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Rongelap

RONGELAP ET AL

12 OCTOBER–10 NOVEMBER, 1955

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Number 2

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Locality Seattle - Eniwetok Date October 12 - 15, 1955

Personnel Bonham, Held, Lowman, Seymour Weather

Water conditions

Radiation level(s)

Operations:

October 12, Wednesday

Departed Seattle appr. 8:30 PM via PAA flight #82.

Portland fogged in so proceeded to San Francisco arriving shortly after midnight.

October 13, Thursday

Left San Francisco about 1:30 PM arrived Honolulu about 9 AM local time. Met by H & N representative who transported us to Hickam and completed arrangements for tomorrow's flight. Four additional copies of orders needed here. One copy had been forwarded previously by mail. Quartered at [illegible]

Visited Tinker, Dawson & Wong at Aquarium. Then to University where we saw Doty and Tsuda. Heath not in at present. Leonard Roland had left for home by the time we called. Stopped at PCFI and saw Murphy and Austin. While here met Mr. Farley USFWS. Tester and Iverson out of town. After lunch visited the Hinkles.

October 14, Friday

Weighed in at 0600, boarded plane about 0730 and took off at 0800.

October 15, Saturday

Crossed date line enroute to Kwaj. Landed at Kwaj at 1330 local time. Departed Kwaj at 1500 and landed at Eniwetok before 1700. Arrived Elmira 1715.

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Locality Elmer

Date October 16, 1955 - Sunday

Personnel Beaton Hall
Lowman Seymour

Weather Fair - wind at 10 knots or less

Water conditions smooth very little sw on outer reef

Radiation level(s)

Operations:

Unpacked gear worked around lab. Lab cleaned up in good order. Salmonella has some material about the lab with which he is working out there is lots of room for one more. Warehouse key not available we will check there tomorrow.

Fixed up small plankton nets para. formalin etc for Bob Taft to take plankton tows at Bikini. He had a request from the Division of Biology and Medicine to do so. Bob asked me to evaluate the samples.

Met and talked with Wyankoop, Taft, Dennerody, Hughes, Jones, et al

Discussed informally with Wyankoop about our work here and the Koyoday trip. After dinner discussed Koyoday trip with Dr. Loyd.

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Locality Eluen - Janet — Date October 17, 1955 - Monday

Personnel Bonham, Held, Lowman, Bergman — Weather Fair

Water conditions

Radiation level(s)

Operations:

A.M. Checked over equipment in storeroom. Made arrangements for 6:30 flight to Janet this P.M. Flight orders to Bikini on Wednesday, work order for support on Rongelap trip and miscellaneous equipment and supplies from Marty Fendler.

P.M. After trip to Janet met with H.O.N. staff — Boyd, Kaiserman, Janet, Sears, Rohrer - to form up Rongelap trip with LST. Plans as follow: LST will leave Eluen at 0600 Wednesday for Rongelap and be ready to leave Bikini at 1600 Thursday; arrive off Rongelap Friday morning and work Kabelle and Labaudy Friday and Rongelap Saturday. Will work Ailinginae Atoll Sunday morning and return to Eluen Monday afternoon or Tuesday morning. H.O.N. will provide freezer space and a DUK or LSVP or both for Rongelap trip.

On Janet collected 4 rats (3 ♂), 3 cucumbers (processed 2), Halimeda + Bryopsis, W of dock, lagoon side; also soil & sand.

Only change in new colony by construction crews is the building of a couple of roads to ocean (over which dump trucks are traveling continually) and the bulldozing out of the bunkers at the west border of the area. The rats appear to be moving over the land to the west of the former colony. Saw signs of rats all over the old and new area but did not see too many rats. Probably due to the noise from the trucks and the time of day. Preserved the rodents in Borax for Rodent Range.

