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THE ENRICO FERMI INSTITUTE
FOR NUCLEAR STUDIES

410268

July 13, 1956

Dr. W. F. Libby
U. S. Atomic Energy Commission
Washington 25, D. C.

Dear Bill:

I have enclosed a summary of results that the Nuclear Science and Engineering Corporation obtained for 26 Rongelap Atoll resurvey samples. I am not in a position to comment on the results since I do not have complete sample information. The NRDL sample description information is also enclosed. I have confidence in the NSEC activity data, but I have advised NRDL to recheck the reasonableness of the calcium concentrations based on their experience for similar samples.

The data for the four Brawley, California plant samples which were collected on January 5, 1956 are listed below.

<u>CL No.</u>	<u>Plant Type</u>	<u>Sr⁹⁰, S.U.</u>
1059-P	Lettuce	0.39 ± 0.05
1060-P	Broccoli	0.25 ± 0.08
1061-P	Peas	1.34 ± 0.08
1062-P	Alfalfa	2.13 ± 0.22

The results show the low concentrations we would expect in view of the low soil level. The large variations in Sunshine Units for these plant samples are not surprising considering variations in root depth and period of growth and the possible wide scatter of Sr⁹⁰ distribution in dry areas.

My secretary and I are in the process of compiling Chicago Bulletin No. 12, which will be the final report we make before closing out the lab.

Sincerely yours,

Ed
E. A. Martell

Enclosures

US DOE ARCHIVES	
326 US ATOMIC ENERGY	
RG	COMMISSION
Collection	<i>Former Comm Libby's Files</i>
Box	<i>2242</i>
Folder	<i>Sunshine Corres. - Chicago Data</i>

Department of Energy
Historian's Office
ARCHIVES

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STATUS VERIFIED *UNCL*
BY *J. J. J. J.* DATE *5/25/81*

Nuclear Science and Engineering Corporation

P. O. Box 10901, PITTSBURGH 36, PENNSYLVANIA

HOMESTEAD 2-4000

Sr⁹⁰ ANALYSIS REPORT ON 26 NRDL SAMPLES

<u>CL</u> <u>Sample No.</u>	<u>NRDL</u> <u>No.</u>	<u>Part</u>	<u>g Ca</u> <u>in Sample</u>	<u>dpm in</u> <u>Sample</u>	<u>S. U.</u>
1072	737		0.080	44.3 ± 3.8	251 ± 24
1073A	1052C	muscle	0.030	3.0 ± 0.7	4.6 ± 1.2
1073B	1052C	gill	0.051	18.5 ± 1.5	164 ± 13
1073C	1052C	bone	0.330	6.9 ± 0.8	9.6 ± 1.1
1073D	1052C	head	0.209	7.1 ± 1.0	15.5 ± 2.2
1074	1509		0.159	3.7 ± 1.0	10.6 ± 3.0
1075	1513		0.031	1750 ± 70	(2.57±0.10)×10 ⁴
1076A	1538	bone	0.465	18.8 ± 1.0	18.4 ± 1.1
1076B	1538	viscera	0.263	21.3 ± 1.4	36.8 ± 2.9
1076C	1538	skin	0.273	20.2 ± 1.8	33.6 ± 3.3
1076D	1538	head	0.415	15.2 ± 0.9	16.7 ± 1.1
1077A	1544	head	1.42	39.2 ± 3.1	12.5 ± 1.0
1077B	1544	bone	1.30	205 ± 9	71.6 ± 3.9
1077C	1544	skin	1.22	19.1 ± 1.7	7.1 ± 0.7
1077D	1544	gill	0.125	3.4 ± 0.4	12.5 ± 1.8
1078A	1621	head	1.74	32.2 ± 2.6	8.4 ± 0.7
1078B	1621	muscle	0.435	8.1 ± 2.1	8.5 ± 2.2
1079	1629		0.475	70.3 ± 4.9	67.3 ± 5.4
1080	1630		0.860	42.7 ± 5.1	22.6 ± 2.8
1081	1638		0.448	329 ± 23	334 ± 26
1082	842	9.22g soil	3.17	5800 ± 290	830 ± 42
1083	847	10.88g soil	2.04	0.63 ± 0.24	0.14 ± 0.05
1084	580	1.02g ash	0.231	40.2 ± 2.0	79.0 ± 4.7
1085	524	0.438g ash	N.D. 0.12 ^{1/2} g ash	3.84 ± 0.19	19800
1086	1027	87 ml water	0.32 ⁺	2.2 ⁺ ± 0.7	0.025 ± 0.008 31±10
1087	1028	91 ml water	0.32 ⁺	1.5 ± 0.2	0.016 ± 0.002 20±3

Received at the
Physical Office

* Ca, 0.87% by wt.

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List of Samples for Sr⁹⁰ Analysis

<u>NRDL No.</u>	<u>Animal</u>	<u>Name</u>	<u>Tissue</u>	<u>Wet wt.</u>	<u>Ash wt.</u>	<u>Sample Aliquot</u>
737	Helmet Crab			271 gm.		25/125
1502 C	Goat	Muscle		87 gm.		10/50
	Fish	Gill		12 gm.		10/50
		Bone		29 gm.		25/100
		Head		26 gm.		10/50
1509	Killer Clam					25/100
1513	Killer Clam			882 gm.		50/250
1538	Red Snapper Fish	Bone		141 gm.		25/250
		Viscera		98 gm.		10/250
		Skin		89 gm.		50/250
		Head		60 gm.		50/250
1544	Green & Red Parrot Fish	Head		280 gm.		100/1000
		Bone		176 gm.		50/250
		Skin		223 gm.		50/250
		Gill		56 gm.		10/50
1621	Snapper Fish	Head		219 gm.		100/500
		Muscle		511 gm.		25/100
1629	Sand Crab			46 gm.		25/125
1630	Grouper Fish			169 gm.		50/250
1638	Spider Snail			56 gm.		25/250
842	Soil					
847	Soil					
580	Arrow Root			305	5.239	$\frac{1.012}{5.239}$
524	Coconut Meat			450	1.448	$\frac{0.437}{1.448}$
1027	Water, Ocean					
1028	Water, Lagoon					