

10 March 1954

SUBJECT: Report on Soil and Water Sampling Mission

410414

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1. In compliance with your oral instructions, the undersigned visited Wot Erikub, Maloolap, Wotho, Majuro Atolls in the Marshall Islands 5 through 7 March 1954 for the purpose of obtaining earth and drinking water samples, and of measuring gamma ray dose rates, and also checked the radiological condition of the S. ROQUE on its arrival at Majuro 7 March 1954.

2. The first four atolls were visited by Marshallese interpreter Takushi and the writer by means of an UF-1 amphibious aircraft. Majuro was reached by C-47. Erikub might have been omitted since it was not inhabited, being property of the Wotje tribe which goes there only occasionally to gather copra. (This was unknown until after the visit.)

3. At each atoll, only the principal inhabited island was visited. At each visited island an effort was made to compose a representative soil average by collecting into a single container several samples, each approximately one square foot of area and one inch depth. Water samples were collected from the principal sources currently in use. The gamma dose rates are averages for the inhabited areas.

4. With regard to certain minor discrepancies between the survey methods by Major R. D. Crea and the writer; it was originally planned to perform the survey jointly, and when it became advisable to separate and survey different atolls, time remained for discussion of details of techniques.

5. Gamma-ray dose rates on Wotje and on Erikub are each the average of MX-5 and AN/PDR-39 average readings which agreed reasonably well. The MX-5 was rendered inoperative when the rubber life raft was swamped by surf on the first attempt at launch from the beach at Erikub. Following the Wotho survey, the PDR-39 developed a temperature-dependent reading of 0.4 - 2 mr/hr, so that later readings in this range are of very dubious reliability.

6. The following tabulation summarizes the atoll survey. S is Soil, W is Water Sample:

<u>ATOLL</u>	<u>ISLAND</u>	<u>DATE</u>	<u>TIME</u>	<u>SAMPLE NO</u>	<u>MR/HR & SAMPLING</u>
WOTJE	ORMED	5 Mar	1600	S5	3.5 mr/hr, 1-beach, 3-mid-village, 1-back village.
				W6	½ well plus ½ catch basin.
ERIKUB	ERIKUB	5 Mar	1715	S6	1.5 mr/hr. 1-mid-village, 1 on path to beach. No inhabitants, no water supply found.

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<u>ATOLL</u>	<u>ISLAND</u>	<u>DATE</u>	<u>TIME</u>	<u>SAMPLE NO</u>	<u>MR/HR & SAMPLING</u>
MALOELAP	KAVEN	6 Mar	1130	S7	1.8 mr/hr, 2-village, 2-path to beach.
				W12	Well water.
				W13	From catch basin.
WOTHO	WOTHO	6 Mar	1615	S8	0.8 mr/hr, 1 by well; 2-mid-village.
				W9	Well water (no rain in catch basin for 2 mo.)
MAJURO	ULIGA	7 Mar	1200	S9	0.5 mr/hr, 4 from near Admin Bldg.
				W10	Tap water.

7. Pacific Micronesian Line S.S. "ROQUE", Master: Lawrence Blanc, home port Guam, left Ebeye 0840 M on 1 March, entered channel to Utirik Lagoon about 1200 M on 2 March, and anchored in Lagoon at 1524 M on 2 March; docked at Majuro (Ulga Is.) 1630M on 7 March. Readings (mr/hr) after docking: 2-3 inside main deck structure, 10 on open deck, 5-8 in sleeping quarters on upper deck, 10-30 on rope and canvas. Prior radiation levels cannot be estimated because of rain squalls and uncertainty about when decks last washed. Master was advised to have decks washed down as soon as convenient. He was told that the activity would not hurt anyone, but that it was undesirable to have it around longer than necessary.

8. RECOMMENDATIONS: Future visits to Erikub and Maloelap should not be attempted by UF-1 except under conditions of greater urgency. The writer's prior experience in such operations is very limited, but from his own observations plus the remarks made by those better qualified to judge, it appears that a fair amount of risk is involved.

9. Especially notable was the very cooperative attitude of the Navy personnel at Kwajalein and the Marshall District Administrative Officials at Majuro in supporting this mission.