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Locality Glenn - Lagoon Date 15 Oct 55 Tuesday

Personnel Sclanore, Lawson, Bonham, Helle Weather Occasional squalls

Water conditions Calm

Radiation level(s)

Operations:

AM DHS & KP prepared equipment for Rongelap trip. FGL & EH accompanied Gilmartin to Coral mound 4 miles N of Glenn. Using aqualungs searched for instruments Gilmartin had lost on a previous trip. The mound is 150 - 200 yds in diameter - 15 - 25' below the surface. Asperagopsis was the dominant species of algae. Gilmartin says it is the only mound on which he has found Asperagopsis. Wide variety of corals with beautiful tables of Acropora, one with a diameter of about 2'. Took algae samples (preserved in formalin) for REP & Dawson. Took one [redacted] bottom sample (Halimeda dominant). Many fish of many species - guard fish over 3' long.

Will fly to Eniwetok tomorrow morning (Wednesday) and board the 23 at Eniwetok on Thursday for the trip to Rongelap. At Bikini will get "checked out on Primka Cord and help Bot test with plankton tows which the Division of Biology and Medicine has asked him to make. Bot will make the Rongelap trip with us and take the survey readings. A recorder and a DUK has been put aboard for the Rongelap trip. We expect to be at Kabelle & Takaredj on Friday Rongelap on ~~Saturday~~ and Ailinginae on Sunday.

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Locality Eleven – Bokoa Date October 19, 1955 – Wednesday
Personnel Bonham Held Weather Some squalls early morning then fair
Fowman Seymour Water conditions

Radiation level(s)

Operations:

0730 Left Eleven for Fred to pick up flight to Bokoa where will board the EST on Thursday for the Rongelap trip.
Left Fred about 0900 in a C-47 for Bikini (Nan).
After an early lunch ~~Left for~~ accompanied Bob Taft on a trip to Bikaka Island (HOW) via M boat then jeeps to collect plankton, water and soil samples. The plankton was taken one mile off the center of Bikini Island. A #6 meter net of #6 silk was towed for 30 minutes. This was used net but was washed out before using. The water samples was taken 50 yards offshore at the boat landing.
All the coconut palms other than the very low ones less than ten feet, were dead with very few exceptions. Only the trunk remains on most of the palms. See photograph. Heavy on the south end of the island occasionally there would be a palm bearing a few live fronds but even these were in bad shape. See photographs. A search was made for coconuts but not a one was to be seen. The papaya and screw pine on the other hand were extremely abundant. Both the giant bearing and non fruiting papaya were in blossom. See photographs. There was also a large bush found occasionally that was unknown to me with a large flower somewhat similar to "cup of gold". Most of the garden and town sites of Bikini were grown over luxuriantly. But the native palms gave the island a ghostly appearance.
Ed caught a blue marlin (not saved) and a bonita (Euthynnus pelamis) on trolling rod. In the lagoon of Lagoya

Burgess gave me small live coconut crab from Utirik collected 10/21/55

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Locality Bikini (NAN) Date October 20, 1955 - Thursday

Personnel Cookan, Neil Weather fair - max wind about 10 knots

Lowman, Seymour Water conditions from NNE

Radiation level(s)

Operations:

Checked out equipment and materials for use of Prima-cord including 1000 feet of Prima cord, 2 boxes of blasting caps (25 per box), detonator tape and wire for crimping cap to detonator. Unused materials will be left aboard Elwell Stand picked up by H+N when LST returns to Kwajalein

Tried out Prima cord in Lagoon at beginning of Cruise - 3 shots with good success. Good fish Killed more than we wanted, & couldn't resist the temptation to take a sample. The second attempt with the Prima Cord was a dud in that the cap went off but not the Prima Cord detonated. Difficulty believed to be that cap was set to end of Prima Cord and was pointing in the wrong direction. Now the Prima cord is bent back upon itself at the end with at least a foot of Prima cord on the short end of the ~~fuse~~ bend with the cap taped between the Prima cord and the bottom of the cap pointed in the direction of the long end of the cord

to detonator ← ⊂ Prima cord

Have had no other failures. Consensus of opinion is that Prima cord is a good fish killer, easy to use and would be a valuable adjunct to our fish collecting methods.

