25	.131	5.24	3.94	6.70
										LUNG	945.0	1000	25	.048	1.92	2.03	2.03
										LYMPH	15.0	50	10	.033	.16	11.00	.11
										KIDNEY	220.0	100	10	.037	.37	1.60	.50
										RIB	63.0	250	10	.317	7.92	125.79	880.50
3- 64	HOUSEWIFE	SANTA FE	NEW MEXICO	PERFORATED ULCER	540.2	F	70	NA	1967	LIVER	1300.0	1000	25	.023	<MRL*	<MRL*	
										LUNG	750.0	1000	25	.181	7.24	9.65	9.65
										KIDNEY	16.0	50	10	.042	.21	13.12	.13
										RIB	160.0	100	10	.003	<MRL*	<MRL*	
											50.0	250	10	.104	2.60	52.00	364.00
3- 66	FARMER	PENASCO	NEW MEXICO	RHEUMATIC HEART	416.0	M	55	NA	1967	LIVER	1600.0	1000	25	.029	<MRL*	<MRL*	
										LUNG	1620.0	1000	25	.053	2.12	1.16	1.16
										LYMPH	3.0	50	10	0.000	<MRL*	<MRL*	
										KIDNEY	450.0	100	10	0.000	<MRL*	<MRL*	
										RIB	70.0	100	10	.012	<MRL*	<MRL*	
3- 78	NA	ESPANOLA	NEW MEXICO	PNEUMONIA	493.9	M	83	NA	1968	LIVER	1000.0	1000	25	.058	2.32	2.32	3.94
										LUNG	1310.0	1000	25	.157	6.28	4.79	4.79
										LYMPH	6.0	50	10	.016	<MRL*	<MRL*	
										KIDNEY	270.0	100	10	.001	<MRL*	<MRL*	
										RIB	35.0	100	10	.023	<MRL*	<MRL*	
3- 80	HOUSEWIFE	NA	NEW MEXICO	ACUTE ASTHMA	241.9	F	75	NA	1968	LIVER	1435.0	1000	25	.051	2.04	1.42	2.42
										LUNG	580.0	1000	25	.010	<MRL*	<MRL*	
										LYMPH	5.0	50	10	0.000	<MRL*	<MRL*	
										KIDNEY	310.0	100	10	.006	<MRL*	<MRL*	
										RIB	50.0	100	10	.001	<MRL*	<MRL*	
3- 90	FARMER	EMBUDD	NEW MEXICO	LEUKEMIA	053.9	M	26	NA	1968	LIVER	2710.0	1000	25	.114	4.56	1.68	2.80
										LUNG	1020.0	1000	25	.001	<MRL*	<MRL*	
										LYMPH	2.0	50	10	.010	<MRL*	<MRL*	
										KIDNEY	485.0	100	10	.025	<MRL*	<MRL*	
										RIB	50.0	100	10	.027	<MRL*	<MRL*	
3- 92	TEACHER	POJARQUE	NEW MEXICO	PNEUMONIA	493.9	M	63	NA	1968	LIVER	1365.0	1000	25	.020	<MRL*	<MRL*	
										LUNG	1210.0	1000	25	.029	<MRL*	<MRL*	
										LYMPH	4.0	50	10	.113	.56	141.25	1.31
										KIDNEY	200.0	100	10	0.000	<MRL*	<MRL*	
										RIB	35.0	100	10	.013	<MRL*	<MRL*	

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	YEAR	KG	TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/GRAM)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
3- 94	NA	SANTA FE	NEW MEXICO	NA	NA	M	21	NA	1968	NA	LIVER	1670.0	1000	25	.032	1.28	.77	1.30
											LUNG	660.0	1000	25	3.854	154.16	231.62	231.62
											LYMPH	4.0	50	10	.012	<MRL*	<MRL*	
											KIDNEY	390.0	100	10	0.000	<MRL*	<MRL*	
											RIB	100.0	250	10	.002	<MRL*	<MRL*	
3- 96	FARMER	VELARDE	NEW MEXICO	CANCER	199.0	M	57	NA	1968	NA	LIVER	1625.0	1000	25	.025	<MRL*	<MRL*	
											LUNG	1010.0	1000	25	.011	<MRL*	<MRL*	
											LYMPH	3.0	50	10	.011	<MRL*	<MRL*	
											KIDNEY	295.0	100	10	0.000	<MRL*	<MRL*	
											RIB	150.0	250	10	.006	<MRL*	<MRL*	
5- 4	COLG OFICL	SANTA FE	NEW MEXICO	ARPLN ACCIDENT	E866.0	M	49	49	1967	NA	LIVER	2352.0	1000	250	.014	2.46	1.04	1.78
											LUNG	820.0	1000	250	.120	.48	.59	.59
5- 6	NA	APACHE	RESERVATIO	ACUTE ALCHOLISM	301.2	M	57	57	1967	NA	LIVER	1260.0	1000	250	1.152	4.61	3.66	6.22
											LUNG	1042.0	1980	250	.186	.74	.71	.71
5- 8	CONSTRUCTN	SANTA FE	NEW MEXICO	HEART ATTACK	420.1	M	50	50	1967	NA	LIVER	1570.0	1000	250	8.680	10.72	6.03	11.61
											LUNG	730.0	560	250	.763	1.53	2.09	2.09
5- 10	FRST SERVC	SANTA FE	NEW MEXICO	HEART ATTACK	420.1	M	84	84	1967	NA	LIVER	1415.0	1000	250	1.000	4.00	2.83	4.81
											LUNG	1005.0	1200	250	1.900	6.00	5.97	5.97
5- 12	NA	APACHE	RESV.	NA	NA	F	28	28	1967	NA	LIVER	1660.0	1000	250	.478	1.91	1.15	1.96
											LUNG	985.0	1000	250	.180	.72	.73	.73
5- 20	NA	SANTA FE	NEW MEXICO	ART THROMBOSIS	570.2	M	78	NA	1969	NA	LUNG	1710.0	1000	500	1.216	2.43	1.42	1.42
5- 28	NA	ENSENADA	NEW MEXICO	GUNSHM WND	E919.9	M	22	NA	1969	NA	LIVER	1600.0	1000	500	.181	.36	.23	.38
											LUNG	830.0	1000	500	.279	.56	.67	.67
5- 32	FRST SERV	TOAS PUEBLO	NEW MEXICO	HOMICIDE	E983.0	M	47	NA	1969	NA	LIVER	1876.0	1000	500	1.227	2.45	1.31	2.22
											LUNG	927.0	1000	500	2.303	4.61	4.97	4.97
5- 42	HOUSEWIFE	VELARDE	NEW MEXICO	PANCREAS MEM	587.0	F	58	NA	1969	NA	LIVER	1256.0	1000	500	1.080	2.16	1.72	2.92
											LUNG	680.0	500	250	.427	.85	1.26	1.26
5- 44	NA	SANTA FE	NEW MEXICO	SUBARC MEMORGE	330.0	M	33	NA	1970	NA	LUNG	1380.0	1000	250	.294	1.18	.85	.85
											LYMPH	5.0	25	10	0.000	<MRL*	<MRL*	
											KIDNEY	366.0	100	10	0.000	<MRL*	<MRL*	
											VERTEBRAE	85.0	100	10	.070	.70	8.24	57.65

			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	5- 34	SEX	M	LIVER	961.0	1000	250	.912	3.65	3.80	6.45
OCCUPATION	NA	AGE	70	LUNG	733.0	1000	250	.158	.63	.86	.86
RESIDENT	DEWITT	YEARS	78	LYMPH	5.0	50	10	.033	.16	33.00	.33
STATE	MICHIGAN			KIDNEY	303.0	100	10	.064	.64	2.11	.63
CAUSE OF DEATH	CARCINOMA	YEAR	19 0	VERTEBRAE	135.0	250	100	.018	<MRL*	<MRL*	
NEW CODE NO.	194.0	KG	NA								
CASE NO.	5- 82	SEX	M	LIVER	975.0	500	250	.382	.76	.78	1.33
OCCUPATION	FACTRY WORKR	AGE	64	LUNG	1819.0	500	250	.373	.75	.41	.41
RESIDENT	SANTA FE	YEARS	64	LYMPH	5.0	25	10	.043	.11	21.50	.21
STATE	MEXICO			KIDNEY	292.0	100	10	.023	<MRL*	<MRL*	
CAUSE OF DEATH	CIRRHOSIS	YEAR	19 0	VERTEBRAE	106.0	250	100	.056	.14	1.32	9.25
NEW CODE NO.	581.0	KG	NA								
CASE NO.	5- 86	SEX	M	LUNG	1042.0	500	250	.763	1.53	1.46	1.46
OCCUPATION	NA	AGE	76	LYMPH	3.0	25	10	.046	.11	38.33	.38
RESIDENT	SANTA FE	YEARS	75	KIDNEY	103.0	100	10	.031	.31	1.61	.48
STATE	NEW MEXICO			VERTEBRAE	172.0	250	100	.098	.24	1.42	9.97
CAUSE OF DEATH	NATRL CAUSES	YEAR	19 0								
NEW CODE NO.	410.0	KG	NA								
CASE NO.	5- 68	SEX	M	LIVER	2267.0	500	250	1.979	3.96	1.75	2.97
OCCUPATION	RADIO TECH	AGE	48	LUNG	1824.0	500	250	1.508	3.02	1.65	1.65
RESIDENT	SANTA FE	YEARS	47	LYMPH	4.0	25	10	.069	.17	43.12	.43
STATE	NEW MEXICO			KIDNEY	494.0	100	10	.006	<MRL*	<MRL*	
CAUSE OF DEATH	HEART ATTACK	YEAR	19 0	VERTEBRAE	60.0	250	100	.054	.13	2.25	15.75
NEW CODE NO.	410.0	KG	NA								
CASE NO.	5- 70	SEX	M	LIVER	1563.0	500	250	2.964	5.93	3.79	6.45
OCCUPATION	LABORER	AGE	60	LUNG	687.0	500	250	.684	1.37	1.49	1.99
RESIDENT	SANTA FE	YEARS	59	LYMPH	10.0	25	10	.062	.15	15.50	.15
STATE	NEW MEXICO			KIDNEY	228.0	100	10	.040	.40	1.75	.53
CAUSE OF DEATH	SKULL FRACTURE	YEAR	19 0	VERTEBRAE	128.0	200	100	.027	<MRL*	<MRL*	
NEW CODE NO.	498.0	KG	NA								
CASE NO.	5- 72	SEX	M	LUNG	710.0	500	250	.152	.30	.43	.43
OCCUPATION	CONTRACTOR	AGE	57	LYMPH	5.0	25	10	.061	.15	30.50	.10
RESIDENT	SANTA FE	YEARS	NA	KIDNEY	320.0	100	10	.057	.57	1.78	.53
STATE	NEW MEXICO			VERTEBRAE	125.0	200	100	.119	.24	1.90	13.33
CAUSE OF DEATH	SHOT FOUND	YEAR	19 0								
NEW CODE NO.	4810.0	KG	NA								
CASE NO.	5- 15	SEX	F	LIVER	1295.0	500	250	1.474	2.95	2.28	3.87
OCCUPATION	HOUSEWIFE	AGE	56	LUNG	950.0	500	250	.299	.60	.63	.63
RESIDENT	CORDOVA	YEARS	NA	LYMPH	5.0	25	10	.024	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	283.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	BRAIN TUMOR	YEAR	1970	VERTEBRAE	90.0	200	100	.025	<MRL*	<MRL*	
NEW CODE NO.	193.1	KG	NA								
CASE NO.	5- 92	SEX	F	LIVER	1473.0	500	10	.194	9.70	6.59	11.19
OCCUPATION	HOUSEWIFE	AGE	60	LUNG	805.0	500	250	.121	.24	.30	.30
RESIDENT	CORDOVA	YEARS	NA	LYMPH	10.0	25	10	.011	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	195.0	100	10	.014	<MRL*	<MRL*	
CAUSE OF DEATH	NA	YEAR	1970	VERTEBRAE	60.0	200	100	.034	.07	1.13	7.03
NEW CODE NO.	NA	KG	NA								
CASE NO.	5- 84	SEX	F	LIVER	1010.0	500	250	1.793	3.59	3.55	6.04
OCCUPATION	HOUSEWIFE	AGE	76	LUNG	843.0	500	250	.287	.57	.68	.68
RESIDENT	PARKVIEW	YEARS	NA	LYMPH	8.0	25	10	.144	.36	45.00	.45
STATE	NEW MEXICO			KIDNEY	254.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PNEUMONIA	YEAR	1970	VERTEBRAE	60.0	200	100	0.000	<MRL*	<MRL*	
NEW CODE NO.	491.0	KG	NA								
CASE NO.	5- 88	SEX	F	LIVER	2653.0	500	250	.756	1.51	.57	.97
OCCUPATION	HOUSEWIFE	AGE	61	LUNG	655.0	500	100	.284	1.42	2.17	2.17
RESIDENT	CORDOVA	YEARS	61	LYMPH	2.0	25	10	.151	.38	188.75	1.89
STATE	NEW MEXICO			KIDNEY	388.4	100	10	.009	<MRL*	<MRL*	
CAUSE OF DEATH	NA	YEAR	1970	VERTEBRAE	55.0	200	100	.036	.07	1.31	9.16
NEW CODE NO.	NA	KG	NA								
CASE NO.	5- 90	SEX	M	LIVER	2142.0	500	250	2.753	5.51	2.57	4.37
OCCUPATION	HIWAY DEPT	AGE	58	LUNG	910.0	500	250	.314	.63	.69	.69
RESIDENT	SANTA FE	YEARS	NA	LYMPH	10.0	25	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	385.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	INJURIES	YEAR	1970	RIB	185.0	200	100	.043	.09	.46	3.25
NEW CODE NO.	4825.0	KG	NA								
CASE NO.	5- 92	SEX	M	LIVER	1727.0	500	250	1.165	2.33	1.35	2.29
OCCUPATION	SALESMAN	AGE	41	LUNG	631.0	500	250	.187	.37	.59	.59
RESIDENT	SANTA FE	YEARS	19	LYMPH	17.0	25	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	350.0	100	10	.009	<MRL*	<MRL*	
CAUSE OF DEATH	ALCOHOLISM	YEAR	1970	RIB	104.0	200	100	.306	.61	5.80	41.19
NEW CODE NO.	326.3	KG	NA								

			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	5- 96	SEX	M	LIVER	1870.0	500	250	.2179	4.36	2.33	3.96
OCCUPATION	T CRT MNGR	AGE	52	LUNG	824.0	500	250	.227	.45	.55	.55
RESIDENT	SANTA FE	YEARS	NA	LYMNH	7.0	25	10	.008	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	310.0	100	10	.005	<MRL*	<MRL*	
CAUSE OF DEATH	HEART ATTACK	YEAR	1970	RIB	106.0	200	100	.035	.07	.65	4.54
NEW CODE NO.	420.1	KG	NA								
CASE NO.	5- 98	SEX	M	LIVER	2075.0	500	250	.211	.42	.26	.35
OCCUPATION	NA	AGE	30	LUNG	1572.0	500	250	.205	.41	.26	.26
RESIDENT	SANTA FE	YEARS	NA	LYMNH	10.0	25	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	466.0	100	10	.006	<MRL*	<MRL*	
CAUSE OF DEATH	ASPIRATION	YEAR	1970	RIB	92.0	200	100	.059	.12	1.27	8.00
NEW CODE NO.	933.0	KG	NA								
CASE NO.	5-106	SEX	M	LUNG	650.0	500	250	.276	.55	.85	.85
OCCUPATION	MNTNCE MAN	AGE	27	LYMNH	3.0	25	10	0.000	<MRL*	<MRL*	
RESIDENT	SANTA FE	YEARS	27	KIDNEY	263.0	100	10	.009	<MRL*	<MRL*	
STATE	NEW MEXICO										
CAUSE OF DEATH	GNSHT WOUND	YEAR	1970								
NEW CODE NO.	E919.9	KG	NA								
CASE NO.	5-112	SEX	M	LIVER	1625.0	500	100	.756	3.78	2.33	3.95
OCCUPATION	PHYSICIAN	AGE	57	LUNG	1006.0	1000	250	.136	.54	.54	.54
RESIDENT	ESPANOLA	YEARS	NA	LYMNH	7.0	25	10	.015	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	307.0	100	10	.005	<MRL*	<MRL*	
CAUSE OF DEATH	DRUGS	YEAR	1970	RIB	91.0	200	100	.018	<MRL*	<MRL*	
NEW CODE NO.	NA	KG	NA								
CASE NO.	5-148	SEX	M	LIVER	1350.0	1000	250	.649	2.60	1.92	3.27
OCCUPATION	EVIL DDER	AGE	19	LUNG	780.0	1000	250	.043	.17	.23	.23
RESIDENT	ANTON CHICO	YEARS	NA	LYMNH	2.0	25	10	.007	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	280.0	100	10	.011	<MRL*	<MRL*	
CAUSE OF DEATH	BULLETS	YEAR	1971	VERTEBRAE	95.0	200	100	.074	.15	1.56	10.91
NEW CODE NO.	E919.0	KG	NA								
CASE NO.	7- 18	SEX	M	LIVER	1726.0	1000	250	.930	3.72	2.16	3.66
OCCUPATION	NA	AGE	38	LUNG	1917.0	1000	250	.169	.76	.39	.39
RESIDENT	DULCE	YEARS	NA	LYMNH	9.8	25	10	.004	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	223.0	100	10	.012	<MRL*	<MRL*	
CAUSE OF DEATH	SEPSIS	YEAR	1971	VERTEBRAE	74.0	200	100	.019	<MRL*	<MRL*	
NEW CODE NO.	053.9	KG	NA								
CASE NO.	7- 22	SEX	M	LIVER	1474.0	1000	250	.240	.96	.65	1.11
OCCUPATION	NA	AGE	19	LUNG	1025.0	1000	250	.141	.56	.55	.55
RESIDENT	SANTA FE	YEARS	NA	LYMNH	3.0	25	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICO			KIDNEY	337.0	100	10	.006	<MRL*	<MRL*	
CAUSE OF DEATH	DRUG OVERDOSE	YEAR	1971	VERTEBRAE	102.0	200	100	.030	.06	.59	4.12
NEW CODE NO.	989.8	KG	NA								

TABLE A-III COLORADO CASES ANALYZED FOR PLUTONIUM

\*MRL = MINIMUM REPORTING LEVEL = 0.03 D/H PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS, BKG, AND RECOVERY STATISTICS