1 Incl:
 Marshall Islands Atoll
 Samples collected by T. N.
 White, 5-7 March 1954

/s/ T. N. White
 DR. T. N. WHITE
 Health Division
 LASL

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MARSHALL ISLANDS ATOLL SAMPLES COLLECTED BY T. N. WHITE, 5-7 MARCH 1954

Earth samples were collected as follows:

At each island visited several samples were dug and put into the same one-gallon "ice-cream carton". Each sample (i.e. each digging) approximated one square foot to a depth of one inch. The number and locations of the samples were selected to represent, as well as could be judged, an average of the areas used by the inhabitants, after the samples were mixed in the carton. Areas that were unusually shaded or unshaded by trees were avoided. The large "pebbles" in the composite represent coral gravel from "main street" through the village.

Water samples were selected according to the principal source in current use

Inclosure 1

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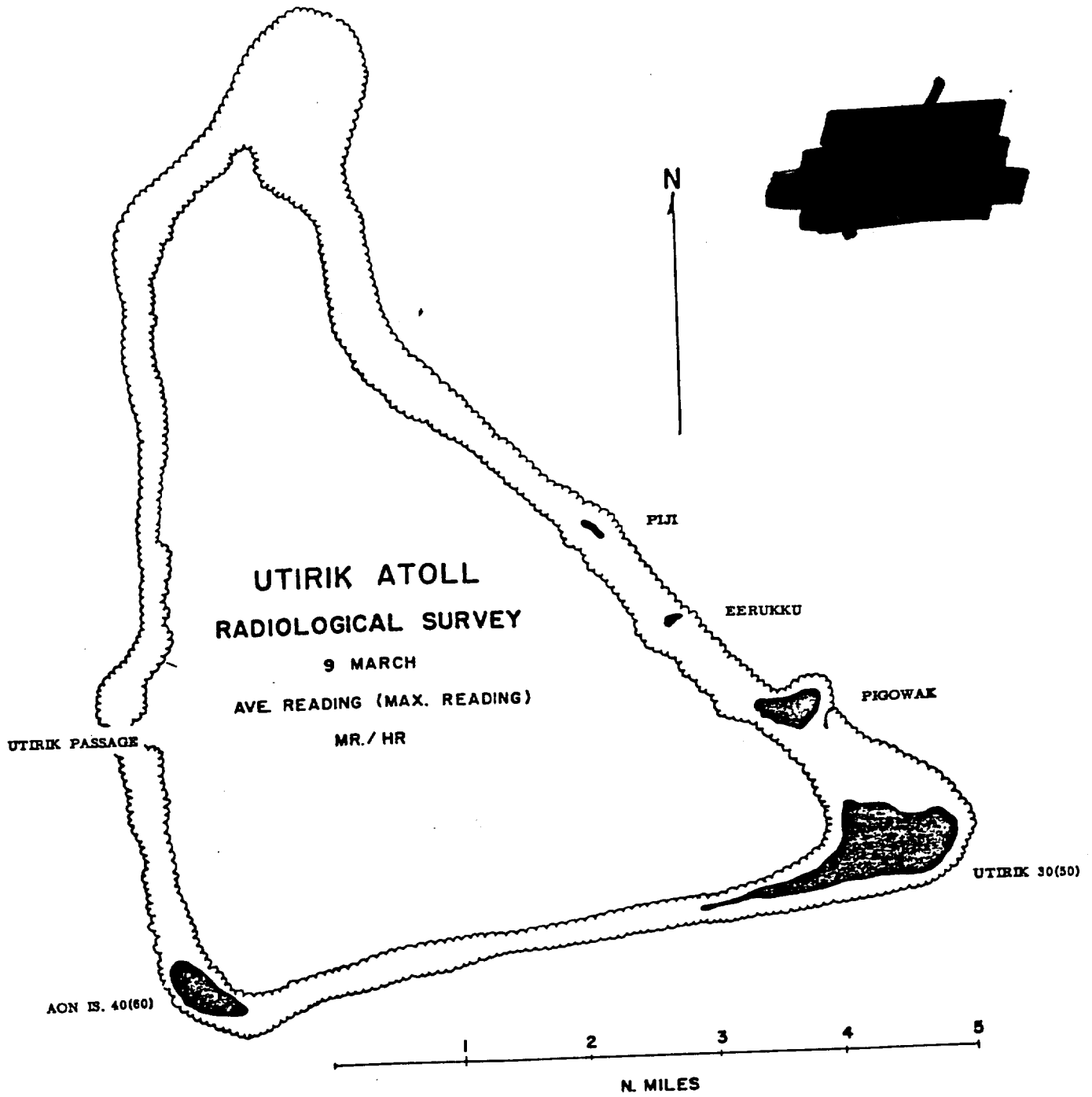