One station added 3 seconds and 3 Conchs to our dispersal collection. Looked for coconut crabs for a short while but found none. However there are coconut crabs on NAN.

Boarded LST-611 at 1630 en-route for Kwajalein.

Captain - Mr Leslie A. Howe (Navigator) Mr H.A. Gruber H+N personnel

1st Mate Mr E.L. Peterson Radio Operator Mr F.W. Held Philip Africa, asst cook

Steward - Mr M.E. Anderson Robert Dan, Marshallese

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Locality Rongelap Atoll - Kabelle Island Date 10/21/55 cont

Personnel Labaredj - Weather

Water conditions

Radiation level(s) Labaredj - range Gun Closed 11 - 0.6 m. rep./hr.
2 - 0.6 " "
See after 10-24-55

Operations:

Kabelle cont

side near NE corner of Island. Nets included small [illegible] goat fish, var. sp. groupers damsel fish and Chromis. Primo Cast net used at the mouth collecting also in the channel between the two islands. Big groupers, gulf barbs and miscellaneous fish but not in large numbers were taken. [illegible]. Notes were made as usual as seen here previously. Blasting lagoon water samples taken.

Coconuts (10 - 5 for AFL 5 for NYU) were taken from central and south central part of Island. Arrowroot from center of Island. Two coconut crabs from northern part of Island. Sea cucumbers, spider conch and some algae from lagoon off center of Island. Algae and Tridacna from SW corner of Island. 2 fairy tern, 1 ruddy turn & 4 fairy tern eggs from center of

A sketch of Kabelle Island showing collecting areas, meter readings etc. has been prepared

Left Kabelle for Labaredj shortly after 1400.

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Labaredj

Arrived approximately 1500. Beached LCVP on sand at south end of Island close to rock ledge. Very good landing area.

Meter readings taken with above instrument and in similar manner as at Kabelle. Range of values given at top of page. Other readings [illegible] on the sketch showing the islets of the Island.

Soil samples taken two yards inland from lagoon near south west corner of Island. First sample taken on open low level ground surface reading 8 + 2 mr/hr; at 6" below ground level 0.5 +

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Locality Kwajalein Atoll - Jabwidj Date 10/21 cont.

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Jabwidj cont

The second sample was taken 15 feet from first sample and from under with a tree. Readings at ground level 7 ± 0.6; at 3" level 0.3 ± 0.1; at 6" level 0.5 ± 0.07.

Fish collecting in lagoon with both Prima and rotenone not successful but a fairly representative sample was obtained. On the way from Kabelle to Jabwidj a 30 pound + dog tooth tuna was caught by Mr. Anderson. Saved. While ashore at Jabwidj the Coast Guard Jamboree Cornute Caranx gaimard, jack of Jabwidj saved.

Algae cleaned and bagged; small taken at lagoon just north of fish collecting area. Lagoon water samples taken.

Cenobita 2 coconut crabs captured on northern part of Island in Pandanus and coconut tree area. Coconuts (10) from northern part of Island - few palms other than in this area. Arrowroot also in this area. One frigate bird egg from SW part of Island. Birds also collected (Terns).

10/22 am Dead frigate bird found on deck before weighing anchor. Saved. Sketch by Jabwidj showing collecting areas, water readings etc has been made.

Remained at anchorage made this morning. Too late to move by the time we got back to the LST which was 1800. Placed collections in freezer that H + N had put aboard for our use. Temperature 15°F. The Pterois fish in formalin held very well.