CASE NO.	SEX	AGE	YEARS	STATE	CAUSE OF DEATH	MEM CODE NO.	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
5-100	M	49	NA	COLORADO	CORONARY OCC	420+1	LUNG LYMPH KIDNEY RIB	1355.0 10.0 400.0 117.0	500 25 100 200	250 10 10 100	.731 .012 .010 .079	.66 <MRL* <MRL* .16	.49 <MRL* <MRL* 1.35	.49 <MRL* <MRL* 9.45
6- 2	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	465.0 190.0 3.0 162.0	500 500 25 200	250 250 10 50	.660 .125 .012 .009	1.32 .25 <MRL* <MRL*	2.84 1.32 <MRL* <MRL*	4.83 1.32 <MRL* <MRL*
6- 4	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	500.0 325.0 3.0 150.0	500 500 25 200	250 250 10 50	.666 .548 .051 .033	1.33 1.10 .13 .13	2.66 3.37 42.50 .88	4.53 3.37 .42 6.16
6- 6	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	387.0 233.0 25.0 151.0	500 500 25 200	250 250 10 50	.412 .064 0.000 .021	.82 .13 <MRL* <MRL*	2.13 .55 <MRL* <MRL*	3.62 .55 <MRL* <MRL*
6- 8	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	1013.0 502.0 10.0 144.0	500 500 25 200	250 250 10 50	1.545 .133 .076 .004	3.09 .27 <MRL* <MRL*	3.05 .53 <MRL* <MRL*	5.19 .53 <MRL* <MRL*
6- 10	NA	NA	NA	COLORADO	NA	NA	LUNG LYMPH RIB	404.0 17.0 197.0	500 25 200	250 10 50	1.000 .058 .057	2.00 .13 .23	4.95 7.35 1.16	4.95 .07 8.18
6- 12	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	343.0 137.0 2.0 116.0	500 500 25 200	250 250 10 50	.286 .030 .009 .037	.57 .06 <MRL* .15	1.67 .44 <MRL* 1.28	2.83 .44 <MRL* 8.93
6- 14	NA	NA	NA	COLORADO	NA	NA	LUNG LYMPH RIB	1165.0 107.0 230.0	500 25 200	250 10 50	.594 .818 .054	1.19 <MRL* .22	1.02 <MRL* .94	1.02 <MRL* 6.57
6- 16	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG RIB	410.0 390.0 229.0	500 500 200	250 250 50	.615 .125 0.000	1.23 .25 <MRL*	3.00 .64 <MRL*	5.10 .64 <MRL*
6- 18	NA	NA	NA	COLORADO	NA	NA	LIVER LYMPH RIB	715.0 3.0 125.0	500 25 200	250 10 50	1.149 .009 .063	2.30 <MRL* .25	3.21 <MRL* 2.02	5.46 <MRL* 14.11
6- 20	NA	NA	NA	COLORADO	NA	NA	LIVER LUNG LYMPH RIB	613.0 443.0 12.0 210.0	500 500 25 200	250 250 10 50	.518 .192 0.000 0.000	1.04 .38 <MRL* <MRL*	1.69 .87 <MRL* <MRL*	2.87 .87 <MRL* <MRL*
6- 22	NA	NA	NA	COLORADO	NA	NA	LIVER LYMPH RIB	310.0 5.0 130.0	500 25 200	250 10 50	.154 0.000 .028	.31 <MRL* <MRL*	.99 <MRL* <MRL*	1.69 <MRL* <MRL*

CASE NO.	RESIDENT	STATE	CAUSE OF DEATH	MEM CODE NO.	SEX	AGE	YEARS	KG	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
6- 26	NA	COLORADO	NA	NA	NA	NA	NA	NA	LUNG	428.0	1000	250	.021	<MRL*	<MRL*	
	NA	NA	NA	NA	NA	NA	NA	NA	LYMPH	10.0	25	10	.008	<MRL*	<MRL*	
	NA	NA	NA	NA	NA	NA	NA	NA	RIB	150.0	200	50	.014	<MRL*	<MRL*	
6- 28	NA	COLORADO	HEART DISEASE	420.1	M	75	NA	NA	LIVER	958.0	1000	250	.622	2.49	2.60	4.42
	NA	NA	NA	NA	M	75	NA	NA	LUNG	1215.0	1000	250	.387	1.55	1.27	1.27
	NA	NA	NA	NA	M	75	NA	NA	KIDNEY	358.0	100	10	.064	.64	1.79	.54
	NA	NA	NA	NA	M	75	NA	NA	RIB	23.0	200	50	.023	<MRL*	<MRL*	
6- 30	NA	COLORADO	CORONARY OCCLUSI	420.3	M	52	NA	NA	LIVER	2038.0	1000	250	.552	2.21	1.08	1.84
	NA	NA	NA	NA	M	52	NA	NA	LUNG	1001.0	1000	250	.107	.43	.43	.43
	NA	NA	NA	NA	M	52	NA	NA	LYMPH	284.0	74	10	0.000	<MRL*	<MRL*	
	NA	NA	NA	NA	M	52	NA	NA	KIDNEY	420.0	100	10	.082	.82	1.04	.50
	NA	NA	NA	NA	M	52	NA	NA	GONAD	181.0	100	10	.091	.91	5.03	.20
6- 32	NA	COLORADO	NA	NA	NA	NA	NA	NA	LIVER	867.0	1000	250	.906	3.62	4.18	7.11
	NA	NA	NA	NA	NA	NA	NA	NA	LUNG	255.0	1000	250	.064	.26	1.00	1.00
	NA	NA	NA	NA	NA	NA	NA	NA	LYMPH	2.0	25	10	.030	.07	37.50	.37
	NA	NA	NA	NA	NA	NA	NA	NA	RIB	68.0	200	50	0.000	<MRL*	<MRL*	
6- 34	NA	COLORADO	NA	NA	NA	NA	NA	NA	LIVER	423.0	1000	250	.327	1.31	3.09	5.26
	NA	NA	NA	NA	NA	NA	NA	NA	LUNG	370.0	1000	250	.034	.14	.37	.37
	NA	NA	NA	NA	NA	NA	NA	NA	RIB	225.0	200	50	0.000	<MRL*	<MRL*	
6- 36	NA	COLORADO	HEART DISEASE	420.0	M	72	NA	NA	LIVER	1400.0	1000	250	1.073	4.29	3.07	5.21
	NA	NA	NA	NA	M	72	NA	NA	KIDNEY	225.0	100	10	.096	.96	4.27	1.28
	NA	NA	NA	NA	M	72	NA	NA	RIB	16.0	200	50	.006	<MRL*	<MRL*	
	NA	NA	NA	NA	M	72	NA	NA	GONAD	72.0	100	10	.077	.77	10.89	.43
6- 38	NA	COLORADO	HEART FAILURE	420.2	M	81	NA	NA	LIVER	1785.0	1000	250	.493	1.97	1.18	1.88
	NA	NA	NA	NA	M	81	NA	NA	LUNG	1181.0	1000	250	.066	.26	.22	.22
	NA	NA	NA	NA	M	81	NA	NA	LYMPH	10.0	25	10	.027	<MRL*	<MRL*	
	NA	NA	NA	NA	M	81	NA	NA	KIDNEY	390.0	100	10	.121	1.21	3.10	.93
	NA	NA	NA	NA	M	81	NA	NA	RIB	37.0	200	50	.026	<MRL*	<MRL*	
6- 40	NA	COLORADO	PULMONARY THROMB	465.0	F	78	NA	NA	LIVER	1106.0	1000	250	.449	1.88	1.70	2.88
	NA	NA	NA	NA	F	78	NA	NA	LUNG	1211.0	1000	250	.276	1.10	.91	.91
	NA	NA	NA	NA	F	78	NA	NA	KIDNEY	357.0	100	10	-0.010	<MRL*	<MRL*	
	NA	NA	NA	NA	F	78	NA	NA	RIB	26.0	200	50	0.000	<MRL*	<MRL*	
6- 42	NA	COLORADO	LIVER ABSCESS	582.0	M	74	NA	NA	LIVER	1514.0	1000	250	.855	3.42	2.26	1.84
	NA	NA	NA	NA	M	74	NA	NA	LUNG	1310.0	1000	250	.341	1.36	1.04	1.04
	NA	NA	NA	NA	M	74	NA	NA	LYMPH	93.0	25	10	0.000	<MRL*	<MRL*	
	NA	NA	NA	NA	M	74	NA	NA	KIDNEY	1064.0	100	10	-0.014	<MRL*	<MRL*	
	NA	NA	NA	NA	M	74	NA	NA	RIB	17.0	200	50	.028	<MRL*	<MRL*	
6- 44	NA	COLORADO	ARTERIAL OCC	420.1	M	53	NA	NA	LIVER	2142.0	1000	250	.613	2.45	1.13	1.93
	NA	NA	NA	NA	M	53	NA	NA	LUNG	2251.0	1000	250	.349	1.40	.62	.62
	NA	NA	NA	NA	M	53	NA	NA	LYMPH	2.0	25	10	0.000	<MRL*	<MRL*	
	NA	NA	NA	NA	M	53	NA	NA	RIB	30.0	200	50	.016	<MRL*	<MRL*	
	NA	NA	NA	NA	M	53	NA	NA	GONAD	60.0	100	10	.110	1.10	10.33	.73
6- 46	NA	COLORADO	MYCARDIAL INF	420.1	F	68	NA	NA	LIVER	717.0	1000	250	.411	1.64	2.29	3.90
	NA	NA	NA	NA	F	68	NA	NA	LUNG	1000.0	1000	250	.075	.38	.38	.38
	NA	NA	NA	NA	F	68	NA	NA	LYMPH	5.0	25	10	0.000	<MRL*	<MRL*	
	NA	NA	NA	NA	F	68	NA	NA	RIB	255.0	200	50	.017	<MRL*	<MRL*	
6- 48	NA	COLORADO	CARCINOMA	172	F	59	NA	NA	LIVER	985.0	1000	250	.588	2.24	2.20	3.49
	NA	NA	NA	NA	F	59	NA	NA	LUNG	490.0	1000	250	.022	<MRL*	<MRL*	
	NA	NA	NA	NA	F	59	NA	NA	RIB	52.0	200	50	.027	<MRL*	<MRL*	



			TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	6- 50	SEX	M	LIVER	1399.0	1000	250	.357	1.43	1.03	1.75
OCCUPATION	MOTEL MNGR	AGE	58	LUNG	1508.0	1000	250	.092	.37	.24	.24
RESIDENT	NA	YEARS	NA	LYMPH	6.0	25	10	.017	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	343.0	100	10	.017	<MRL>	<MRL>	
CAUSE OF DEATH	CORONARY OCC	YEAR	1971	RIB	50.0	200	50	.019	<MRL>	<MRL>	
HEW CODE NO.	420.1	KG	NA								
CASE NO.	6- 52	SEX	F	LIVER	2156.0	1000	250	.322	1.20	.60	1.02
OCCUPATION	HOUSEWIFE	AGE	46	LUNG	1613.0	1000	250	.161	.64	.40	.40
RESIDENT	NA	YEARS	NA	LYMPH	3.0	25	10	.036	.09	30.00	.30
STATE	COLORADO			KIDNEY	355.0	100	10	.100	1.00	2.42	.85
CAUSE OF DEATH	DIARETES MELL	YEAR	1971								
HEW CODE NO.	260.0	KG	NA								
CASE NO.	6- 54	SEX	M	LIVER	3078.0	1000	250	.489	1.96	1.81	3.08
OCCUPATION	NET GROCER	AGE	66	LUNG	1375.0	1000	250	.075	.30	.19	.19
RESIDENT	NA	YEARS	NA	KIDNEY	480.0	100	10	.040	.09	1.02	.31
STATE	COLORADO			RIB	18.0	200	50	.006	<MRL>	<MRL>	
CAUSE OF DEATH	PERITONITIS	YEAR	1971	GONAD	68.0	100	10	.030	.38	4.41	.18
HEW CODE NO.	576	KG	NA								
CASE NO.	6- 56	SEX	F	LIVER	1070.0	1000	250	.817	<MRL>	<MRL>	
OCCUPATION	AUF	AGE	86	LUNG	925.0	1000	250	.348	1.39	1.59	1.59
RESIDENT	NA	YEARS	NA	LYMPH	0.0	25	10	.003	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	425.0	100	10	.075	<MRL>	<MRL>	
CAUSE OF DEATH	HEART DISEASE	YEAR	1971	RIB	14.0	200	50	.019	<MRL>	<MRL>	
HEW CODE NO.	420.0	KG	NA								
CASE NO.	6- 58	SEX	M	LUNG	978.0	1000	250	.101	.40	.41	.41
OCCUPATION	NA	AGE	72	LYMPH	5.0	25	10	.023	<MRL>	<MRL>	
RESIDENT	NA	YEARS	NA	KIDNEY	259.0	100	10	.071	.71	2.06	.85
STATE	COLORADO			RIB	30.0	200	50	0.000	<MRL>	<MRL>	
CAUSE OF DEATH	HEART DISEASE	YEAR	1971								
HEW CODE NO.	420.2	KG	NA								
CASE NO.	6- 60	SEX	M	LIVER	1520.0	1000	250	.471	1.48	1.24	2.11
OCCUPATION	SALESMAN	AGE	NA	LUNG	1470.0	1000	250	.114	.47	.32	.32
RESIDENT	NA	YEARS	NA	LYMPH	3.0	25	10	0.000	<MRL>	<MRL>	
STATE	COLORADO			RIB	27.0	200	50	0.000	<MRL>	<MRL>	
CAUSE OF DEATH	EMPHYSEMA	YEAR	1971								
HEW CODE NO.	502.0	KG	NA								
CASE NO.	6- 62	SEX	M	LIVER	1600.0	1000	250	1.327	5.31	3.32	5.64
OCCUPATION	FLR MILLER	AGE	71	LUNG	2450.0	1000	250	.120	.52	.21	.21
RESIDENT	NA	YEARS	NA	LYMPH	7.0	25	10	.008	<MRL>	<MRL>	
STATE	COLORADO			RIB	142.0	200	50	.029	<MRL>	<MRL>	
CAUSE OF DEATH	EMPHYSEMA	YEAR	1971	GONAD	95.0	100	10	0.000	<MRL>	<MRL>	
HEW CODE NO.	527.1	KG	NA								
CASE NO.	6- 64	SEX	M	LIVER	2311.0	1000	250	.292	1.17	.51	.86
OCCUPATION	FARMER	AGE	75	LUNG	908.0	1000	250	.061	.24	.27	.27
RESIDENT	NA	YEARS	NA	LYMPH	8.0	25	10	.014	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	240.0	100	10	.066	.66	2.66	.89
CAUSE OF DEATH	HEART DISEASE	YEAR	1971	RIB	70.0	200	50	.131	.52	7.49	52.40
HEW CODE NO.	420.1	KG	NA								
CASE NO.	6- 66	SEX	M	LIVER	1067.0	1000	250	1.421	5.72	5.36	9.12
OCCUPATION	CARPENTER	AGE	70	LUNG	1510.0	1000	250	.262	1.05	.69	.69
RESIDENT	NA	YEARS	NA	KIDNEY	410.0	100	10	.030	.30	.73	.22
STATE	COLORADO			RIB	120.0	200	50	0.000	<MRL>	<MRL>	
CAUSE OF DEATH	CARCINOMA	YEAR	1971	GONAD	35.0	100	10	.060	.60	17.16	.69
HEW CODE NO.	162.1	KG	NA								
CASE NO.	6- 68	SEX	F	LIVER	1128.0	1000	250	.351	1.48	1.20	2.12
OCCUPATION	HOUSEWIFE	AGE	83	LUNG	950.0	1000	250	.195	.74	.78	.78
RESIDENT	NA	YEARS	NA	LYMPH	9.0	25	10	0.000	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	120.0	100	10	.070	.70	5.83	1.75
CAUSE OF DEATH	MYOCARDIAL INF	YEAR	1971	RIB	145.0	200	50	.057	.23	1.23	8.63
HEW CODE NO.	420.1	KG	NA	GONAD	3.0	100	10	.060	.60	200.00	0.60
CASE NO.	6- 70	SEX	M	LIVER	830.0	1000	250	.351	1.48	1.60	2.88
OCCUPATION	COAL MINR	AGE	69	LUNG	1070.0	1000	250	.223	.89	.83	.83
RESIDENT	NA	YEARS	NA	LYMPH	30.0	25	10	.014	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	157.0	100	10	.007	<MRL>	<MRL>	
CAUSE OF DEATH	PUL EMBOLISM	YEAR	1971	RIB	300.0	200	50	.156	.62	1.64	11.49
HEW CODE NO.	465.0	KG	NA								
CASE NO.	6- 72	SEX	F	LIVER	1320.0	1000	250	.445	1.86	1.40	2.38
OCCUPATION	NA	AGE	80	LUNG	800.0	1000	250	.066	.25	.30	.30
RESIDENT	NA	YEARS	NA	LYMPH	140.0	25	10	0.000	<MRL>	<MRL>	
STATE	COLORADO			KIDNEY	272.0	100	10	.010	<MRL>	<MRL>	
CAUSE OF DEATH	PNEUMONIA	YEAR	1971	RIB	190.0	200	50	.200	.83	4.38	30.65
HEW CODE NO.	493.0	KG	NA								