FIG. 2

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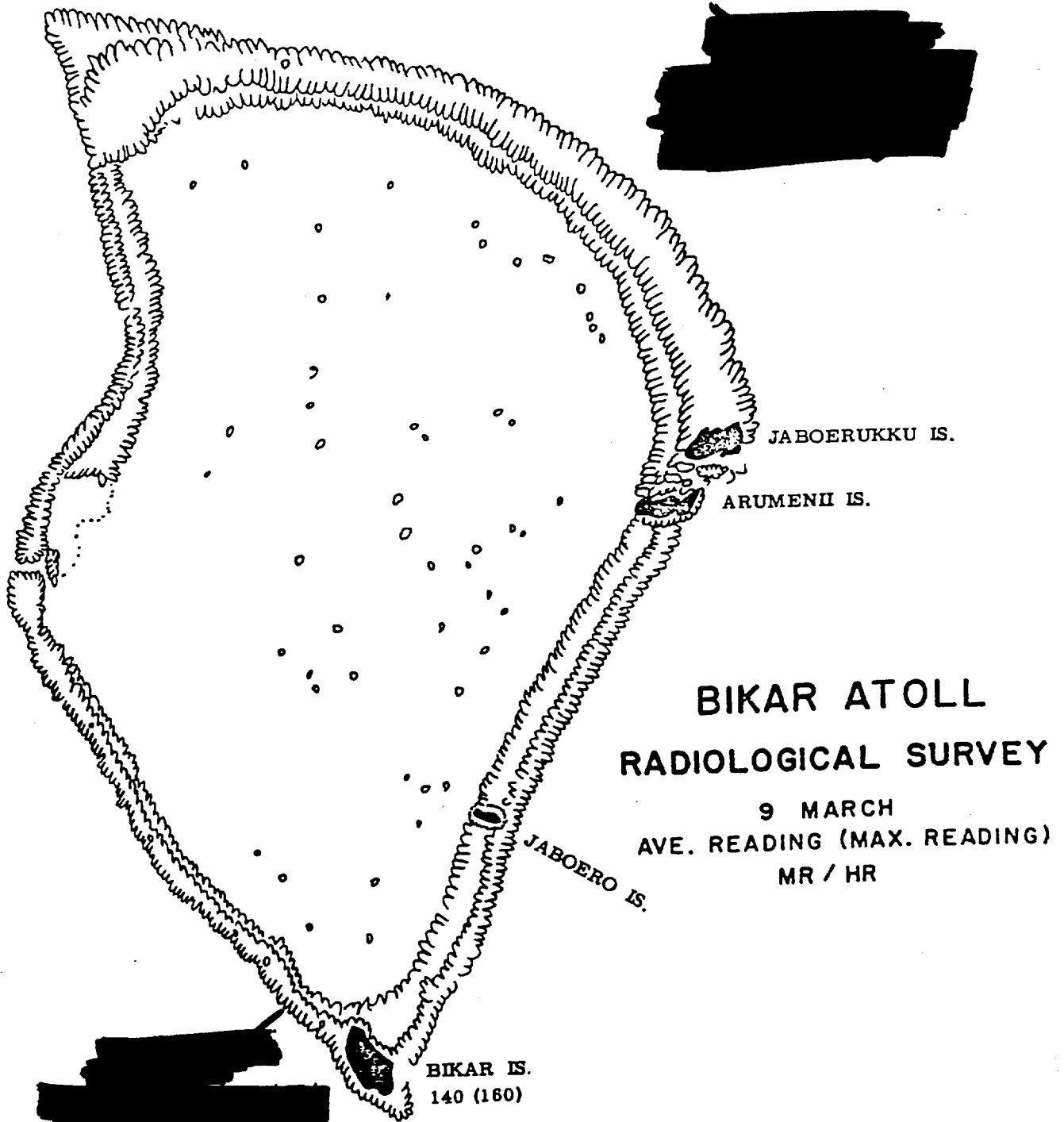


