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MBP:GMD

July 27, 1954

[redacted]
or the disclosure of its contents in any manner to an unauthorized person is prohibited.

Dr. Thomas L. Shipman
Health Division Leader
Los Alamos Scientific Laboratory
P. O. Box 1663
Los Alamos, New Mexico

Dear Tom:

Attached is a copy of a memo that I sent to Dr. Bugher on soil analysis. It is obviously only preliminary data but I thought you would find them of interest. The Sr^{89-90} measurements were made at the HICO Laboratory.

Cordially yours,

Gordon M. Dunning
Health Physicist
Biophysics Branch
Division of Biology and Medicine

Enclosure:
Memo, 5/24/54, Dunning to Bugher w/encl.
(Cy. 1B of memo and cy. 1B of encl.)

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BMBP:GMD

July 27, 1954

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RESTRICTED DATA
This document contains information affecting the National Defense of the United States within the meaning of the Atomic Energy Act, 1954. Its transmission or the disclosure of its contents in any manner to an unauthorized person is prohibited.

Dr. C. A. Sondhaus
U. S. Naval Radiological Defense Laboratory
U. S. Naval Shipyard
Hunters Point
San Francisco 24, California

Dear Dr. Sondhaus:

Attached is a copy of a memo that I sent to Dr. Bugher on soil analysis. It is obviously only preliminary data but I thought you would find them of interest. The Sr^{89-90} measurements were made at the NYOO Laboratory.

Cordially yours,

Gordon M. Dunning
Health Physicist
Biophysics Branch
Division of Biology and Medicine

Enclosure:
Memo dtd 5/24/54 (Cy.3B),Dunning to Bugher
w/attachment (Cy. 3B)

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EMBP:GMD

July 27, 1954

[redacted]

Cdr. E. P. Cronkite
Naval Medical Research Institute
Bethesda, Maryland

Dear Gene:

Attached is a copy of a memo that I sent to Dr. Bugher on soil analysis. It is obviously only preliminary data but I thought you would find them of interest. The Sr^{89-90} measurements were made at the NYOO Laboratory.

Cordially yours,

Gordon M. Dunning
Health Physicist
Biophysics Branch
Division of Biology and Medicine

Enclosure:
Memo dtd 5/24/54 (Cy.28),Dunning to Bugher
w/attachment (Cy. 28)

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Dr. John C. Bugher, M.D., Director
Division of Biology and Medicine

May 24, 1954

Gordon L. Dunning, Health Physicist
Biophysics Branch, Division of Biology and Medicine

ESTIMATED Sr^{90} CONTENT IN SOILS FROM THE PACIFIC ISLANDS

SYMBOL: BMBP:GMD

The attached sheet gives a summary of the data on the Sr^{89}-Sr^{90} and Sr^{90} for soils taken from the Pacific Islands indicated.

The Sr^{89}-Sr^{90} activity was measured and then the Sr^{90} activity was estimated from this by the use of the Hunter and Dallou tables. Likewise, the total activity was measured and the activity of Sr^{89}-Sr^{90} was estimated from this by the use of Hunter and Dallou tables. We may thus compare the Sr^{89}-Sr^{90} activity as measured with the estimated amounts calculated from the total activity.

The highest Sr^{90} value was 0.5 μc/sq.ft. on the Island of Naen. The highest Sr^{90} value on Rongelap Island was 1.0×10^{-2} μc/sq.ft. It has been estimated* that if one were to exist entirely on plant life grown in soils with 1,000 lbs. of calcium per acre and containing 15 mc/acre of Sr^{90} (about 1 μc/sq.ft.), over a period of years there would be deposited a body burden of 1 μc of Sr^{90}. In the case of these soils the following points should be indicated:

(1) Only a small fraction of the natives' food supply comes from plant life grown on the Islands. (Most of their diet consists of fish and food supplies purchased from visiting ships.)

(2) The calcium content is significantly greater than 1,000 lbs. per acre which will correspondingly reduce the Sr^{90} uptake.

(3) Weathering may be expected to eliminate a small amount of the activity.

These data would indicate that the Sr^{90} activity of the soils would not be a deterrent to the return of the natives to their home Islands.

*Private communication from Dr. L.A.Dean, U.S.Dept. of Agriculture, to Dr. Gordon Dunning, dtd 4/23/54.

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Location	Sr^{90} ($\mu c/ft^2$) (Estimated from $Sr^{89}-Sr^{90}$ Activity)	$Sr^{89}-Sr^{90}$ ($\mu c/ft^2$) (Measured)	Total Activity ($\mu c/ft^2$) (Measured)	$Sr^{89}-Sr^{90}$ ($\mu c/ft^2$) (Estimated from Total Activity)
Likiep	[illegible]	[illegible]	[illegible]	$1.2x10^{-2}$
Jemo	[illegible]	$1.2x10^{-2}$	[illegible]	$3.0x10^{-2}$
Ailuk	[illegible]	[illegible]	[illegible]	$1.0x10^{-1}$
Mejuit	[illegible]	[illegible]	[illegible]	$1.1x10^{-1}$
Ormed	[illegible]	[illegible]	[illegible]	$3.2x10^{-2}$
Kaven	[illegible]	[illegible]	[illegible]	$1.6x10^{-2}$
Wotho	[illegible]	[illegible]	[illegible]	$7.8x10^{-3}$
Rongelap				
(North [illegible])	[illegible]	[illegible]	[illegible]	6.2
(Central)	[illegible]	[illegible]	[illegible]	4.0
(1 mi. [illegible])	[illegible]	[illegible]	[illegible]	$5.0x10^{-1}$
(So. [illegible])	[illegible]	[illegible]	[illegible]	$4.5x10^{-1}$
[illegible]riirippu	[illegible]	[illegible]	[illegible]	23.0
[illegible]niwetok	[illegible]	[illegible]	[illegible]	5.0
Kabelle	[illegible]	[illegible]	[illegible]	20.0
Utirik	[illegible]	[illegible]	[illegible]	5.3
Bikar	$6.6x10^{-3}$	[illegible]	[illegible]	$3.3x10^{-1}$
Eniwetak	[illegible]	[illegible]	[illegible]	$3.0x10^{-1}$
Aifo	[illegible]	[illegible]	[illegible]	$6.1x10^{-2}$
Naen **	[illegible]			

*All data as of May 5, 1954, except island of [illegible]riirippu where date is May 20.
**Estimated from [illegible] survey readings with [illegible]riirippu. Highest fallout [illegible] any island [illegible].

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