			TISSUE	WF. WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY OFR ORGAN (DIS/MIN)	ACTIVITY PFR KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	6- 76	SEX M	LIVER	996.0	1000	250	0.000	<MRL*	<MRL*	
OCCUPATION	NA	AGE 66	LUNG	745.0	1000	250	.294	.82	1.10	1.10
RESIDENT	NA	YEARS NA	LYMPH	2.0	25	10	.018	<MRL*	<MRL*	
STATE	COLORADO		KIDNEY	282.0	100	10	.035	.35	1.24	.37
CAUSE OF DEATH	ARTERIOSCLEROSIS	YEAR 1971	RIB	72.0	200	50	.055	.22	3.06	21.39
NEW CODE NO.	420.0	KG NA	GONAD	42.0	100	10	.025	MRL*	MRL*	
CASE NO.	6- 78	SEX M	LIVER	1116.0	1000	250	1.011	4.04	3.62	6.16
OCCUPATION	RETIRED	AGE 26	LUNG	505.0	1000	250	.237	.95	1.87	1.87
RESIDENT	NA	YEARS NA	LYMPH	2.0	25	10	.005	<MRL*	<MRL*	
STATE	COLORADO		RIB	100.0	200	50	.058	.23	2.32	16.24
CAUSE OF DEATH	EMPHYSEMA	YEAR 1971	GONAD	38.0	100	10	.015	<MRL*	<MRL*	
NEW CODE NO.	527.1	KG NA								
CASE NO.	6- 80	SEX M	LUNG	1550.0	1000	250	.074	.30	.20	.20
OCCUPATION	MNTNCEMAN	AGE 60	LYMPH	8.0	25	10	0.000	<MRL*	<MRL*	
RESIDENT	NA	YEARS NA	KIDNEY	280.0	100	10	.034	.34	1.21	.34
STATE	COLORADO		RIB	77.0	200	50	.109	.44	5.66	39.64
CAUSE OF DEATH	PNEUMONITIS	YEAR 1971								
NEW CODE NO.	492.0	KG NA								
CASE NO.	6- 82	SEX NA	LIVER	1876.0	1000	250	.453	1.81	.97	1.64
OCCUPATION	PAINTER	AGE 62	LUNG	1323.0	1000	250	.060	.24	.18	.18
RESIDENT	NA	YEARS NA	LYMPH	6.0	25	10	0.000	<MRL*	<MRL*	
STATE	COLORADO		KIDNEY	688.0	100	10	.033	.33	.48	.34
CAUSE OF DEATH	ARD ANEURISM	YEAR 1971	RIB	107.0	200	50	.067	.27	2.46	17.21
NEW CODE NO.	998.1	KG NA								
CASE NO.	6- 84	SEX M	LIVER	1758.0	1000	250	.048	.19	.11	.19
OCCUPATION	RP INS MAN	AGE 56	LUNG	939.0	1000	250	.294	1.14	1.22	1.22
RESIDENT	NA	YEARS NA	LYMPH	2.0	25	10	.001	<MRL*	<MRL*	
STATE	COLORADO		KIDNEY	468.0	100	10	.041	.43	.92	.28
CAUSE OF DEATH	ARTERIAL OCC	YEAR 1971	RIB	180.0	200	50	.048	.27	1.51	10.58
NEW CODE NO.	332.1	KG NA								
CASE NO.	6- 85	SEX M	LIVER	1014.0	1000	250	.238	.95	.94	1.60
OCCUPATION	MINISTER	AGE 80	LUNG	970.0	1000	250	.366	1.46	1.51	1.51
RESIDENT	NA	YEARS NA	LYMPH	1.5	23	10	0.000	<MRL*	<MRL*	
STATE	COLORADO		KIDNEY	199.0	100	10	.013	<MRL*	<MRL*	
CAUSE OF DEATH	HEART FAILURE	YEAR 1971	RIB	123.0	200	50	.263	1.05	8.55	50.87
NEW CODE NO.	434.1	KG NA								
CASE NO.	6- 88	SEX NA	LIVER	1611.0	1000	250	.466	1.86	1.18	1.97
OCCUPATION	LARDNER	AGE 18	LUNG	1613.0	1000	250	.623	2.49	1.54	1.54
RESIDENT	NA	YEARS NA	LYMPH	2.2	25	10	.006	<MRL*	<MRL*	
STATE	COLORADO		RIB	132.0	200	50	.284	1.14	8.61	60.24
CAUSE OF DEATH	PNEUMONIA	YEAR 1971								
NEW CODE NO.	493.9	KG NA								
CASE NO.	6- 90	SEX M	LIVER	2432.0	1000	250	.497	1.99	.82	1.39
OCCUPATION	FARMER	AGE 75	LUNG	1085.0	1000	250	.021	<MRL*	<MRL*	
RESIDENT	NA	YEARS NA	LYMPH	3.0	25	10	.188	.47	156.67	1.57
STATE	COLORADO		RIB	415.0	200	50	.494	1.98	4.76	33.33
CAUSE OF DEATH	PUL INFARCTION	YEAR 1971								
NEW CODE NO.	465.0	KG NA								
CASE NO.	6- 92	SEX M	LIVER	2784.0	1000	250	.128	.51	.18	.31
OCCUPATION	US MR STDS	AGE 45	LUNG	1119.0	1000	250	.072	.29	.26	.26
RESIDENT	NA	YEARS NA	LYMPH	1.7	25	10	.005	<MRL*	<MRL*	
STATE	COLORADO		RIB	370.0	200	50	.034	.14	.37	2.57
CAUSE OF DEATH	GI HEMORRANGE	YEAR 1971								
NEW CODE NO.	578.2	KG NA								
CASE NO.	6- 94	SEX F	LIVER	850.0	1000	250	.257	1.03	1.21	2.06
OCCUPATION	NA	AGE 79	LUNG	845.0	1000	250	.322	1.29	1.52	1.52
RESIDENT	NA	YEARS NA	LYMPH	3.4	25	10	.005	<MRL*	<MRL*	
STATE	COLORADO		KIDNEY	122.0	100	10	.080	.80	6.56	1.97
CAUSE OF DEATH	CHR BRAIN SYND	YEAR 1971	RIB	255.0	200	50	.194	.78	3.04	21.30
NEW CODE NO.	317.9	KG NA								
CASE NO.	6- 96	SEX F	LIVER	2463.0	1000	250	.092	.37	.15	.25
OCCUPATION	NA	AGE 38	LUNG	1460.0	1000	250	.076	.30	.21	.21
RESIDENT	NA	YEARS NA	KIDNEY	200.0	100	10	.067	<MRL*	<MRL*	
STATE	COLORADO		RIB	285.0	200	50	.071	.28	1.88	6.98
CAUSE OF DEATH	PULMON EMBOLI	YEAR 1971								
NEW CODE NO.	465.0	KG NA								
CASE NO.	6- 98	SEX M	LIVER	1660.0	1000	250	.028	<MRL*	<MRL*	
OCCUPATION	NA	AGE 20	KIDNEY	170.0	100	10	.010	<MRL*	<MRL*	
RESIDENT	NA	YEARS NA	RIB	300.0	200	50	.110	.44	1.47	10.27
STATE	COLORADO		GONAD	50.3	100	10	.032	.32	6.56	.25
CAUSE OF DEATH	DRUG OVERDOS	YEAR 1971								
NEW CODE NO.	889.8	KG NA								

CASE NO.	OCCUPATION	RESIDENT STATE	CAUSE OF DEATH	MEM CODE NO.	SEX	AGE	YEARS	YEAR	KG	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAM WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
6-100	P.O. CLERK	NA	EMPHYSEMA	527.1	M	60	NA	1971	NA	LIVER RIB	2010.0 200.0	1000 200	250 50	1.250 .164	5.04 .66	2.91 3.28	4.26 22.96
6-102	M SHP WKR	NA	KID CANCER	780.0	M	66	NA	1971	NA	LIVER LUNG LYMPH RIB	1479.0 1298.0 150.0	1000 1000 200	250 250 10 50	.838 .122 .007 0.000	3.35 .49 <MRL> <MRL>	2.28 .38 <MRL> <MRL>	3.88 .38 <MRL> <MRL>
6-104	PROFESSOR	NA	MYOCARDIAL INF	420.1	M	66	NA	1971	NA	LIVER LUNG LYMPH KIDNEY RIB	1210.0 1270.0 10.0 320.0 160.0	1000 1000 25 100 200	250 250 10 10 50	1.005 .122 .006 .055 .016	4.02 .60 <MRL> .55 <MRL>	3.32 .38 <MRL> 1.72 <MRL>	5.65 .38 <MRL> .52 <MRL>
6-106	NA	NA	PULMON EMROL	491.9	M	NA	NA	1971	NA	LUNG KIDNEY RIB VERTEBRAE	1700.0 170.0 60.0 210.0	1000 100 200 200	250 10 50 50	.029 .056 .004 .016	<MRL> .56 <MRL> <MRL>	<MRL> 3.29 <MRL> <MRL>	.09 <MRL> <MRL> <MRL>
6-108	PHYSICIST	NA	CAPRN MONKID	902.7	M	49	NA	1971	NA	LIVER LUNG KIDNEY RIB	1270.0 970.0 102.0 50.0	1000 1000 100 200	250 250 10 50	.163 .635 .040 .004	.65 2.54 .60 <MRL>	.51 2.62 3.92 <MRL>	.87 2.62 1.18 <MRL>
6-110	BARRIER	NA	COLON CANCER	153.3	M	83	NA	1971	NA	LIVER LUNG KIDNEY RIB VERTEBRAE	1081.0 810.0 117.0 50.0 225.0	1000 1000 100 200 200	100 250 10 50 50	.421 .093 .049 .007 .007	4.21 .37 <MRL> <MRL> <MRL>	2.24 .46 <MRL> <MRL> <MRL>	3.80 .46 1.26 <MRL> <MRL>
6-112	NA	NA	THYROID CANCER	194.0	F	75	NA	1971	NA	LIVER LUNG RIB	1300.0 559.0 5.0	1000 1000 200	250 250 50	.434 .093 .012	1.74 .37 <MRL>	1.33 .67 <MRL>	2.25 .67 <MRL>
6-114	NA	NA	EMPHYSEMA	434.7	M	65	NA	1971	NA	LIVER LUNG KIDNEY RIB	1200.0 1430.0 172.0 127.0	1000 1000 100 200	250 250 10 50	.420 .257 .049 .019	1.68 1.03 .49 <MRL>	1.40 .71 2.85 <MRL>	2.38 .71 .85 <MRL>
6-116	NA	NA	PULM INFARCT	465.6	F	98	NA	1971	NA	LIVER LUNG KIDNEY VERTEBRAE RIB	990.0 1031.0 100.0 104.0 52.0	1000 1000 100 200 200	250 250 10 50 50	.407 .154 .069 .004 .009	1.63 .62 .69 <MRL> <MRL>	1.64 .60 6.33 <MRL> <MRL>	2.80 .50 1.90 <MRL> <MRL>
6-118	CUSTODIAN	NA	COR THROMBOS	420.1	M	57	NA	1971	NA	LIVER LUNG KIDNEY RIB	1662.0 1090.0 181.0 133.0	1000 1000 100 200	250 250 10 50	.740 .153 .069 0.700	2.96 .61 .69 <MRL>	1.78 .56 3.81 <MRL>	3.03 .56 1.14 <MRL>
6-120	NA	NA	HEARTATTACK	433.1	M	64	NA	1971	NA	LIVER LUNG KIDNEY VERTEBRAE GONAD	1276.0 1582.0 199.0 202.0 50.0	1000 1000 100 200 100	250 250 10 100 10	.247 .113 .070 .176 .030	.99 .65 <MRL> .35 .30	.77 .29 <MRL> 1.72 5.66	1.32 .29 <MRL> 12.02 .23
6-122	NA	NA	PNEUMONIA	491.8	M	81	NA	1971	NA	LIVER LUNG KIDNEY VERTEBRAE GONAD	1050.0 486.0 154.0 166.0 37.0	1000 1000 100 500 100	250 250 10 100 10	.912 .063 .013 .047 .020	3.25 .33 <MRL> .23 <MRL>	3.07 .68 <MRL> 1.42 <MRL>	5.21 .68 <MRL> 9.01 <MRL>

			TISSUE	WEIGHT OF SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	6-124	SEX	F	LIVER	598.0	1000	250	.023	<MRL*	<MRL*	
OCCUPATION	NA	AGE	36	LUNG	1032.0	1000	250	.048	.19	.19	
RESIDENT	NA	YEARS	NA	KIDNEY	122.0	100	10	.060	.60	4.92	1.48
STATE	COLORADO			VERTEBRAE	163.0	200	100	.110	.22	1.35	0.45
CAUSE OF DEATH	CIRRHOSIS	YEAR	1971								
MEM CODE NO.	581.1	KG	NA								
CASE NO.	6-126	SEX	M	LIVER	1072.0	1000	10	.560	56.00	52.24	88.81
OCCUPATION	NA	AGE	44	LUNG	2512.0	1000	10	.290	29.00	11.56	11.56
RESIDENT	NA	YEARS	NA	KIDNEY	196.0	100	10	.026	<MRL*	<MRL*	
STATE	COLORADO			GONAD	47.0	100	10	.043	.43	9.15	.37
CAUSE OF DEATH	PNEUMONIA	YEAR	1971								
MEM CODE NO.	493.9	KG	NA								
CASE NO.	6-128	SEX	M	LIVER	586.0	1000	10	.610	61.00	88.92	151.17
OCCUPATION	IND WKR	AGE	49	LUNG	1534.0	1000	250	.082	.33	.21	.21
RESIDENT	NA	YEARS	NA	KIDNEY	194.0	100	10	.040	.40	2.08	.42
STATE	COLORADO			VERTEBRAE	174.0	200	100	.073	.15	.84	5.87
CAUSE OF DEATH	FRACT SKULL	YEAR	1971	GONAD	50.0	100	10	.048	.48	9.60	.38
MEM CODE NO.	801.0	KG	NA								
CASE NO.	6-130	SEX	M	LIVER	2220.0	1000	10	.150	15.00	6.76	11.49
OCCUPATION	NA	AGE	46	LUNG	1137.0	1000	250	.071	.28	.25	.25
RESIDENT	NA	YEARS	NA	KIDNEY	345.0	100	10	.010	<MRL*	<MRL*	
STATE	COLORADO			VERTEBRAE	140.0	200	100	.091	.18	1.30	9.10
CAUSE OF DEATH	FRACT SKULL	YEAR	1971	GONAD	7.0	100	10	.120	1.20	16.44	.66
MEM CODE NO.	803.0	KG	NA								
CASE NO.	6-132	SEX	M	LIVER	1372.0	1000	10	.910	91.00	66.33	112.76
OCCUPATION	NA	AGE	89	LUNG	820.0	1000	250	.185	.74	.90	.90
RESIDENT	NA	YEARS	NA	KIDNEY	237.0	100	10	.040	.40	1.69	.51
STATE	COLORADO			GONAD	20.0	100	10	.040	.40	20.00	.80
CAUSE OF DEATH	SKULL FRACT	YEAR	1971								
MEM CODE NO.	803.0	KG	NA								
CASE NO.	6-134	SEX	F	LIVER	752.0	1000	250	.296	1.18	1.57	2.68
OCCUPATION	HOUSEWIFE	AGE	54	LUNG	912.0	1000	250	.113	.45	.50	.50
RESIDENT	NA	YEARS	NA	LYMPH	2.2	25	10	.030	.07	36.00	.36
STATE	COLORADO			KIDNEY	113.0	100	10	.090	.90	7.88	2.12
CAUSE OF DEATH	HEART DESFAS	YEAR	1971								
MEM CODE NO.	420.0	KG	NA								
CASE NO.	6-131	SEX	F	LUNG	1201.0	1000	250	.338	1.35	1.23	1.23
OCCUPATION	NA	AGE	57	LYMPH	4.8	25	10	.180	.45	93.75	.94
RESIDENT	NA	YEARS	NA	KIDNEY	99.0	100	10	0.000	<MRL*	<MRL*	
STATE	COLORADO			VERTEBRAE	136.0	500	100	.069	.36	2.54	17.76
CAUSE OF DEATH	NA	YEAR	1971								
MEM CODE NO.	NA	KG	NA								
CASE NO.	6-131	SEX	NA	LIVER	791.0	1000	250	.204	.82	1.63	1.75
OCCUPATION	NA	AGE	40	LUNG	1119.0	1000	250	.257	1.03	.92	.92
RESIDENT	NA	YEARS	NA	KIDNEY	227.0	100	10	.055	.55	2.42	.73
STATE	COLORADO			VERTEBRAE	255.0	500	100	.233	1.16	4.57	31.98
CAUSE OF DEATH	PNEUMONIA	YEAR	1971	GONAD	20.0	100	10	.050	.50	25.00	1.00
MEM CODE NO.	581.0	KG	NA								
CASE NO.	6-140	SEX	F	LIVER	585.0	1000	250	.266	1.06	1.82	3.09
OCCUPATION	NA	AGE	75	LUNG	394.0	1000	250	.138	.55	1.38	1.38
RESIDENT	NA	YEARS	NA	KIDNEY	86.0	100	10	.076	.76	8.84	2.65
STATE	COLORADO			VERTEBRAE	73.0	200	100	.012	<MRL*	<MRL*	
CAUSE OF DEATH	SUICIDE	YEAR	1971								
MEM CODE NO.	E979.	KG	NA								
CASE NO.	6-142	SEX	M	LIVER	534.0	1000	250	.468	1.87	3.51	5.98
OCCUPATION	NA	AGE	21	LUNG	1048.0	1000	250	.083	.33	.32	.32
RESIDENT	NA	YEARS	NA	LYMPH	1.6	25	10	.188	.42	262.50	2.62
STATE	COLORADO			KIDNEY	78.0	100	10	.069	.69	8.85	2.65
CAUSE OF DEATH	GUN WND HEAD	YEAR	1971	VERTEBRAE	105.0	200	100	.041	.08	.77	5.42
MEM CODE NO.	E979.	KG	NA	GONAD	26.0	100	10	0.000	MRL*	MRL*	
CASE NO.	6-144	SEX	M	LIVER	1514.0	1000	250	1.271	5.08	3.35	5.69
OCCUPATION	DENTIST	AGE	84	LUNG	1037.0	1000	250	.118	.47	.46	.46
RESIDENT	NA	YEARS	NA	GONAD	72.0	100	10	.100	1.00	13.89	.56
STATE	COLORADO										
CAUSE OF DEATH	NA	YEAR	1971								
MEM CODE NO.	NA	KG	NA								
CASE NO.	6-146	SEX	M	LIVER	1860.0	1000	250	.580	2.32	1.25	2.72
OCCUPATION	NA	AGE	61	LUNG	1650.0	1000	250	.137	.55	.33	.33
RESIDENT	NA	YEARS	NA	LYMPH	4.7	25	10	.085	.21	45.21	.45
STATE	COLORADO			VERTEBRAE	125.0	200	100	.132	.26	2.11	14.78
CAUSE OF DEATH	GUN WND HEAD	YEAR	1971	GONAD	37.0	100	10	.051	.51	13.78	.55
MEM CODE NO.	E919.9	KG	NA								

		TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE ANALYZED (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN PER WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)		
CASE NO.	6-148	SEX	M	LUNG	1242.0	1000	250	.101	.40	.33	.33
OCCUPATION	NA	AGE	36	LYMPH	5.1	25	10	.068	.17	33.33	.33
RESIDENT	NA	YEARS	NA	KIDNEY	235.0	100	10	-.073	<MRL*	<MRL*	
STATE	COLORADO			VERTEBRAE	99.0	200	100	.067	.13	1.35	9.47
CAUSE OF DEATH	PNEUMONIA	YEAR	1971	GONAD	34.0	100	10	.044	.44	12.94	.52
NEW CODE NO.	581.0	KG	NA								
CASE NO.	6-150	SEX	M	LUNG	1373.0	1000	250	.434	1.74	1.27	1.27
OCCUPATION	NA	AGE	55	LYMPH	2.0	25	10	.157	.39	196.25	1.96
RESIDENT	NA	YEARS	NA	KIDNEY	281.0	100	10	.061	.61	2.17	.65
STATE	COLORADO			VERTEBRAE	282.0	500	100	.096	.48	1.70	11.91
CAUSE OF DEATH	NA	YEAR	1971	GONAD	35.0	100	10	.104	1.04	29.71	1.19
NEW CODE NO.	NA	KG	NA								

TABLE A-IV LASL EMPLOYEES KNOWN TO HAVE A POTENTIAL LOW EXPOSURE TO PLUTONIUM

\*MRL = MINIMUM REPORTING LEVEL = 0.03 D/M PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS, BKG AND RECOVERY STATISTICS

			ISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	1-54	SEX	M LUNG	354.0	200	10	.740	14.80	41.81	41.81
OCCUPATION	MACHINIST	AGE	60 LYMPH	25.4	25	10	1.220	3.85	120.08	1.20
RESIDENT	LCS ALAMOS	YEARS	10							
STATE	NEW MEXICO									
CAUSE OF DEATH	CARDIAC	YEAR	1959							
NEW CODE NO.	434-1	KG	78							
CASE NO.	1-58	SEX	M LIVER	1320.0	1000	100	1.030	10.30	7.80	13.27
OCCUPATION	MACHINIST	AGE	50 LUNG	1020.0	1000	100	1.370	13.70	13.43	13.43
RESIDENT	LCS ALAMOS	YEARS	08 LYMPH	22.0	100	100	.040	<MRL*	2.82	.02
STATE	NEW MEXICO		KIDNEY	222.0	100	100	.020	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	CARDIAC	YEAR	1959 VERTEBRAE	124.0	107	100	0.000	<MRL*	<MRL*	<MRL*
NEW CODE NO.	420-1	KG	NA RIB	163.0	750	100	.020	<MRL*	<MRL*	<MRL*
			SPLEEN	383.0	100	100	.080	.06	.16	.02
CASE NO.	1-68	SEX	M LIVER	2152.0	1000	50	.070	1.40	.65	1.11
OCCUPATION	MATHICIAN	AGE	36 LUNG	712.0	1000	50	.020	<MRL*	<MRL*	<MRL*
RESIDENT	LCS ALAMOS	YEARS	07 LYMPH	22.5	25	10	0.000	<MRL*	<MRL*	<MRL*
STATE	NEW MEXICO		KIDNEY	308.0	250	10	.010	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	BAC ENDOCARDITIS	YEAR	1960							
NEW CODE NO.	430-0	KG	NA							
CASE NO.	1-74	SEX	M LIVER	1354.0	1000	50	.030	.60	.44	.75
OCCUPATION	MACHINIST	AGE	48 LUNG	1380.0	1000	50	.200	4.00	2.90	2.90
RESIDENT	LCS ALAMOS	YEARS	07 LYMPH	2.0	25	10	.030	.07	37.50	.37
STATE	NEW MEXICO		KIDNEY	287.0	100	10	.020	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	CIRRHOSIS	YEAR	1960							
NEW CODE NO.	156-0	KG	NA							
CASE NO.	1-80	SEX	M LIVER	1720.0	1000	50	.040	.80	.47	.79
OCCUPATION	ACCOUNTANT	AGE	54 LUNG	736.0	1000	50	.210	4.20	5.71	5.71
RESIDENT	LCS ALAMOS	YEARS	12 LYMPH	0.5	50	10	.020	<MRL*	<MRL*	<MRL*
STATE	NEW MEXICO		KIDNEY	347.0	100	10	2.870	28.70	80.71	24.81
CAUSE OF DEATH	MULTIPLE MYELOMA	YEAR	1960							
NEW CODE NO.	203-0	KG	83							
CASE NO.	1-94	SEX	F LIVER	1529.0	1000	50	1.200	24.00	15.70	26.68
OCCUPATION	CLERK	AGE	46 LUNG	552.0	1000	50	.260	17.20	29.05	29.05
RESIDENT	LCS ALAMOS	YEARS	11 LYMPH	14.0	50	10	.390	1.95	139.29	1.39
STATE	NEW MEXICO		KIDNEY	224.0	100	10	0.000	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	CORONARY OCCLUSI	YEAR	1960							
NEW CODE NO.	420-1	KG	NA							
CASE NO.	1-126	SEX	M LIVER	1745.0	1000	50	.070	1.40	.89	1.36
OCCUPATION	TECHNICIAN	AGE	40 LUNG	1043.0	1000	50	.070	1.40	1.34	1.34
RESIDENT	LCS ALAMOS	YEARS	03 LYMPH	16.0	50	10	0.000	<MRL*	<MRL*	<MRL*
STATE	NEW MEXICO		KIDNEY	286.0	100	10	0.000	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	SKULL FRACTURE	YEAR	1961							
NEW CODE NO.	803-0	KG	NA							
CASE NO.	1-128	SEX	M LIVER	1776.0	1000	50	.140	2.80	1.58	2.68
OCCUPATION	TECHNICIAN	AGE	31 LUNG	802.0	1000	50	.230	4.60	5.74	5.74
RESIDENT	LCS ALAMOS	YEARS	06 LYMPH	15.0	50	10	.830	.15	10.00	.10
STATE	NEW MEXICO		KIDNEY	307.0	100	10	0.000	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	ASPHYXIA	YEAR	1961							
NEW CODE NO.	962-7	KG	71							
CASE NO.	1-130	SEX	M LIVER	2134.0	1000	50	.140	2.80	1.31	2.23
OCCUPATION	MACHINIST	AGE	58 LUNG	1115.0	1000	50	.290	5.80	5.20	5.20
RESIDENT	LCS ALAMOS	YEARS	11 LYMPH	20.0	50	10	.060	.30	15.00	.15
STATE	NEW MEXICO		KIDNEY	325.0	100	10	0.000	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	LUNG CANCER	YEAR	1961							
NEW CODE NO.	163-0	KG	NA							
CASE NO.	1-132	SEX	M LIVER	2179.0	1000	50	.060	1.20	.55	.94
OCCUPATION	DRAFTSMAN	AGE	32 LUNG	923.0	1000	50	.090	1.80	1.95	1.95
RESIDENT	LCS ALAMOS	YEARS	05 LYMPH	3.0	50	10	0.000	<MRL*	<MRL*	<MRL*
STATE	NEW MEXICO		KIDNEY	410.0	100	10	0.000	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	CORONARY CCC	YEAR	1961							
NEW CODE NO.	420-1	KG	NA							
CASE NO.	1-136	SEX	M LIVER	1741.0	1000	50	.150	3.00	1.72	2.93
OCCUPATION	TECHNICIAN	AGE	58 LUNG	900.0	1000	50	.110	2.20	2.44	2.44
RESIDENT	LCS ALAMOS	YEARS	11 LYMPH	13.0	50	10	0.001	<MRL*	<MRL*	<MRL*
STATE	NEW MEXICO		KIDNEY	280.0	100	10	.730	7.30	25.89	7.77
CAUSE OF DEATH	CORONARY CCC	YEAR	1961							
NEW CODE NO.	420-1	KG	NA							
CASE NO.	1-140	SEX	M LIVER	2316.0	1000	50	.090	1.80	.78	1.32
OCCUPATION	CLERK	AGE	38 LUNG	921.0	1000	50	.600	12.00	13.03	13.03
RESIDENT	LCS ALAMOS	YEARS	14 LYMPH	9.0	50	10	.120	.60	16.67	.67
STATE	NEW MEXICO		KIDNEY	515.0	100	10	.020	<MRL*	<MRL*	<MRL*
CAUSE OF DEATH	PLL INFARCTION	YEAR	1961							
NEW CODE NO.	465-0	KG	NA							

			TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/GRM)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	2- 2	SEX	F	LIVER	1894.0	1000	50	.190	3.80	2.01	3.41
OCCUPATION	CLERK	AGE	32	LUNG	1122.0	1000	50	.040	.80	.71	.71
RESIDENT	LCS ALAMOS	YEARS	16	LYMPH	6.0	50	10	.460	2.30	383.33	3.83
STATE	NEW MEXICCO			KIDNEY	282.0	100	10	.020	<MRL*	<MRL*	
CAUSE OF DEATH	LEUKEMIA	YEAR	1961								
NEW CODE NO.	204.0	KG	NA								
CASE NO.	2- 14	SEX	M	LIVER	1550.0	1000	50	.480	9.60	6.19	10.53
OCCUPATION	ELECTRICIA	AGE	63	LUNG	515.0	1000	50	.845	16.90	32.82	32.82
RESIDENT	LCS ALAMOS	YEARS	15	LYMPH	22.0	50	10	.014	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	252.0	100	10	.043	.43	1.71	.51
CAUSE OF DEATH	THROMBO EMBOLISM	YEAR	1961								
NEW CODE NO.	420.1	KG	NA								
CASE NO.	2- 20	SEX	F	LIVER	2820.0	1000	50	.260	5.20	1.84	3.13
OCCUPATION	HOUSEWIFE	AGE	47	LUNG	510.0	1000	50	.046	.92	1.14	1.14
RESIDENT	LCS ALAMOS	YEARS	2	LYMPH	8.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	255.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	CANCER OF RECTUM	YEAR	1961								
NEW CODE NO.	154.0	KG	NA								
CASE NO.	2- 66	SEX	M	LIVER	2025.0	1000	50	.070	1.40	.69	1.18
OCCUPATION	TECHNICIAN	AGE	40	LUNG	960.0	1000	50	.030	.60	.62	.62
RESIDENT	LCS ALAMOS	YEARS	11	LYMPH	13.0	50	10	.120	.60	46.15	.46
STATE	NEW MEXICCO			KIDNEY	264.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	DRUGS	YEAR	1962	VERTEBRAE	385.0	500	10	0.000	<MRL*	<MRL*	
NEW CODE NO.	972.0	KG	NA								
CASE NO.	2- 70	SEX	M	LIVER	1768.0	1000	50	.050	1.00	.57	.96
OCCUPATION	EL-MECH TE	AGE	54	LYMPH	10.0	50	10	0.000	<MRL*	<MRL*	
RESIDENT	LCS ALAMOS	YEARS	15	KIDNEY	200.0	100	10	.090	.90	3.21	.96
STATE	NEW MEXICCO			VERTEBRAE	291.0	250	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	CARDIAC	YEAR	1962								
NEW CODE NO.	420.1	KG	NA								
CASE NO.	2- 94	SEX	M	LIVER	995.0	1000	50	.180	3.60	3.62	6.15
OCCUPATION	MICROSCOPY	AGE	42	LUNG	825.0	1000	50	.280	5.60	6.79	6.79
RESIDENT	LCS ALAMOS	YEARS	14	LYMPH	8.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	251.0	100	10	.030	.30	1.20	.36
CAUSE OF DEATH	CARDIAC	YEAR	1962								
NEW CODE NO.	434.0	KG	NA								
CASE NO.	2- 98	SEX	M	LUNG	605.0	1000	50	.150	3.00	4.96	4.96
OCCUPATION	PHYSICIST	AGE	56	LYMPH	14.0	50	10	.160	.80	57.14	.57
RESIDENT	LCS ALAMOS	YEARS	16	KIDNEY	179.0	100	10	.020	<MRL*	<MRL*	
STATE	NEW MEXICCO			VERTEBRAE	31.0	250	25	.010	<MRL*	<MRL*	
CAUSE OF DEATH	CANCER	YEAR	1962								
NEW CODE NO.	NA	KG	NA								
CASE NO.	2-126	SEX	M	LIVER	2395.0	1000	25	.082	3.28	1.37	2.33
OCCUPATION	RESIDENT	AGE	52	LUNG	1580.0	1000	25	.146	5.84	3.70	3.70
RESIDENT	LCS ALAMOS	YEARS	07	LYMPH	11.0	50	10	.209	1.06	95.00	.95
STATE	NEW MEXICCO			KIDNEY	364.0	250	10	.061	1.52	4.14	1.24
CAUSE OF DEATH	CIRRHOSIS	YEAR	1962	VERTEBRAE	306.0	500	10	.643	32.15	107.17	750.17
NEW CODE NO.	581.1	KG	79								
CASE NO.	2-132	SEX	M	LIVER	5300.0	1000	50	0.000	<MRL*	<MRL*	
OCCUPATION	REPAIRMAN	AGE	29	LUNG	1650.0	1000	50	0.000	<MRL*	<MRL*	
RESIDENT	LCS ALAMOS	YEARS	10	LYMPH	18.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	478.0	250	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PNEUMONIA	YEAR	1962								
NEW CODE NO.	490.9	KG	NA								
CASE NO.	2-142	SEX	M	LIVER	2055.0	1000	50	0.000	<MRL*	<MRL*	
OCCUPATION	ELECT TECH	AGE	47	LUNG	783.0	1000	50	.006	<MRL*	<MRL*	
RESIDENT	LCS ALAMOS	YEARS	15	LYMPH	21.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	385.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PUL EMBOLISM	YEAR	1963	VERTEBRAE	358.0	500	10	0.000	<MRL*	<MRL*	
NEW CODE NO.	46520	KG	NA								
CASE NO.	2-144	SEX	M	LIVER	1880.0	1000	50	0.000	<MRL*	<MRL*	
OCCUPATION	BLVER	AGE	45	LUNG	1720.0	1000	50	0.000	<MRL*	<MRL*	
RESIDENT	LCS ALAMOS	YEARS	05	LYMPH	26.0	50	10	0.000	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	330.0	100	10	0.000	<MRL*	<MRL*	
CAUSE OF DEATH	PNEUMONIA	YEAR	1963	VERTEBRAE	384.0	500	10	0.000	<MRL*	<MRL*	
NEW CODE NO.	434.2	KG	NA								
CASE NO.	3- 20	SEX	M	LIVER	2745.0	1000	25	0.000	<MRL*	<MRL*	1.04
OCCUPATION	DRAGSMAN	AGE	47	LUNG	710.0	1000	500	.368	.74	1.04	1.04
RESIDENT	LCS ALAMOS	YEARS	10	LYMPH	10.0	50	10	.027	<MRL*	<MRL*	
STATE	NEW MEXICCO			KIDNEY	180.0	100	10	.004	<MRL*	<MRL*	
CAUSE OF DEATH	CANCER	YEAR	1965	VERTEBRAE	120.0	250	10	.028	<MRL*	<MRL*	
NEW CODE NO.	199.0	KG	81								

			TISSUE	WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
CASE NO.	3- 28	SEX	M	LIVER	1150.0	1000	.109	4.36	3.79	6.45
OCCUPATION	AEC PRO FPC	AGE	31	LUNG	1250.0	1000	.853	1.71	1.36	1.36
RESIDENT	LCS ALAMOS	YEARS	10	LYMPH	8.0	50	0.000	<MRL>	<MRL>	
STATE	NEW MEXICO			KIDNEY	210.0	100	.020	<MRL>	<MRL>	
CAUSE OF DEATH	CORONARY THROMB	YEAR	1966	VERTEBRAE	150.0	250	.005	<MRL>	<MRL>	
MEM CODE NO.	420.1	KG	NA							
CASE NO.	3- 44	SEX	M	LIVER	1673.0	1000	.021	<MRL>	<MRL>	2.54
OCCUPATION	MACHINIST	AGE	37	LUNG	1432.0	1000	.091	3.64	2.94	
RESIDENT	LCS ALAMOS	YEARS	13	LYMPH	2.0	50	0.000	<MRL>	<MRL>	
STATE	NEW MEXICO			KIDNEY	292.0	100	0.000	<MRL>	<MRL>	
CAUSE OF DEATH	CANCER	YEAR	1967							
MEM CODE NO.	19990	KG	70							
CASE NO.	3- 58	SEX	M	LIVER	1720.0	1000	.025	<MRL>	<MRL>	4.50
OCCUPATION	PHYSICIST	AGE	41	LUNG	1130.0	1000	.127	5.08	4.50	
RESIDENT	LCS ALAMOS	YEARS	14	LYMPH	10.0	50	.024	<MRL>	<MRL>	
STATE	NEW MEXICO			HEART	330.0	100	.194	1.94	5.88	1.76
CAUSE OF DEATH	CORONARY CCC	YEAR	1967	VERTEBRAE	60.0	250	.441	11.02	183.75	1286.25
MEM CODE NO.	420.1	KG	71	KIDNEY	340.0	100	1.148	1.48	4.35	1.31
CASE NO.	3- 70	SEX	M	LIVER	1728.0	1000	.256	10.24	5.93	10.07
OCCUPATION	TECHNICIAN	AGE	67	LUNG	830.0	1000	.103	4.12	4.96	4.96
RESIDENT	LCS ALAMOS	YEARS	21	LYMPH	5.0	50	.016	<MRL>	<MRL>	
STATE	NEW MEXICO			KIDNEY	330.0	100	.017	<MRL>	<MRL>	
CAUSE OF DEATH	CORONARY CCC	YEAR	1967	VERTEBRAE	50.0	100	.017	<MRL>	<MRL>	
MEM CODE NO.	420.1	KG	NA							
CASE NO.	3- 72	SEX	M	LIVER	1375.0	1000	.148	5.92	4.31	7.32
OCCUPATION	CARETAKER	AGE	43	LUNG	1260.0	1000	3.020	7.64	6.06	6.06
RESIDENT	LCS ALAMOS	YEARS	24	LYMPH	4.0	50	.024	<MRL>	<MRL>	
STATE	NEW MEXICO			KIDNEY	365.0	100	.015	<MRL>	<MRL>	
CAUSE OF DEATH	CIRRHOSIS	YEAR	1968	VERTEBRAE	43.0	100	.037	.37	8.40	60.23
MEM CODE NO.	581.0	KG	64							
CASE NO.	3- 84	SEX	F	LIVER	1380.0	1000	0.000	<MRL>	<MRL>	5.73
OCCUPATION	CLERK	AGE	61	LUNG	1055.0	1000	.151	6.04	5.73	5.73
RESIDENT	LCS ALAMOS	YEARS	21	KIDNEY	255.0	100	.042	.42	1.65	.49
STATE	NEW MEXICO			LYMPH	7.0	50	.032	.16	22.86	.23
CAUSE OF DEATH	CORONARY CCC	YEAR	1968	VERTEBRAE	32.0	100	.002	<MRL>	<MRL>	
MEM CODE NO.	420.1	KG	NA							
CASE NO.	3- 86	SEX	F	LIVER	1710.0	1000	.039	1.56	.91	1.55
OCCUPATION	PRO-PRINTE	AGE	34	LUNG	920.0	1000	.091	3.64	3.96	3.96
RESIDENT	LCS ALAMOS	YEARS	03	LYMPH	5.0	50	.118	.59	118.00	1.18
STATE	NEW MEXICO			KIDNEY	425.0	100	.003	<MRL>	<MRL>	
CAUSE OF DEATH	DIABETES MELL	YEAR	1968	VERTEBRAE	40.0	100	.022	<MRL>	<MRL>	
MEM CODE NO.	260.0	KG	52							
CASE NO.	3- 88	SEX	M	LIVER	2000.0	1000	.154	6.16	3.03	5.24
OCCUPATION	FIREMAN	AGE	43	LUNG	1710.0	1000	.093	3.72	2.18	2.18
RESIDENT	LCS ALAMOS	YEARS	17	LYMPH	8.0	50	.038	.19	23.75	.24
STATE	NEW MEXICO			KIDNEY	350.0	100	.030	.30	.86	.26
CAUSE OF DEATH	CARDIAC	YEAR	1968	VERTEBRAE	55.0	100	.004	<MRL>	<MRL>	
MEM CODE NO.	420.1	KG	NA							
CASE NO.	3-108	SEX	NA	LUNG	970.0	1000	12.340	49.36	50.89	50.89
OCCUPATION	TECHNICIAN	AGE	69	LYMPH	6.0	50	.238	1.19	198.33	1.98
RESIDENT	LCS ALAMOS	YEARS	24	KIDNEY	250.0	100	.336	3.36	13.44	4.03
STATE	NEW MEXICO			VERTEBRAE	120.0	250	.071	.38	1.48	10.35
CAUSE OF DEATH	PNEUMONIA	YEAR	1969							
MEM CODE NO.	432.9	KG	NA							
CASE NO.	3-142	SEX	NA	LUNG	1152.0	1000	6.900	27.60	23.96	23.96
OCCUPATION	ENGINEER	AGE	38	LYMPH	4.0	50	.189	.94	236.25	2.36
RESIDENT	LCS ALAMOS	YEARS	14	KIDNEY	350.0	100	.018	<MRL>	<MRL>	
STATE	NEW MEXICO			VERTEBRAE	130.0	250	.142	.35	2.73	19.12
CAUSE OF DEATH	CARDIAC ARREST	YEAR	1969							
MEM CODE NO.	433.1	KG	82							
CASE NO.	5- 24	SEX	M	LUNG	632.0	1000	.080	.24	.38	.38
OCCUPATION	PHYSICIST	AGE	43	LYMPH	4.0	50	.370	1.85	462.50	4.62
RESIDENT	LCS ALAMOS	YEARS	05	KIDNEY	350.0	100	1.173	11.73	33.51	10.95
STATE	NEW MEXICO			VERTEBRAE	90.0	100	.145	.29	3.22	22.95
CAUSE OF DEATH	HEART ATTACK	YEAR	1969							
MEM CODE NO.	470.1	KG	75							
CASE NO.	5- 40	SEX	F	LUNG	1364.0	1000	1.955	3.91	2.87	2.87
OCCUPATION	MICROSPIST	AGE	55	LIVER	1089.0	1000	2.134	4.27	3.65	6.72
RESIDENT	LCS ALAMOS	YEARS	26							
STATE	NEW MEXICO									
CAUSE OF DEATH	MYCARDIAL INF	YEAR	1969							
MEM CODE NO.	420.2	KG	61							



CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	YEAR	MO	DAY	TISSUE	WEIGHT SAMPLE (GRAM)	VOLUME CP SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER CROM WEIGHT (DIS/MIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
5-64	PHYSICIST	LOS ALAMOS	NEW MEXICO	GAS-HOT WOUND	279.0	M	49	45	1970	NA	NA	LIVER	1286.0	500	250	3.008	6.02	4.70	7.99
												LUNG	652.0	500	250	5.707	11.40	17.43	17.44
												LYMPH	4.0	25	10	.274	.18	46.25	.48
												KIDNEY	265.0	250	10	.639	.47	3.48	1.10
												VERTEBRAE	190.0	100	10	.003	<URL>	<URL>	
5-74	LABORER	LOS ALAMOS	NEW MEXICO	HEPATIC FAIL	583.0	M	44	42	1970	64	64	LIVER	1724.0	500	10	.696	4.86	2.78	4.73
												LUNG	1045.8	900	250	10.460	21.92	29.48	29.98
												LYMPH	20.0	25	10	.292	.98	49.09	.44
												KIDNEY	404.0	100	10	0.200	<URL>	<URL>	
												VERTEBRAE	90.0	200	10	.070	1.40	15.50	129.80
5-80	PRO FRC	LOS ALAMOS	NEW MEXICO	BAN HEART	420.1	M	50	44	1970	03	03	LIVER	2013.0	500	10	.260	13.45	6.66	11.38
												LUNG	577.0	400	250	4.480	8.98	25.50	19.58
												LYMPH	8.0	25	10	.198	.40	61.25	.61
												KIDNEY	343.0	100	10	.214	<URL>	<URL>	
												VERTEBRAE	145.0	200	100	.007	.17	1.39	9.74
5-108	ACC PR FRC	LOS ALAMOS	NEW MEXICO	HEART ATTACK	420.1	M	53	44	1970	NA	NA	LIVER	2958.0	500	90	.501	5.86	2.44	4.15
												LYMPH	4.0	25	10	.641	.25	25.62	.76
												KIDNEY	263.0	100	10	.210	<URL>	<URL>	
												VERTEBRAE	94.0	200	100	.035	.07	.21	4.95
5-114	ACC COMM	LOS ALAMOS	NEW MEXICO	ASTHMA	441.0	M	65	14	1970	74	74	LIVER	1803.0	500	100	.444	2.72	1.19	2.03
												LUNG	1220.0	1900	250	.196	.78	1.64	.64
												KIDNEY	344.0	100	10	.017	<URL>	<URL>	
												VERTEBRAE	56.0	200	100	.063	.13	2.25	15.75
5-118	TECHNICIAN	LOS ALAMOS	NEW MEXICO	CANCER	199.0	F	52	20	1970	02	02	LIVER	1203.0	500	100	.014	4.07	3.22	5.40
												LUNG	889.0	1000	100	.074	.74	1.00	1.00
												LYMPH	8.0	25	10	.021	<URL>	<URL>	
												KIDNEY	200.0	100	10	.305	<URL>	<URL>	
												VERTEBRAE	124.0	200	10	.120	2.56	20.32	142.22
5-158	CHEMIST	LOS ALAMOS	NEW MEXICO	HEART ATTACK	420.1	M	41	11	1971	74	74	LIVER	1640.0	1000	250	1.000	4.36	2.58	5.38
												LUNG	1300.0	1000	250	2.144	9.38	6.08	6.89
												KIDNEY	385.0	100	10	.009	<URL>	<URL>	
												VERTEBRAE	50.0	400	100	0.006	<URL>	<URL>	
7-4	ACCNTF	LOS ALAMOS	NEW MEXICO	CARCINOMA	199.0	M	76	74	1971	NA	NA	LIVER	2820.0	1000	250	.496	1.98	.78	1.28
												LUNG	590.0	1000	250	.705	2.82	4.78	4.78
												LYMPH	4.7	25	10	1.025	2.56	345.21	5.45
												KIDNEY	200.0	100	10	0.008	<URL>	<URL>	
												VERTEBRAE	100.0	250	100	.122	.30	3.05	21.33
7-6	PRO FRC	LOS ALAMOS	NEW MEXICO	CARCINOMA	199.0	M	52	14	1970	03	03	LIVER	1890.0	1000	250	1.101	4.72	2.62	5.46
												LUNG	1320.0	1000	250	.108	.43	.33	.33
												LYMPH	2.6	25	10	.004	<URL>	<URL>	
												KIDNEY	368.0	100	10	0.008	<URL>	<URL>	
												RIB	103.0	250	100	.137	.34	2.33	23.28

TABLE A-V LASL EMPLOYEES KNOWN TO HAVE HIGH POTENTIAL EXPOSURE TO PLUTONIUM

\*APPROXIMATE MINIMUM REPORTING LEVEL = 0.93 DPM PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS+BKG+ACC RECOVERY STATISTICS

CASE NO.	OCCUPATION	RESIDENT	STATE	CAUSE OF DEATH	NEW CODE NO.	SEX	AGE	YEARS	YEAR	MO	DA	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME CF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER COEM HEIGHT (DIS/CM)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANARD PROGRAM (DIS/MIN)
1-39	TECHNICIAN	LCS ALAMOS	NEW MEXICO	TRAILMA	E918-3	M	58	11	1950	75		LIVER LUNG LYMPH KIDNEY VERTEBRAE RIB HEART MUSCLE SPLEEN STERNUM	1050.0 850.0 5.3 270.0 180.0 21.2 490.0 195.5 116.0 122.0	1000 1000 100 100 100 100 100 100 100 100	100 100 10 10 10 10 10 10 10 10	1910.117 528.397 45.101 1.282 43.008 2.462 2.240 1.178 2.089 13.646	1910.117 538.97 441.01 12.82 430.08 2.462 22.40 1.58 20.88 130.46	9834.50 6336.78 85086.23 47.48 2389.33 1161.32 56.08 7.08 180.00 1118.52	16722.05 6336.08 859.06 10.26 16745.23 8129.25 18.80 237.58 27.00 7827.67
1-150	MACHINIST	LCS ALAMOS	NEW MEXICO	CARDIAC	433-1	M	91	88	1950	NA		LIVER LUNG LYMPH KIDNEY	1717.0 1120.0 36.0 332.0	1500 1000 50 100	100 100 10 10	3.463 35.535 3.048 -276	39.63 705.35 10.95 2.76	23.88 272.63 512.58 0.31	24.24 272.63 5.12 2.40
2-4	MP LABORER	LCS ALAMOS	NEW MEXICO	LLNO CANCER	163-0	M	60	11	1961	08		LIVER LUNG LYMPH KIDNEY	1375.0 1360.0 5.0 288.0	1500 1000 50 100	100 100 10 10	5972.200 362.500 64.178 1.400	5972.00 362.80 328.89 14.00	4343.27 2521.81 64170.89 50.62	7183.56 2521.91 641.78 15.00
2-38	MP MONITOR	LCS ALAMOS	NEW MEXICO	CARDIAC	456-1	M	46	13	1962	02		LIVER LUNG LYMPH KIDNEY VERTEBRAE	1015.0 677.0 12.0 127.0 10.0	1000 1500 50 100 50	100 100 10 10 10	290.926 578.838 362.150 -897 1.775	290.20 578.30 1610.75 8.97 8.57	2886.27 8538.11 158895.63 70.43 612.58	4472.05 8570.11 1300.06 21.10 4287.58
2-58	PLUMBER	LCS ALAMOS	NEW MEXICO	CORONARY HEART	426-1	M	39	11	1962	NA		LIVER LUNG LYMPH KIDNEY VERTEBRAE	2713.0 1180.0 8.0 323.0 207.0	1000 1500 50 100 250	100 100 10 10 10	3.417 6.427 -041 -454 -611	36.17 64.27 4.28 4.54 40.00	21.05 55.41 84.88 14.86 40.00	25.70 55.41 0.61 4.22 40.00
2-64	CARPENTER	LCS ALAMOS	NEW MEXICO	CARDIAC	429-1	M	49	NA	1962	NA		LIVER LUNG LYMPH KIDNEY VERTEBRAE	1358.0 889.0 12.0 255.0 107.0	1000 1500 50 100 250	100 100 10 10 10	1.385 23.71 -880 6.888 -042	13.85 23.71 2.80 6.888 1.85	9.61 29.21 298.23 40.00 0.29	16.34 29.31 2.88 40.00 44.01
2-48	ENGINEER	LCS ALAMOS	NEW MEXICO	CARDIAC	428-1	M	42	14	1962	NA		LIVER LUNG LYMPH KIDNEY VERTEBRAE	1664.0 1050.0 7.0 282.6 288.0	1000 1000 50 100 500	100 100 10 10 10	1.016 -069 -325 -882 -066	10.16 6.40 1.87 -42 40.00	6.23 9.07 730.29 1.89 40.00	16.79 6.07 2.39 0.45 40.00
2-88	TRK DRIVER	LCS ALAMOS	NEW MEXICO	LIVER CANCER	156-0	M	52	22	1959	NA		LIVER LUNG LYMPH KIDNEY	3713.0 183.0 12.0 224.0	1000 1000 50 100	100 100 10 10	-822 -790 -387 0.480	0.22 7.00 1.94 40.00	2.21 11.24 148.85 40.00	3.76 11.24 1.99 40.00
2-108	MP MONITOR	LCS ALAMOS	NEW MEXICO	PERITONITIS	434-0	M	44	19	1962	77		LIVER LUNG LYMPH KIDNEY VERTEBRAE	2888.0 546.0 0.0 263.0 358.0	1000 2000 50 100 500	50 100 23 10	-228 -998 -287 -713 -487	6.00 9.98 1.03 7.85 22.85	2.26 16.12 172.58 10.86 64.37	3.73 18.13 1.72 7.75 433.58
2-138	ENGINEER	LCS ALAMOS	NEW MEXICO	CORONARY CCC	420-1	M	47	10	1962	72		LIVER LUNG LYMPH KIDNEY VERTEBRAE	1700.0 1164.0 24.0 378.0 318.0	1000 1000 50 250 500	100 100 10 10 10	40.438 94.999 1.418 4.923 1.138	464.38 340.99 7.85 112.32 58.58	262.61 472.80 293.75 284.51 177.67	446.64 472.80 2.94 88.35 1247.71
3-14	PHYSICIST	LCS ALAMOS	NEW MEXICO	CARDIAC	426-1	M	55	23	1965	77		LIVER LUNG LYMPH KIDNEY RIB	1095.0 1083.0 14.0 188.0 8.0	1050 1050 50 100 50	100 100 10 10 10	43.192 1.814 -146 -180 1.096	431.92 10.16 -73 1.80 9.82	216.58 10.13 45.62 9.42 1984.00	388.88 10.13 -46 2.84 13328.88

CASE NO.	3- 16	SEX	M	LIVER	1095.0	1000	100	76.015	768.15	701.51	1192.56
OCCUPATION	METLURGIST	AGE	50	LUNG	825.0	1000	100	23.551	235.51	379.82	376.82
RESIDENT	LCS ALAMOS	YEARS	19	LYMPH	2.0	50	10	10.738	53.69	2685.00	268.65
STATE	NEW MEXICO			KIDNEY	278.0	100	10	.021	PRC	PRC	
CAUSE OF DEATH	BRAIN TUMOR	YEAR	1959								
NEW CODE NO.	223-2	KG	75								
CASE NO.	3- 22	SEX	M	LIVER	2720.0	1000	100	.300	3.00	1.10	1.88
OCCUPATION	ENGINEER	AGE	53	LUNG	1160.0	1000	500	1.664	3.93	3.79	3.30
RESIDENT	LCS ALAMOS	YEARS	20	LYMPH	29.0	50	10	.063	.41	14.31	.14
STATE	NEW MEXICO			KIDNEY	155.0	100	10	.154	1.54	10.66	3.02
CAUSE OF DEATH	MYOCARDIAL INFARCTION	YEAR	1968	VERTEBRAE	145.0	250	10	.017	PRC	PRC	
NEW CODE NO.	205-0	KG	NA								
CASE NO.	5-130	SEX	M	LUNG	71.0	100	1	6.010	601.00	8464.79	8464.79
OCCUPATION	JR SCATIST	AGE	NA	LYMPH	1.0	25	1	22.550	563.74	56350.00	5637.50
RESIDENT	LCS ALAMOS	YEARS	NA	MUSCLE	1.0	25	1	.230	6.75	5750.00	17500.00
STATE	NEW MEXICO			BIB	25.0	100	1	.110	71.00	3550.00	2650.00
CAUSE OF DEATH	STOPPED SMOKING	YEAR	1959								
NEW CODE NO.	224-2	KG	NA								
CASE NO.	7- 16	SEX	M	LIVER	2002.0	1.00	250	3.313	13.25	6.62	11.25
OCCUPATION	MACHINIST	AGE	62	LUNG	1010.0	1000	250	7.551	30.20	29.67	20.67
RESIDENT	LCS ALAMOS	YEARS	NA	LYMPH	6.2	25	10	.301	1.25	262.02	2.02
STATE	NEW MEXICO			KIDNEY	221.0	100	10	0.000	PRC	PRC	
CAUSE OF DEATH	HEART ATTACK	YEAR	1971	VERTEBRAE	90.0	200	100	.261	.40	4.67	31.27
NEW CODE NO.	420-1	KG	56								

TABLE A-VI SPECIAL CASE STUDY REPLICATE ASSAYS  
 MINIMUM REPORTING LEVEL = 0.03 DPM PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS, BKG AND RECOVERY STATISTICS

CASE NO.	ISSUE	NET WEIGHT (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DPS/MIN)	ACTIVITY PER GRAM (DPS/MIN)	ACTIVITY PER KG (DPS/MIN)	ACTIVITY PER STANDARD ORGAN (DPS/MIN)
1- 30 TECHNICIAN LCS ALAMOS NEW MEXICO 75ALMS E910-3	LIVER	1050.0	1000	100	2053.350	20533.50	20530.00	17001.00
	LIVER	1050.0	1000	100	1762.685	17626.85	1762.00	15403.10
	LUNG	850.0	1000	100	465.808	4658.08	5400.00	5400.00
	LUNG	850.0	1000	100	480.750	4807.50	9250.00	5750.00
	LUNG	850.0	1000	100	574.540	5745.40	4700.00	4700.00
	LUNG	850.0	1000	100	522.045	5220.45	3700.00	3700.00
	LUNG	850.0	1000	100	1013.625	10136.25	11925.00	11925.00
	LUNG	850.0	1000	100	576.640	5766.40	6700.00	6700.00
	LUNG	850.0	1000	100	532.954	5329.54	6700.00	6700.00
	LUNG	850.0	1000	100	534.645	5346.45	5.37.00	3937.00
	LUNG	850.0	1000	100	103.350	1033.50	10500.00	1050.00
	LYMPH	5.3	100	10	15.177	151.77	2020.53	200.25
	LYMPH	5.3	100	10	17.202	172.02	2207.53	220.25
	LYMPH	5.3	100	10	64.695	646.95	8192.03	839.53
	KIDNEY	270.0	100	10	2.674	16.74	62.00	16.00
	KIDNEY	270.0	100	10	.891	8.91	33.00	4.90
	VERTEBRAE	100.0	100	10	53.240	532.40	2000.00	2000.00
	VERTEBRAE	100.0	100	10	46.572	465.72	2750.00	19270.00
	VERTEBRAE	100.0	100	10	25.812	258.12	1430.00	1000.00
	STERNUM	122.0	100	10	10.220	102.20	1200.00	910.00
STERNUM	122.0	100	10	11.045	110.45	920.00	636.77	
BIB	21.2	100	10	2.020	20.20	92.00	600.00	
BIB	21.2	100	10	3.095	30.95	1461.79	1032.55	
BIB	21.2	100	10	2.206	22.06	1069.41	7680.00	
HEART	690.0	100	10	.425	4.25	23.00	4.00	
HEART	690.0	100	10	3.360	33.60	89.00	26.78	
SPLEEN	176.0	100	10	1.560	15.60	160.00	24.36	
SPLEEN	176.0	100	10	2.215	22.15	190.00	26.66	
MUSCLE	199.5	100	10	.279	2.79	13.00	410.55	
MUSCLE	199.5	100	10	.070	.70	1.00	39.16	