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Locality Rongelap atoll - Rongelap Island Date October 22, 1955 - Saturday
Personnel Pitelka Held Weather fair - only a light wind
Swanson Seymour Water conditions with the whole cage on water.
Radiation level(s) Rongelap Island - range Open 2 - 0.2 mr/hr
Closed 0.5 - 0.1 " "

Operations:

Rongelap Island obtained coelerps and pulverized coral samples (with SS) from each place
0800 Weighing anchor. To have left before this time would have put the crew on overtime. About 10:15 at anchor off Rongelap Island about 2 miles. Came from north end thru lagoon via Eastern going out NE passage and around outside.
1030 first of four LST. Landed on sand beach in front of village. Excellent landing area. Used LCVP because it is faster to get off of ship and goes about twice as fast. Takes 20 to 30 minutes to open the door of the LST to unload the DUKW.
Radiac meter readings made with same instrument as yesterday. Range given above and individual readings on Island sketch. Readings restricted to village area. Reading made on smaller islands to the north
Island water samples taken from one well and three cisterns. Two 250 ml samples from each. The depth of water in well was just short of the length of the water bottle. Ed climbed down into well to obtain samples of the sand from well bottom and of algae growing on the walls of the well.
Food samples taken within a few feet of the well. Ground level radiac readings were 0.9 ± 0.3 at 3" 0.3 ± 0.05; at 6" 0.2 ± 0.05
The fields were heavily. The coconuts and papayas were heavy with fruit. The squash were in bloom but no fruit found. Again the bread fruit trees were loaded with fruit. Dog tracks, pig tracks were seen but no waste was found of old or. In general the vegetation on the Island was lush. Morinda was green and in fruit. Arrowroot plants higher than corn head.

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Locality Rongelap Atoll Rongelap Island Date 10/22 cont

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Rongelap Island (Cont)

Coconuts surveyed and wounder collected.

The second soil sample was taken from a papaya cluster behind schoolhouse. The meter readings at ground level were 1.0-3; at 3" 0.5 ± 0.1 · at 6" 0.4 and 0.1. In all 12 one gallon soil samples have been collected for NYOO, two gallons for each sample are filled. Under the top three inches of soil from a ½ square foot area in one gallon can and the soil from 3" to 6" below ground level in a second gallon can. There have been two sample areas on each of Utirik, Rongelap and Rongerik Islands.

Fish collections were made about ¼ - ⅜ of a mile north of landing area using both Fuma-net and throw net. Not many fish present and only four collections made. Another collection was made at east end using Fuma net and this was bigger and better. Collection made at low water and just after incoming tide. Many onjafen terns present and more came in. An egret and a couple of plover birds made up collections.

Sea Cucumbers algae Tridacna. Sediments collected from general area at front of village (ocean side).

Talk with Bob Dean Saturday by boat and propeller collected algae and sea cucumbers (one variety + unknown?) for 22 and 39 feet. Plankton tows were for 30 minutes. NYOO water sample from beach. SFL water sample from boat anchorage.

Would have moved to Rikiringiwe Atoll this P.M. if we could have left here by 1400. However work was not done by this time. Returned to USS Tabosa to

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Locality Rongerik Atoll - Eniburk Island Date October 23, 1955 Sunday

Personnel Bordner Held
Lowman Seymour

Weather Partly cloudy & light breeze

Water conditions

Radiation level(s) Eniburk Island - 2 readings: west end - 0.5 - 0.05; 0.6 - 0.1

Operations: Weighed anchor 9 a.m. obtained ~ 0.5g sample of pulverized coral from anchor chain.

Did not leave anchorage off Bengtop Island until 0900 in order that upon arrival at Wegan Pass, Rongerik Atoll, the sun would be past its zenith and thus make it easier to observe coral heads as the boat entered the lagoon. None of the ships crew had been to Rongerik previous to this trip. The charts show only a few soundings and no navigational aids. Entered the lagoon at 1330 and dropped anchor off Wegan Island in 25 fathoms of water.

Took LCVP onto Eniburk Island, the island just east of Wegan Island. This island was selected because it had many coconut palms while only two palms could be seen on Wegan. Landing was made at western end of Island, lagoon side, on a sand spit. This was an ideal landing spot - a steep sand beach.