FIG. 3

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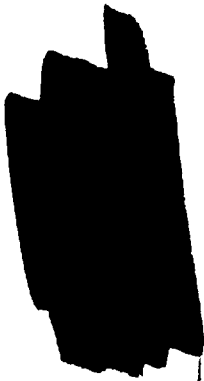
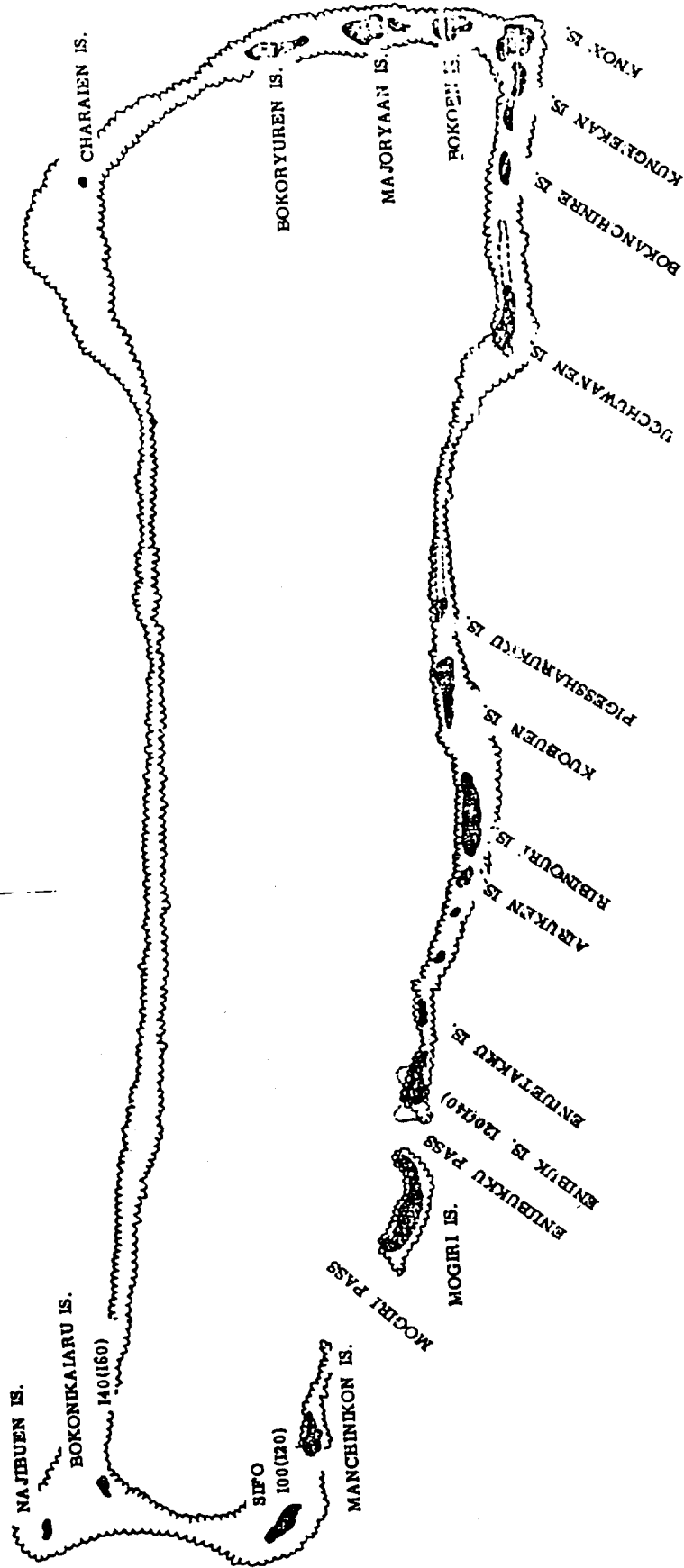
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AILINGINAE ATOLL

RADIOLOGICAL SURVEY

10 MARCH

AVERAGE READING (MAX. READING)
MR/HR.



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FIG. 5

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SUMMARY OF RADIOLOGICAL SURVEY

NOTE

ALL VALUES ARE R/HR AT REFERENCE TIME OF ONE HOUR AFTER BURST. EXTRA- POLATED BY MEANS OF THE DECAY LAW. THESE VALUES DID NOT ACTUALLY EXIST SINCE TIMES OF ARRIVAL OF CONTAMINANT WERE CONSIDERABLY LATER.

BIKAR 88
BIKAR

12°N

50

40

30

20

10

10°

50

40

30

20

10

10°N

UTIRIK



UTIRIK II

TAKA

AILUK

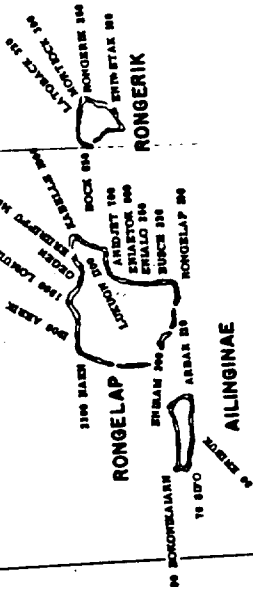
JEMO

LIKIEP

165°E

165°E

170°E



WOTHO II

WOTHO I

FIG. 6

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