TABLE A-VII NEW YORK CITY CASES ANALYZED FOR PLUTONIUM

\*C/M/L = MINIMUM REPORTING LEVEL = 0.01 DPM PER SAMPLE VOL ANALYZED BASED ON TOTAL COUNTS+BRG+ACC RECOVERY STATISTICS

CASE NO.	SEX	AGE	YEARS AA	STATE	CAUSE OF DEATH	NEW CODE NO.	TISSUE	NET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/MIN)	ACTIVITY PER Kg (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
4- 7	M	47	11	NEW YORK	GLNSHOT IN ABD	E618.0	LIVER	410.0	500	25	.050	1.00	2.44	4.15
4- 7	M	47	11	NEW YORK	GLNSHOT IN ABD	E618.0	LUNG	425.0	500	25	.246	4.92	7.47	7.87
4- 7	M	47	11	NEW YORK	GLNSHOT IN ABD	E618.0	OS/AD	23.0	50	10	.014	<M/L	<M/L	<M/L
4- 7	M	47	11	NEW YORK	GLNSHOT IN ABD	E618.0	R/L	155.0	250	10	.030	.75	4.94	33.87
4- 8	M	50	10	NEW YORK	CEREBRAL CONT	R03.0	LIVER	420.0	500	25	0.000	<M/L	<M/L	<M/L
4- 8	M	50	10	NEW YORK	CEREBRAL CONT	R03.0	LUNG	595.0	500	25	.100	3.78	6.35	6.35
4- 8	M	50	10	NEW YORK	CEREBRAL CONT	R03.0	OS/AD	35.0	50	10	.007	<M/L	<M/L	<M/L
4- 8	M	50	10	NEW YORK	CEREBRAL CONT	R03.0	R/L	160.0	250	10	.009	<M/L	<M/L	<M/L
4- 9	M	71	10	NEW YORK	ARTERIOSCLEROSIS	628.3	LIVER	453.0	500	25	.027	<M/L	<M/L	<M/L
4- 9	M	71	10	NEW YORK	ARTERIOSCLEROSIS	628.3	LUNG	905.0	500	25	.130	1.26	1.26	1.26
4- 9	M	71	10	NEW YORK	ARTERIOSCLEROSIS	628.3	OS/AD	25.0	50	10	.053	.26	10.40	.42
4- 9	M	71	10	NEW YORK	ARTERIOSCLEROSIS	628.3	R/L	205.0	250	10	.007	2.17	10.61	74.27
4- 9	M	76	10	NEW YORK	MULTIPLE INJ	E075.0	LIVER	275.0	250	25	.026	<M/L	<M/L	<M/L
4- 9	M	76	10	NEW YORK	MULTIPLE INJ	E075.0	LUNG	480.0	500	25	.263	5.26	10.96	10.96
4- 9	M	76	10	NEW YORK	MULTIPLE INJ	E075.0	OS/AD	34.0	50	10	.020	<M/L	<M/L	<M/L
4- 9	M	76	10	NEW YORK	MULTIPLE INJ	E075.0	R/L	138.0	250	10	.034	.85	6.16	43.12
4- 10	M	44	10	NEW YORK	RABBITURATE POIS	072.0	LIVER	454.0	500	25	.150	3.00	6.48	11.10
4- 10	M	44	10	NEW YORK	RABBITURATE POIS	072.0	LUNG	600.0	500	25	.003	1.26	1.91	1.91
4- 10	M	44	10	NEW YORK	RABBITURATE POIS	072.0	OS/AD	32.0	50	10	.010	<M/L	<M/L	<M/L
4- 10	M	44	10	NEW YORK	RABBITURATE POIS	072.0	R/L	170.0	250	10	.100	4.00	23.53	11.71
4- 12	M	45	10	NEW YORK	BRAIN SKULL WD	050.1	LIVER	287.0	250	25	.049	.49	2.40	4.89
4- 12	M	45	10	NEW YORK	BRAIN SKULL WD	050.1	LUNG	689.0	500	25	.007	<M/L	<M/L	<M/L
4- 12	M	45	10	NEW YORK	BRAIN SKULL WD	050.1	OS/AD	37.0	50	10	.021	<M/L	<M/L	<M/L
4- 12	M	45	10	NEW YORK	BRAIN SKULL WD	050.1	R/L	150.0	250	10	.019	<M/L	<M/L	<M/L
4- 14	M	45	10	NEW YORK	HEART STAB W/BLD	047.1	LIVER	250.0	250	25	.090	.60	2.40	4.80
4- 14	M	45	10	NEW YORK	HEART STAB W/BLD	047.1	LUNG	375.0	500	25	.010	<M/L	<M/L	<M/L
4- 14	M	45	10	NEW YORK	HEART STAB W/BLD	047.1	OS/AD	30.0	50	10	.002	<M/L	<M/L	<M/L
4- 14	M	45	10	NEW YORK	HEART STAB W/BLD	047.1	R/L	100.0	250	10	.053	1.32	8.28	57.87
4- 16	M	30	10	NEW YORK	GUN INJ SKULL	E018.0	LIVER	550.0	500	25	.014	<M/L	<M/L	<M/L
4- 16	M	30	10	NEW YORK	GUN INJ SKULL	E018.0	LUNG	440.0	500	25	.009	<M/L	<M/L	<M/L
4- 16	M	30	10	NEW YORK	GUN INJ SKULL	E018.0	OS/AD	26.0	50	10	.004	<M/L	<M/L	<M/L
4- 16	M	30	10	NEW YORK	GUN INJ SKULL	E018.0	R/L	150.0	250	10	.014	<M/L	<M/L	<M/L
4- 18	M	36	10	NEW YORK	ALTC ACCIDENT	E025.5	LIVER	415.0	500	25	.061	1.22	2.44	5.00
4- 18	M	36	10	NEW YORK	ALTC ACCIDENT	E025.5	LUNG	660.0	500	25	.075	1.50	2.27	2.27
4- 18	M	36	10	NEW YORK	ALTC ACCIDENT	E025.5	OS/AD	30.0	50	10	.045	.22	7.50	.30
4- 18	M	36	10	NEW YORK	ALTC ACCIDENT	E025.5	R/L	100.0	250	10	.018	<M/L	<M/L	<M/L
4- 20	M	40	25	NEW YORK	NA	NA	LIVER	340.0	500	25	.035	.70	2.66	3.50
4- 20	M	40	25	NEW YORK	NA	NA	LUNG	680.0	500	25	.035	.70	1.73	1.83
4- 20	M	40	25	NEW YORK	NA	NA	OS/AD	70.0	50	25	0.000	<M/L	<M/L	<M/L
4- 20	M	40	25	NEW YORK	NA	NA	R/L	285.0	250	10	.005	<M/L	<M/L	<M/L
4- 22	M	23	10	NEW YORK	HEART MYEARTH	434.5	LIVER	955.0	500	25	.103	2.06	2.13	3.63
4- 22	M	23	10	NEW YORK	HEART MYEARTH	434.5	LUNG	1000.0	500	25	.010	<M/L	<M/L	<M/L
4- 22	M	23	10	NEW YORK	HEART MYEARTH	434.5	OS/AD	25.0	50	10	.001	<M/L	<M/L	<M/L
4- 22	M	23	10	NEW YORK	HEART MYEARTH	434.5	R/L	100.0	250	10	.004	<M/L	<M/L	<M/L
4- 24	NA	NA	NA	NEW YORK	NA	NA	LIVER	300.0	250	25	.051	.51	1.70	2.80
4- 24	NA	NA	NA	NEW YORK	NA	NA	LUNG	470.0	500	25	.021	<M/L	<M/L	<M/L
4- 24	NA	NA	NA	NEW YORK	NA	NA	OS/AD	50.0	50	10	.012	<M/L	<M/L	<M/L
4- 24	NA	NA	NA	NEW YORK	NA	NA	R/L	160.0	250	10	.011	<M/L	<M/L	<M/L

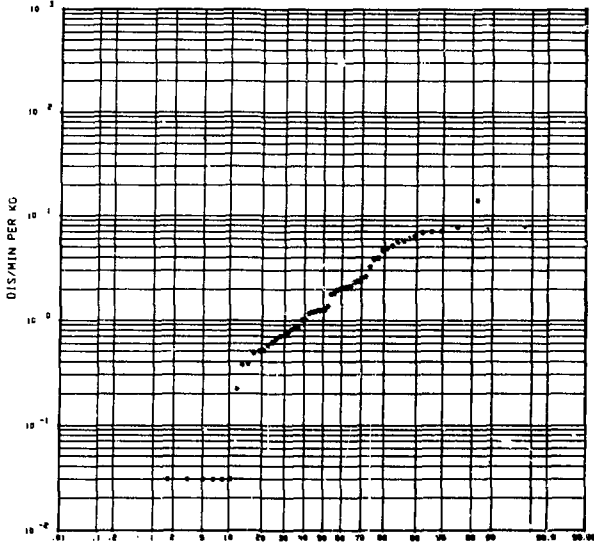
CASE NO.	TISSUE	NET WEIGHT OF SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/GM)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)
4- 24	LIVER	435.0	250	25	.060	.60	1.38	2.34
NA	LUNG	350.0	500	25	.017	<PRL>	<MRL>	
NA	GONAD	40.0	50	10	.011	<PRL>	<MRL>	
NEW YORK	RIR	190.0	250	10	.019	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 28	LIVER	310.0	250	25	.144	1.44	4.45	7.90
NA	LUNG	600.0	500	25	.011	<PRL>	<MRL>	
NA	GONAD	40.0	50	10	0.000	<PRL>	<MRL>	
NEW YORK	RIR	215.0	250	10	0.000	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 30	LIVER	470.0	250	25	.028	<PRL>	<MRL>	
NA	LUNG	435.0	500	25	.041	.42	1.89	1.89
NA	GONAD	30.0	50	10	.008	<PRL>	<MRL>	
NEW YORK	RIR	180.0	250	10	.141	3.52	19.58	137.08
CAUSE OF DEATH								
NEW CODE NO.								
4- 32	LIVER	485.0	250	25	.058	.58	1.20	2.03
NA	LUNG	950.0	500	25	.014	<PRL>	<MRL>	
NA	GONAD	30.0	50	10	.005	<PRL>	<MRL>	
NEW YORK	RIR	435.0	500	10	0.000	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 34	LIVER	365.0	250	25	.033	.33	.90	1.54
NA	LUNG	705.0	500	25	.028	<PRL>	<MRL>	
NA	GONAD	42.0	50	10	.008	<PRL>	<MRL>	
NEW YORK	RIR	155.0	250	10	.001	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 36	LIVER	350.0	250	25	.082	.82	2.34	3.98
NA	LUNG	340.0	250	25	.024	<PRL>	<MRL>	
NA	GONAD	30.0	50	10	.020	<PRL>	<MRL>	
NEW YORK	RIR	220.0	250	10	.005	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 38	LIVER	285.0	100	25	.209	.84	2.93	4.99
NA	LUNG	630.0	500	25	.005	<PRL>	<MRL>	
NA	GONAD	40.0	50	10	0.000	<PRL>	<MRL>	
NEW YORK	RIR	220.0	250	10	.031	.77	3.52	24.66
CAUSE OF DEATH								
NEW CODE NO.								
4- 40	LIVER	278.0	100	25	.062	.25	.92	1.56
NA	LUNG	640.0	500	25	.011	<PRL>	<MRL>	
NA	GONAD	15.0	50	10	0.000	<PRL>	<MRL>	
NEW YORK	RIR	208.0	250	10	.010	<PRL>	<MRL>	
CAUSE OF DEATH								
NEW CODE NO.								
4- 42	LIVER	458.0	250	25	.077	.77	1.71	2.91
NA	LUNG	540.0	500	25	.012	<PRL>	<MRL>	
NA	GONAD	32.0	50	10	.003	<PRL>	<MRL>	
NEW YORK	RIR	270.0	250	10	.052	1.38	4.81	33.70
CAUSE OF DEATH								
NEW CODE NO.								
4- 44	LIVER	460.0	250	25	.118	1.18	2.57	4.36
NA	LUNG	375.0	500	25	.034	.68	1.80	1.80
NA	GONAD	15.0	50	10	.057	.28	19.00	.76
NEW YORK	RIR	255.0	250	10	.040	1.08	3.92	27.45
CAUSE OF DEATH								
NEW CODE NO.								
4- 46	LIVER	540.0	250	25	.005	<PRL>	<MRL>	
NA	LUNG	385.0	500	25	.003	<PRL>	<MRL>	
NA	GONAD	30.0	50	10	.011	<PRL>	<MRL>	
NEW YORK	RIR	242.0	250	10	.185	4.62	19.11	133.78
CAUSE OF DEATH								
NEW CODE NO.								
4- 48	LIVER	388.0	250	25	.057	.57	1.58	2.55
NA	LUNG	795.0	500	25	.029	<PRL>	<MRL>	
NA	GONAD	35.0	50	10	.018	<PRL>	<MRL>	
NEW YORK	RIR	238.0	250	10	.117	2.92	12.72	89.02
CAUSE OF DEATH								
NEW CODE NO.								

			TISSUE	WET WEIGHT SAMPLE (GRAM)	VOLUME OF SAMPLE (CC)	VOLUME SAMPLE ANALYZED (CC)	ACTIVITY PER VOL ANAL (DIS/MIN)	ACTIVITY PER ORGAN WEIGHT (DIS/μIN)	ACTIVITY PER KG (DIS/MIN)	ACTIVITY PER STANDARD ORGAN (DIS/MIN)	
CASE NO.	4- 50	SEX	M	LIVER	340.0	250	25	.051	.51	1.42	2.41
OCCUPATION	NA	AGE	41	LUNG	680.0	500	25	.024	<MRL*	<MRL*	
RESIDENT	NA	YEARS NA	NA	GONAD	58.0	50	10	.002	<MRL*	<MRL*	
STATE	NEW YORK			RIB	250.0	250	16	.018	<MRL*	<MRL*	
CAUSE OF DEATH	MULTIPLE INJ	YEAR	1968								
MEN CODE NO.	996+9	KG	NA								

## APPENDIX B

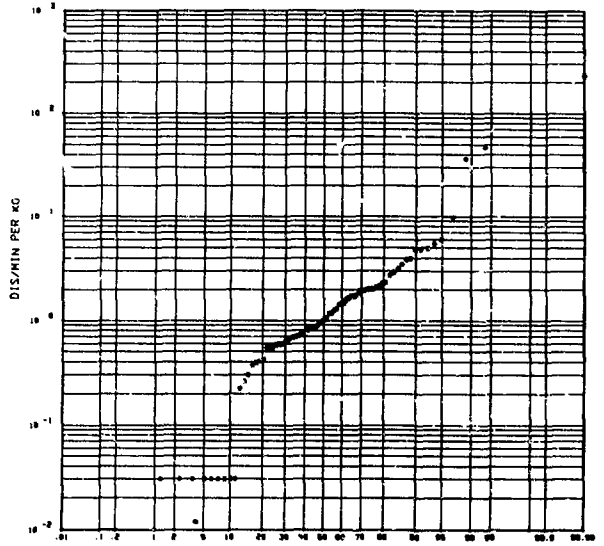
### CUMULATIVE FREQUENCY DISTRIBUTIONS

FIG B-1 LOS ALAMOS CASES, LUNG DATA FROM TABLE A-1



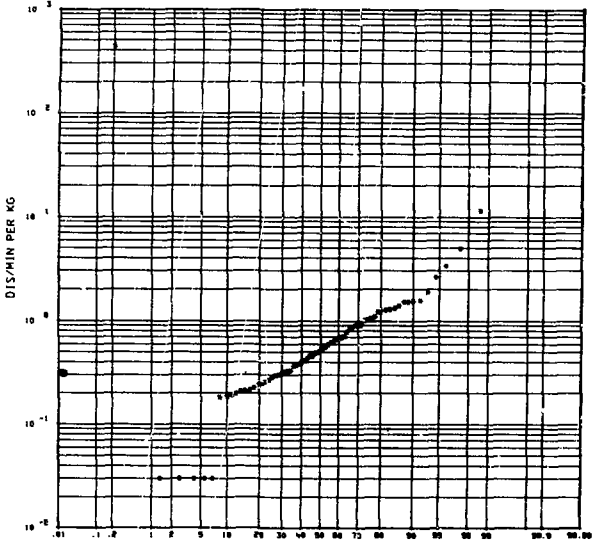
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LUNG TISSUE: CONCENTRATION PER KG  
 NO OF CASES = 57    MEDIAN = 1.3    5TH AND 95 PERCENTILE = 0.1, 10.0

FIG B-2 NEW MEXICO AND OTHER AREAS, LUNG DATA FROM TABLE A-11



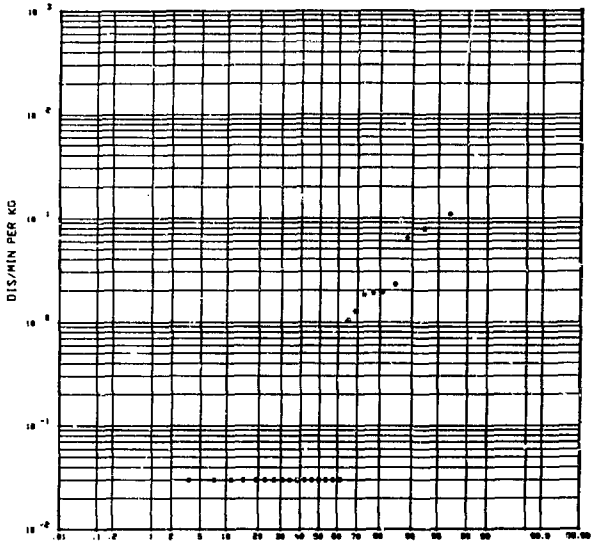
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LUNG TISSUE: CONCENTRATION PER KG  
 NO OF CASES = 76    MEDIAN = 1.0    5TH AND 95 PERCENTILE = 0.1, 7.0

FIG B-3 COLORADO CASES, LUNG DATA FROM TABLE A-III



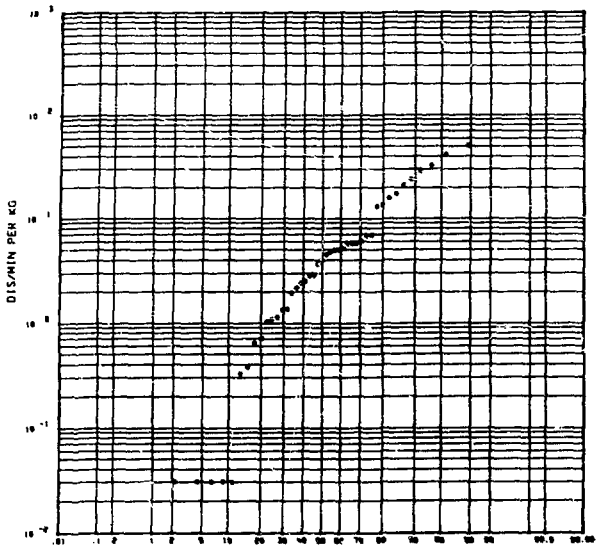
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LUNG TISSUE: CONCENTRATION PER KG  
 NO OF CASES = 66    MEDIAN = 0.5    5TH AND 95 PERCENTILE = 0.1, 2.0

FIG B-4 NEW YORK CITY CASES, LUNG DATA FROM TABLE A-VII



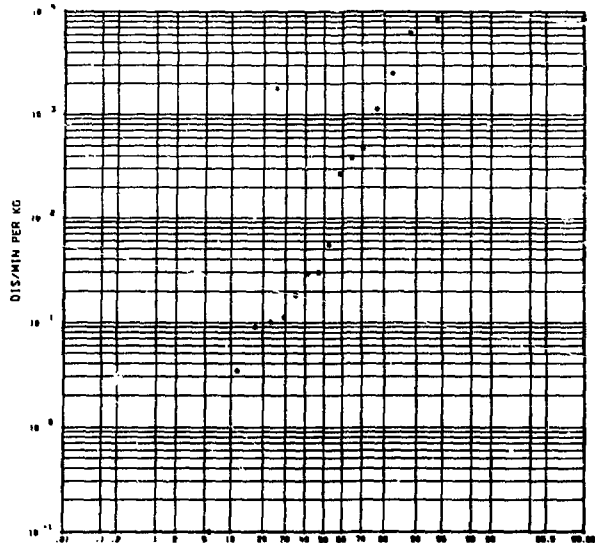
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LUNG TISSUE: CONCENTRATION PER KG  
 NO OF CASES = 26    MEDIAN = 0.4    5TH AND 95 PERCENTILE = 0.1, 10.0

FIG B-5 LASL LOW EXPOSURE CASES. LUNG DATA FROM TABLE A-IV



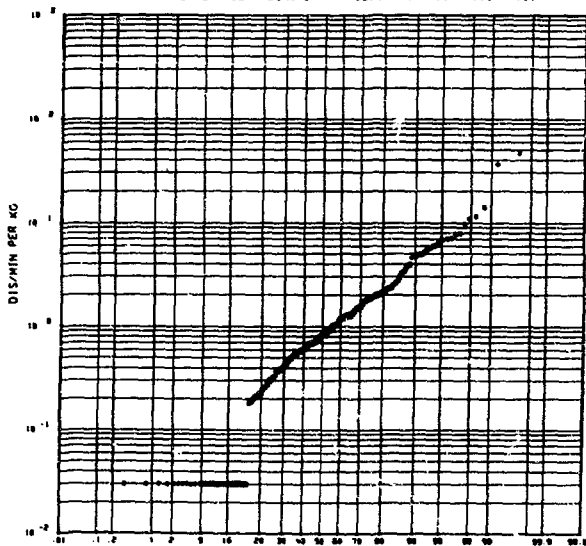
LOG-PROBABILITY PLOT OF Pu IN LUNG TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 44 MEDIAN = 4.0 5TH AND 95 PERCENTILE = 0.1-80.0

FIG B-6 LASL HIGH POTENTIAL CASES. LUNG DATA FROM TABLE A-V



LOG-PROBABILITY PLOT OF Pu IN LUNG TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 15 MEDIAN = 100.0 5TH AND 95 PERCENTILE = 1-0.1E+06

FIG B-7 GENERAL CASES. LUNG DATA TABLES A-I, A-II, A-III, A-V, VI



LOG-PROBABILITY PLOT OF Pu IN LUNG TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 217 MEDIAN = 0.9 5TH AND 95 PERCENTILE = 0.1-6.0



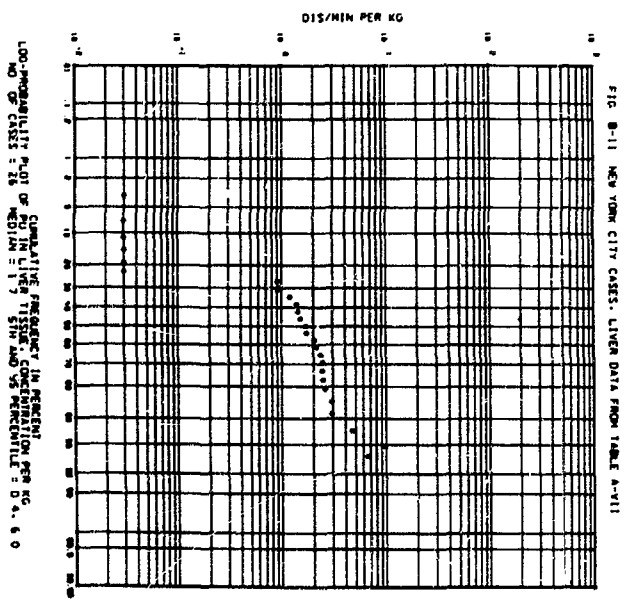
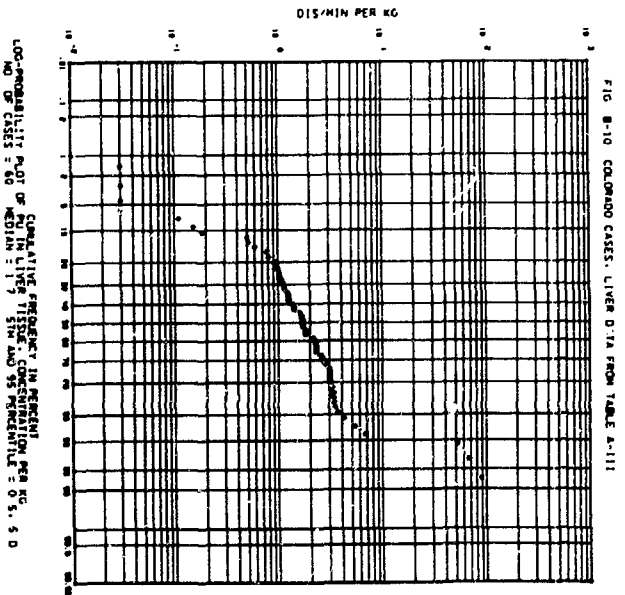
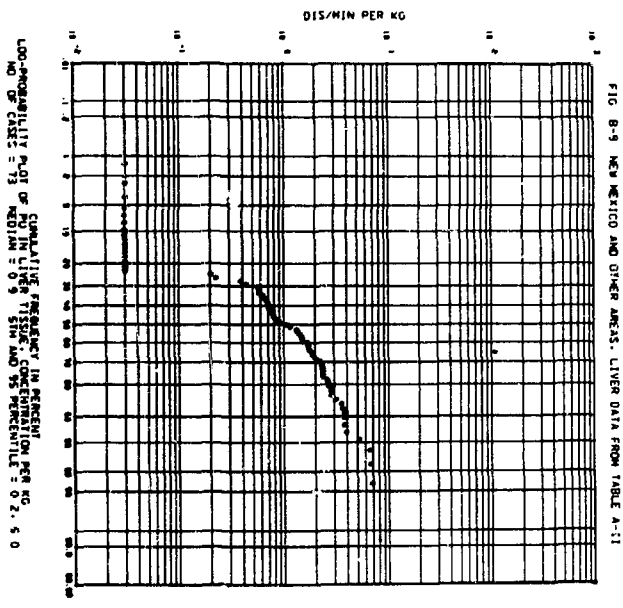
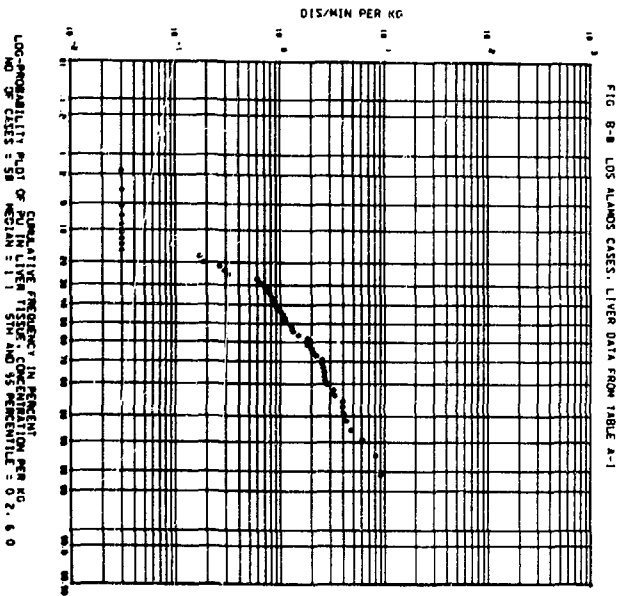
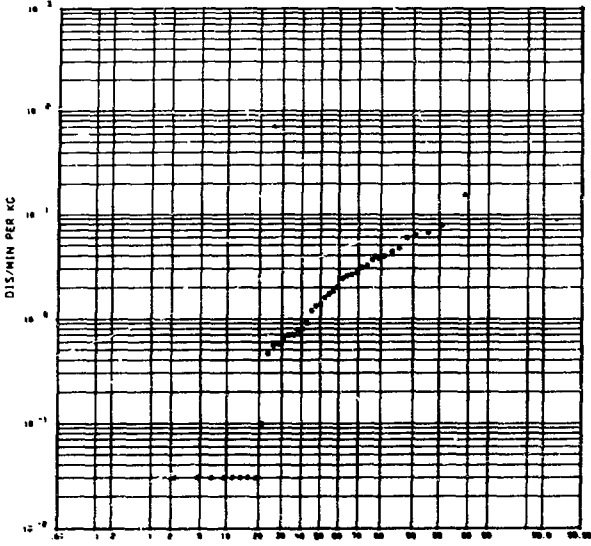
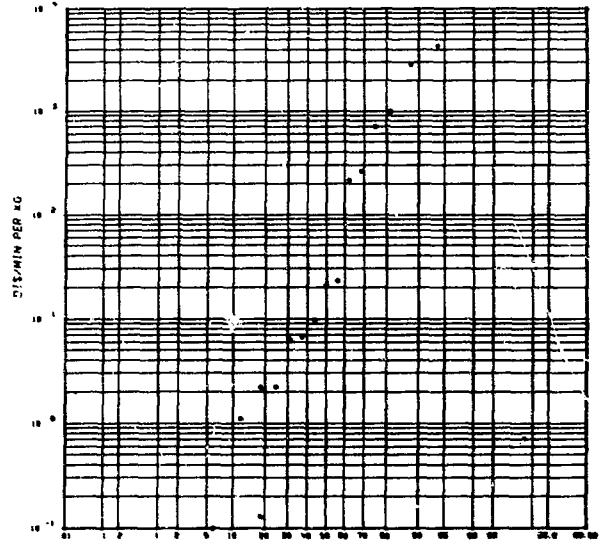


FIG B-12 LASL LOW EXPOSURE CASES. LIVER DATA FROM TABLE A-IV



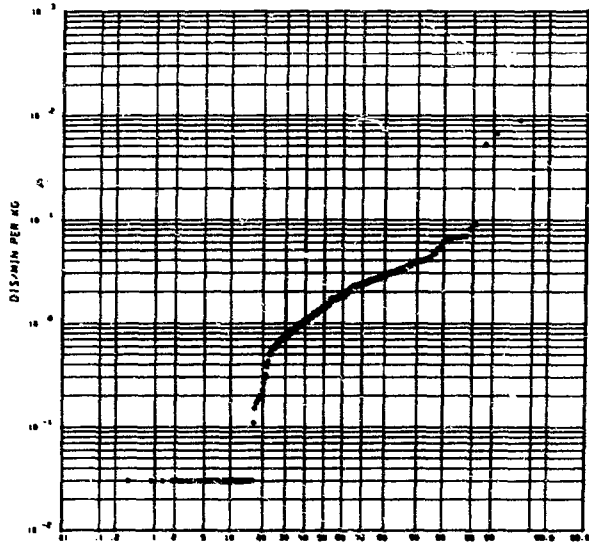
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LIVER TISSUE, CONCENTRATION PER KG  
 NO OF CASES = 41 MEDIAN = 1.0 5TH AND 95 PERCENTILE = 0.1, 10.0

FIG B-13 LASL HIGH POTENTIAL CASES. LIVER DATA TABLE A-V



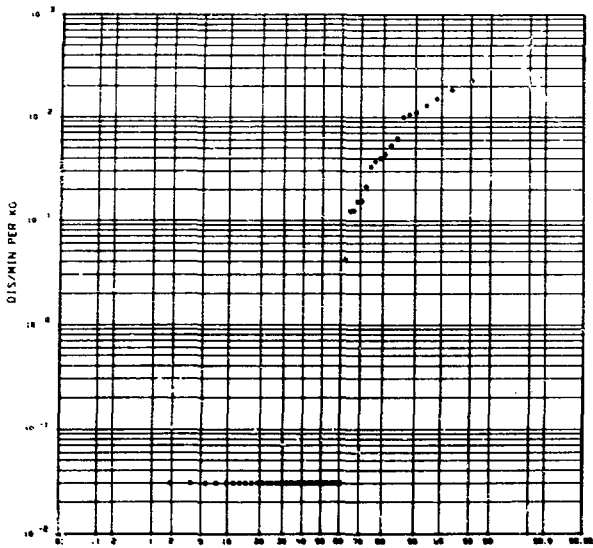
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LIVER TISSUE, CONCENTRATION PER KG  
 NO OF CASES = 15 MEDIAN = 100.0 5TH AND 95 PERCENTILE = 1.0, 1E+04

FIG B-14 GENERAL CASES. LIVER DATA TABLES A-I-A-III-A-III-A-VII



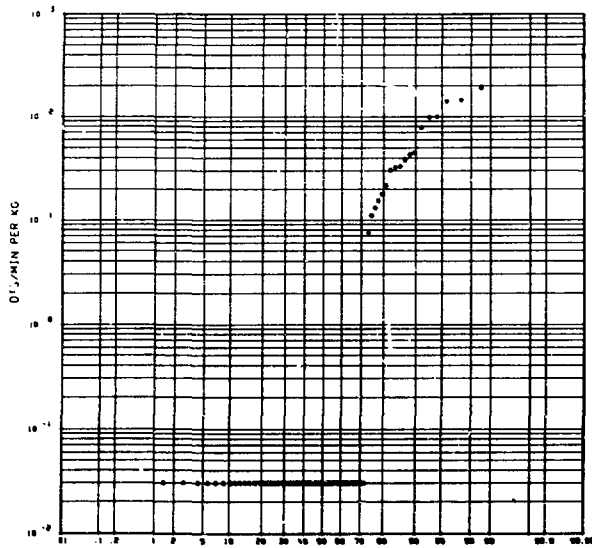
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LIVER TISSUE, CONCENTRATION PER KG  
 NO OF CASES = 217 MEDIAN = 1.4 5TH AND 95 PERCENTILE = 0.3, 5.0

FIG B-15 LOS ALAMOS CASES. LYMPH NODE DATA FROM TABLE A-I



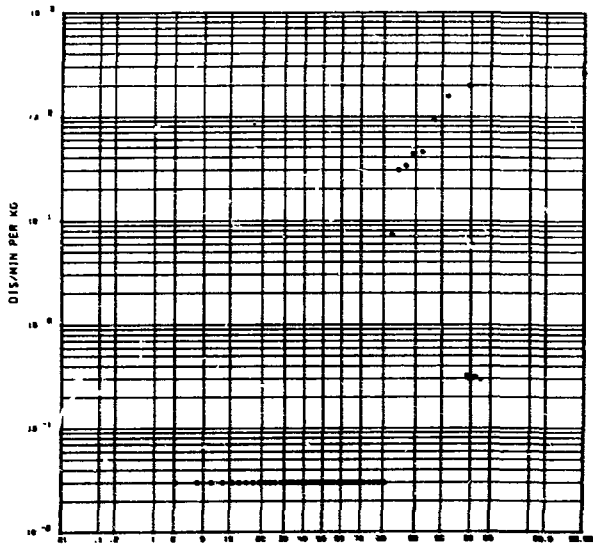
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO OF CASES = 52 MEDIAN = 5.0 5TH AND 95 PERCENTILE = 0.1-200.0

FIG B-16 NEW MEXICO AND OTHER AREAS. LYMPH DATA TABLE A-II



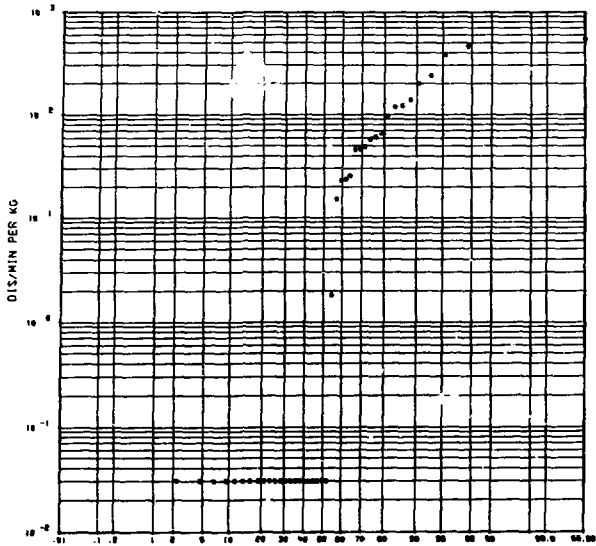
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO OF CASES = 66 MEDIAN = 4.0 5TH AND 95 PERCENTILE = 0.1-100.0

FIG B-17 COLORADO CASES. LYMPH NODE DATA FROM TABLE A-III



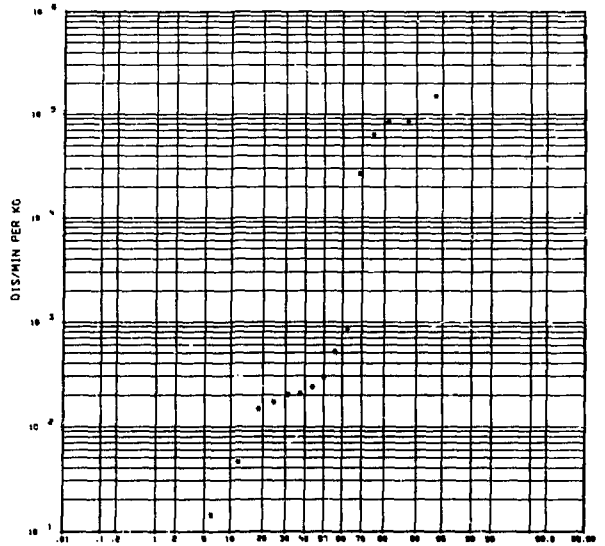
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO OF CASES = 46 MEDIAN = 2.0 5TH AND 95 PERCENTILE = 0.1-100.0

FIG B-18 LASL LOW POTENTIAL CASES, LYMPH NODE DATA FROM TABLE A-IV



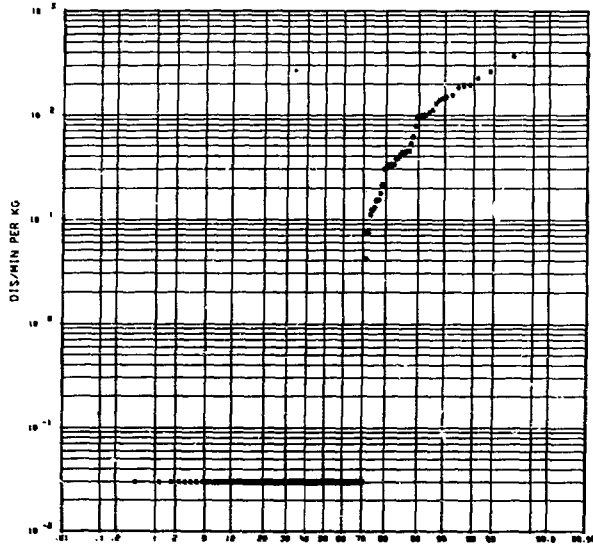
LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 42 MEDIAN = 15.0 5TH AND 95 PERCENTILE = 0.6400

FIG B-19 LASL HIGH POTENTIAL CASES, LYMPH NODE DATA TABLE A-V



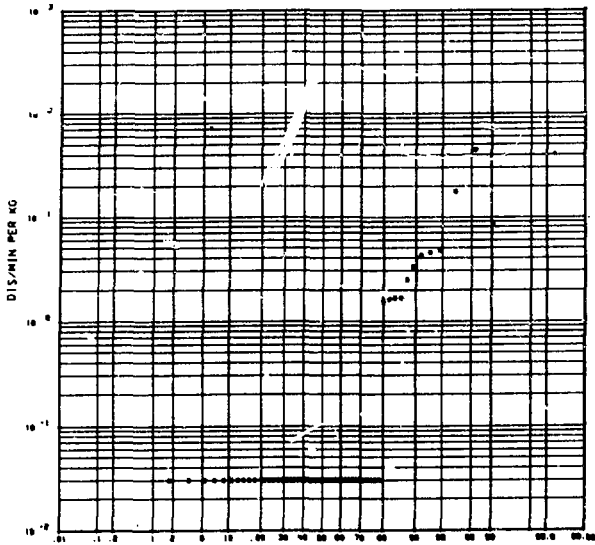
LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 14 MEDIAN = 700.0 5TH AND 95 PERCENTILE = 0.11E+06

FIG B-20 GENERAL CASES LYMPH NODE TABLE A-I.A-II.A-III



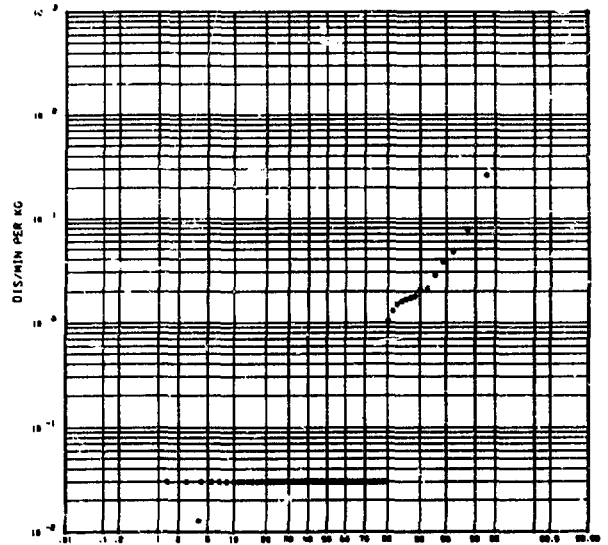
LOG-PROBABILITY PLOT OF PU IN LYMPH NODE TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 164 MEDIAN = 3.0 5TH AND 95 PERCENTILE = 0.1200

FIG 8-21 LOS ALAMOS CASES. KIDNEY DATA FROM TABLE A-1



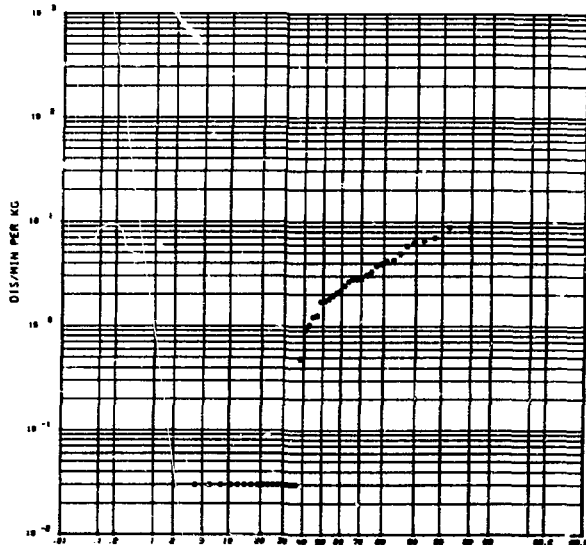
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
 NO. OF CASES = 54 MEDIAN = 0.1 5TH AND 95 PERCENTILE = 0.01, 10.0

FIG 8-22 NEW MEXICO AND OTHER AREAS. KIDNEY DATA FROM TABLE A-11



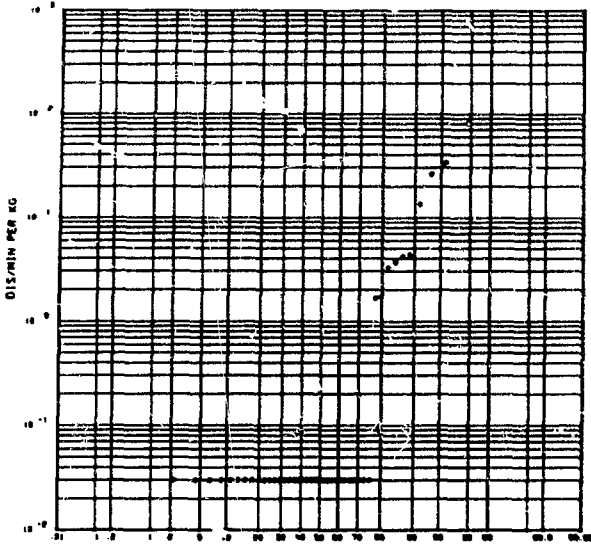
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
 NO. OF CASES = 66 MEDIAN = 0.2 5TH AND 95 PERCENTILE = 0.01, 5.0

FIG 8-23 COLORADO CASES. KIDNEY DATA FROM TABLE A-111



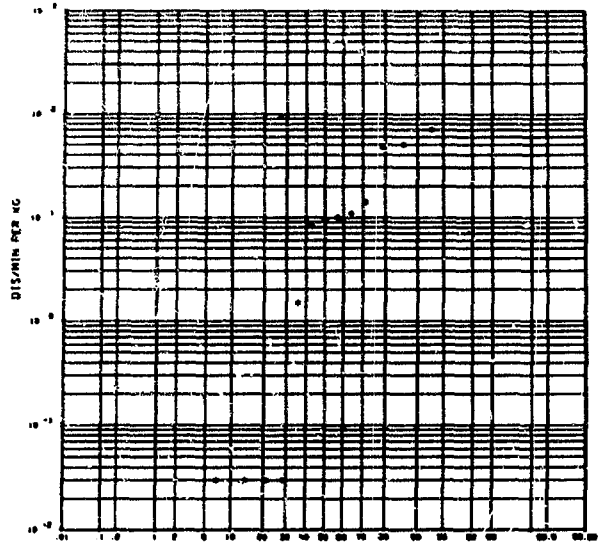
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
 NO. OF CASES = 45 MEDIAN = 1.4 5TH AND 95 PERCENTILE = 0.2, 8.0

FIG B-24 LASL LOW POTENTIAL CASES. KIDNEY DATA FROM TABLE A-IV



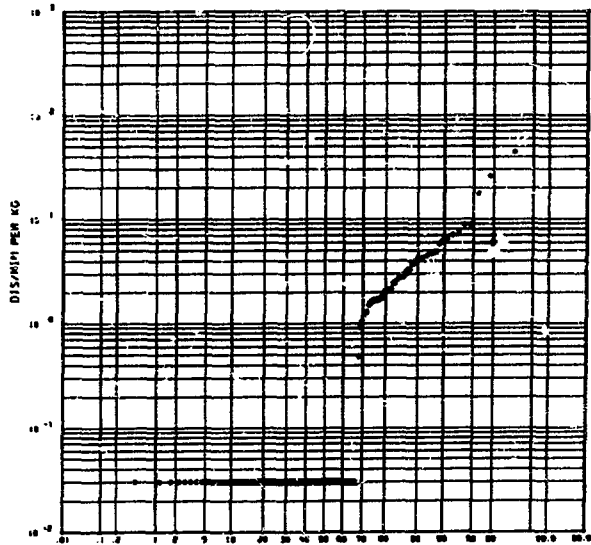
CUMULATIVE FREQUENCY IN PERCENT  
LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
NO. OF CASES = 42 MEDIAN = 0.1 5TH AND 95 PERCENTILE = 0.01, 20.0

FIG B-25 LASL HIGH POTENTIAL CASES. KIDNEY DATA TABLE A-V



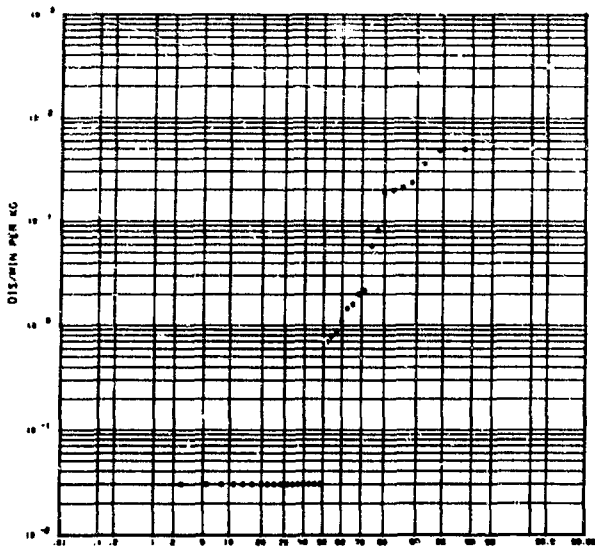
CUMULATIVE FREQUENCY IN PERCENT  
LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
NO. OF CASES = 13 MEDIAN = 10.0 5TH AND 95 PERCENTILE = 0.01, 100.0

FIG B-26 GENERAL CASES. KIDNEY DATA TABLES A-I, A-II, A-III



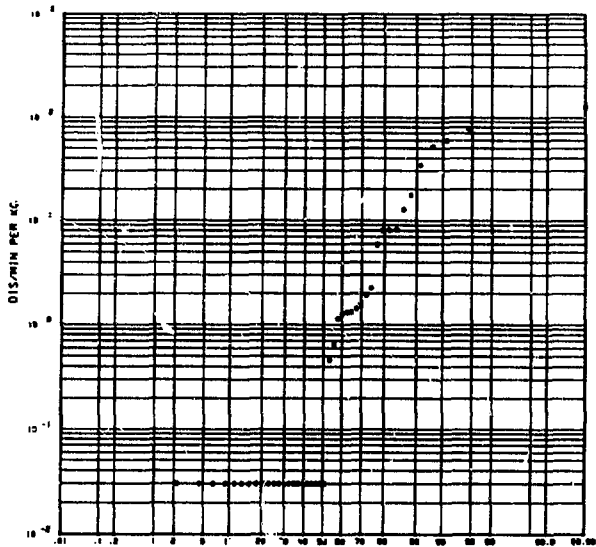
CUMULATIVE FREQUENCY IN PERCENT  
LOG-PROBABILITY PLOT OF PU IN KIDNEY TISSUE, CONCENTRATION PER KG  
NO. OF CASES = 165 MEDIAN = 0.6 5TH AND 95 PERCENTILE = 0.05, 6.0

FIG B-27 LOS ALAMOS CASES. BONE DATA FROM TABLE A-1



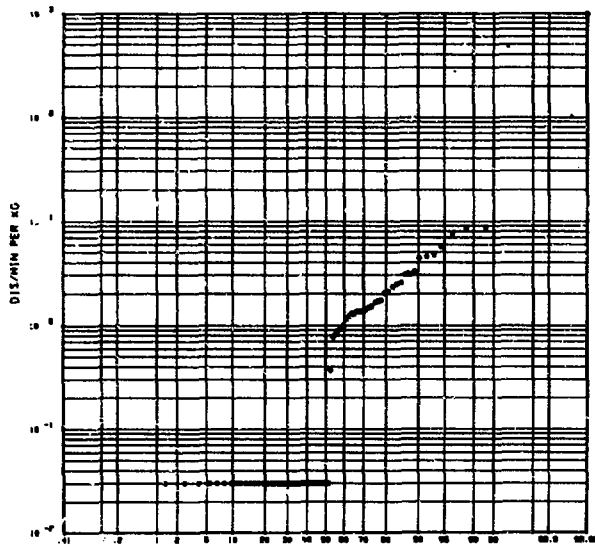
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE - CONCENTRATION PER KG  
 NO. OF CASES = 35 MEDIAN = 0.4 5TH AND 95 PERCENTILE = 0.01, 60.0

FIG B-28 NEW MEXICO AND OTHER AREAS. BONE DATA FROM TABLE A-11



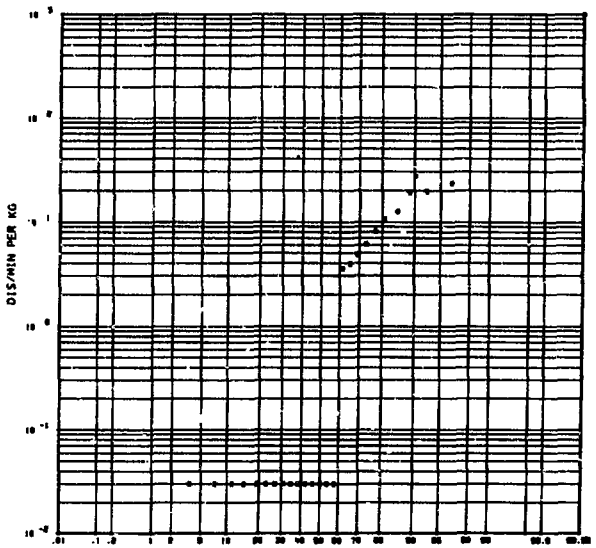
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE - CONCENTRATION PER KG  
 NO. OF CASES = 41 MEDIAN = 0.6 5TH AND 95 PERCENTILE = 0.01, 60.0

FIG B-29 COLORADO CASES. BONE DATA FROM TABLE A-111



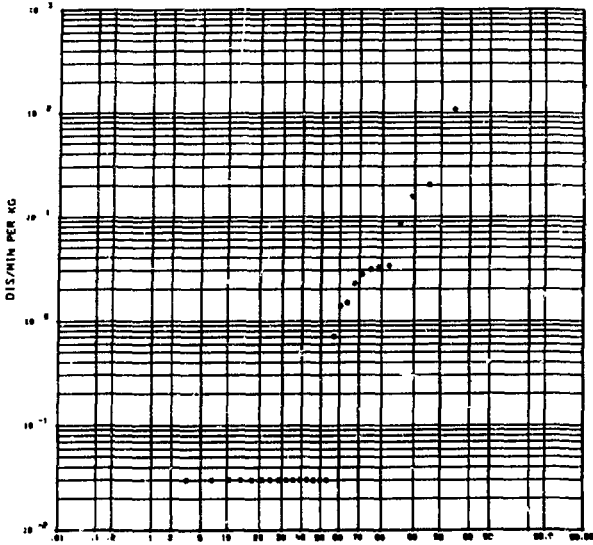
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE - CONCENTRATION PER KG  
 NO. OF CASES = 66 MEDIAN = 0.9 5TH AND 95 PERCENTILE = 0.1, 6.0

FIG B-30 NEW YORK CITY CASES. BONE DATA FROM TABLE A-VII



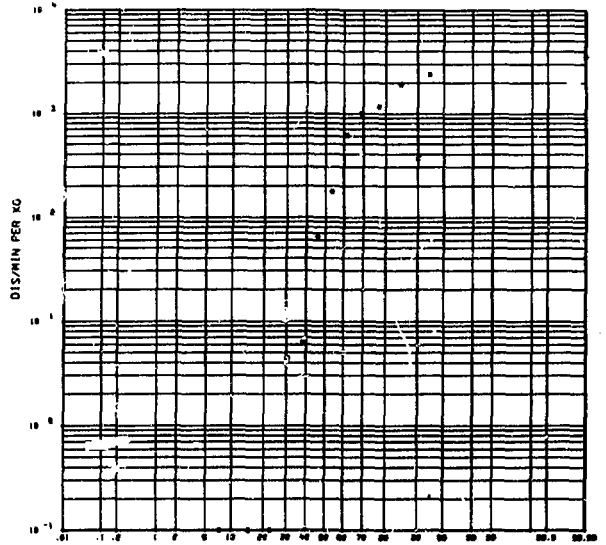
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE TISSUE, CONCENTRATION PER KG  
 NO. OF CASES = 26 MEDIAN = 2.0 5TH AND 95 PERCENTILE = 0.1, 30.0

FIG B-31 LASL LOW POTENTIAL CASES, BONE DATA FROM TABLE A-IV



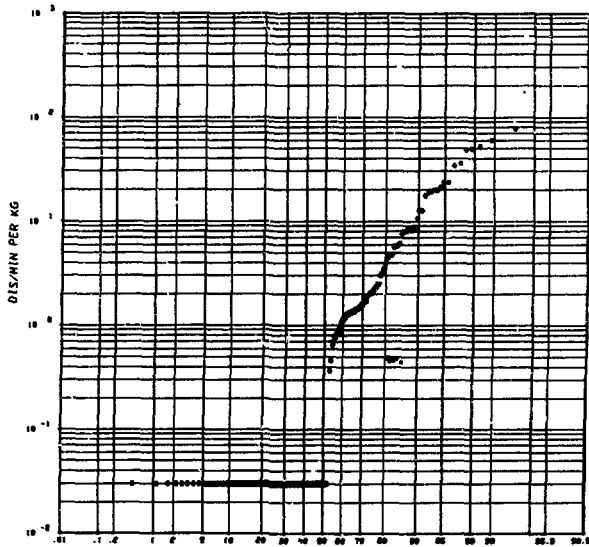
CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 26 MEDIAN = 0.2 5TH AND 95 PERCENTILE = 0.01, 30.0

FIG B-32 LASL HIGH POTENTIAL CASES, BONE DATA TABLE A-V



CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE TISSUE CONCENTRATION PER KG  
 NO. OF CASES = 11 MEDIAN = 50.0 5TH AND 95 PERCENTILE = 0.1, 1E+04

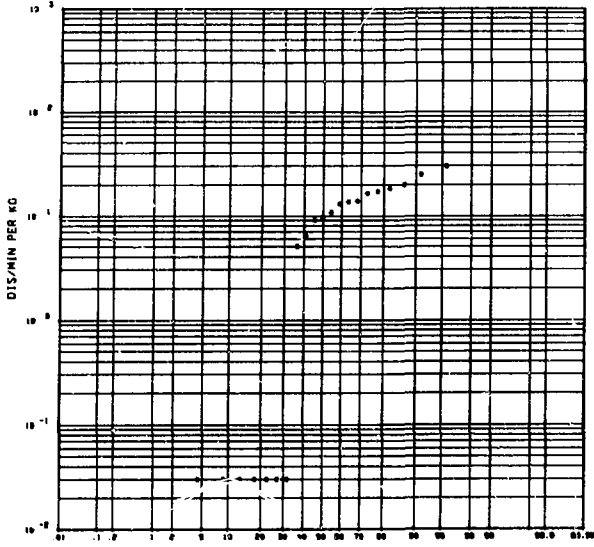
FIG B-33 GENERAL CASES, BONE DATA TABLES A-I, A-II, A-III, A-VII



CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN BONE CONCENTRATION PER KG  
 NO. OF CASES = 166 MEDIAN = 0.6 5TH AND 95 PERCENTILE = 0.02, 20.0

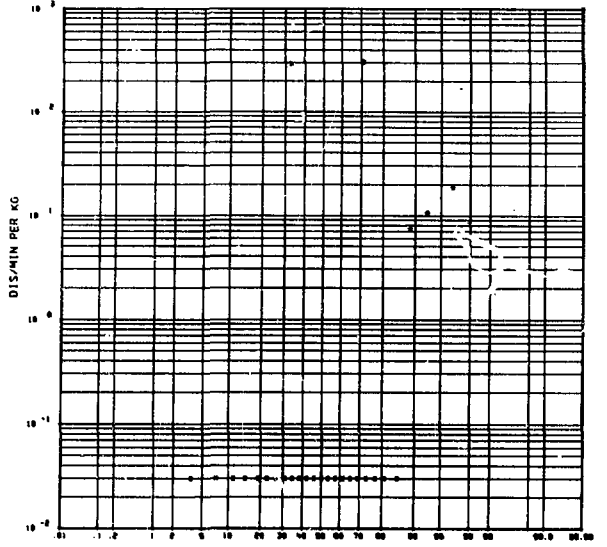


FIG B-34 COLORADO CASES, GONAD DATA FROM TABLE A-III



CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN GONAD TISSUE, CONCENTRATION PER KG  
 NO OF CASES = 23 MEDIAN = 10.0 5TH AND 95 PERCENTILE = 2.0, 30.0

FIG B-35 NEW YORK CITY CASES, GONAD DATA FROM TABLE A-VII



CUMULATIVE FREQUENCY IN PERCENT  
 LOG-PROBABILITY PLOT OF PU IN GONAD TISSUE, CONCENTRATION PER KG  
 NO OF CASES = 26 MEDIAN = 1.0 5TH AND 95 PERCENTILE = 0.07, 10.0

APPENDIX C  
SUMMARY TABLES

TABLE C-I  
50TH PERCENTILE DISTRIBUTION OF PLUTONIUM IN HUMAN TISSUE

Nonoccupationally Exposed	Plutonium Disintegrations per Minute per Kilogram					
	Lung	Liver	Lymph Node	Kidney	Bone	Gonad
Los Alamos	1.3(57) <sup>a</sup>	1.1(58)	5.0(52)	0.1(54)	0.4(35)	b
New Mexico & U. S.	1.0(76)	0.9(73)	4.0(66)	0.2(66)	0.5(41)	b
Colorado	0.5(66)	1.7(60)	2.0(46)	1.4(45)	0.9(65)	10.0(23)
New York	0.4(26)	1.7(26)	b	b	2.0(25)	1.0(26)
All Populations	0.8(217)	1.4(217)	3.0(164)	0.6(163)	0.6(166)	b
<b>Occupationally Exposed<sup>c</sup></b>						
Potential	4.0(44)	1.0(41)	15.0(42)	0.1(42)	0.3(25)	b
High Potential	100.0(15)	100.0(15)	700.0(14)	10.0(13)	50.0(11)	b

<sup>a</sup>(n) number of samples.

<sup>b</sup>Samples not requested.

<sup>c</sup>Data cannot be compared as a group because of differences in type and duration of exposure.

TABLE C-II  
SUMMARY OF PLUTONIUM IN HUMAN TISSUE  
ESTIMATED FROM LOG-PROBABILITY PLOTS OF  
CONCENTRATION PER kg OF TISSUE

Population	Tissue	Median (dis/min/kg)	5th to 95th Percentile of Results (dis/min/kg)
General	Lung	0.8	0.1 to 8.0
Low-Potential		4.0	0.1 to 80.0
High-Potential		100.0	1.0 to 1x10 <sup>4</sup>
General	Liver	1.4	0.3 to 5.0
Low-Potential		1.0	0.1 to 10.0
High Potential		100.0	0.1 to 1x10 <sup>4</sup>
General	Lymph Node	3.0	0.1 to 200.0
Low-Potential		15.0	0.6 to 400.0
High-Potential		700.0	0.1 to 1x10 <sup>6</sup>
General	Kidney	0.6	0.05 to 6.0
Low-Potential		0.1	0.01 to 20.0
High-Potential		1.0	0.01 to 100.0
General	Bone	0.6	0.02 to 20.0
Low-Potential		0.2	0.03 to 30.0
High-Potential		30.0	0.6 to 1x10 <sup>4</sup>

KT:1162(940)