The island had heavy vegetation (cut several trails) good beach on ocean side, a few taller coconut trees, pandanus, heliotrope - and no flies. In other words a very "nice" island. The coconuts were small (not had been used for copra. There were a few small native thatched dwellings and an abandoned American style copra processing or food gathering unit. Coconut crabs, hermit crabs and land crabs were collected in well [illegible] and 7 birds. At least one other bird was seen and 2 coconut crabs were seen but not captured. (evidence of many present on Eniburk) Geiger counter was taken. A water sample was taken from a 55 gal. drum that had standing water and salt water samples were taken [illegible]

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Locality Eniwetok Island - Eelungmae - Coral Date 10/23/65

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

Fish were collected using Derris root with Bebe Taft as snorkler man. One 25' charge set off in a mostly sandy area lagoon side near boat landing. Mullet and convict surgeons were present before detonation and these fish as well as small wrasses and a trigger fish were killed by the blast and collected. The second charge was set off near coral bottom in coral between islands. Kill was of large surgeon fish including Tang and the one with the long sail like dorsal fin, needlefish, and occasional damsel & wrasse. The third charge was set off in a sandy area in which there were goat fish but no mullet. When landing with the LCVP there were several sharks in the area but only saw one during fish collecting operations.

Frank made a bottom sand + algae collection.

Halimeda, T.C. variabilis, Sphaerococcus algae also collected. Tridacna and spider snails also present and collected.

Took plankton tow grazing back & skip. Poor catch apparent & to mostly sand due from Long Island tow. Many Velella and Conits seen at East end of Rongerik Island.

Returned to LST shortly after 1600. from boat

A pig fish was caught off the LST during the afternoon. During the evening several shark lines were set. Many sharks were caught five of which were saved and tagged. Lines were put in the water.

Meter readings - similar to previous days - bottom near west end of Island in trench 0.05 and 0.5; shoaler areas of from 0.1 and 0.6.

Also soil samples from this area for AFL. (Same area as drawn with water

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Locality Auburgmeer - enroute to Emmetsville Date October 24, 1955 Monday

Personnel _____ Weather overcast - fair visibility

_____ Water conditions light beige, no seiches

Radiation level(s) _____

Operations:

Jiggers did not work to draw Lagoon before 1000 hrs. Felt that coral heads would be more easily visible. Hence decided to go fishing.

0715 left LST. Fished bay area across Mogens Point and back and caught 1 grunion (Hubbs) 1 frogfish (Peterson) and 1 Two line mackerel (Bonham). Others were saved. Another flock on east coast. Birds were working individually and no schools of bait or tuna seen as headed for area. Five bonito were seen yesterday. Some birds and a few bonito were seen but none caught. Part of the time, 15 minutes spent on planktonic tow. Catch no better than yesterdays. Returned to LST at 0930

Ivee fishing midway between 150 feet of water & 450 feet of chain rat. Corals (submerged) sample by ~~me~~ bottom. ¼ of sample in the 120 feet mark in the first 120 feet of chain in. Hauling remainder of sample near anchor. Bonham suggested a trolling line which be trolled from the LST using fish wire in with sinker and the red gurd lure. This lure has been very successful when trolling from LCVP, but nothing caught from 12 noon to 7pm when gear taken in on LST. over the snubber.

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Locality Rongelap & Ailinginae Atolls Date October 21 - 23, 1955

Personnel Seymour, Lowman, Held, Taft, Bonham Weather

Water conditions

Radiation level(s) w/ Beckman MX5 Survey Meter, by Bob Toft of Rad Saf.

Operations: Values in mrep/hr; 1" from ground w/shield (closed / open)

11-85 Friday. Transect across middle of Kabelle I. from lagoon to ocean side above high tide (2.5 / 8); open soil: (2.5 / 8) (2.5 / 9) (2 / 8) (3.5 / 12) (4 / 14) (3.5 / 10) (1.5 / 7) (1.5 / 5) (0.1 / 0.4)

Soil samples 1st 2nd — in Scarvola — inter-tidal.

Surface → (3.5 / 12) (2 / 8)

6" down → (0.2 / 0.9) (0.2 / 0.5)

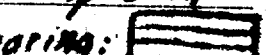
Labordj I., SW end, on land proper;

Lagoon side half way to ocean side of island. (1.2 / 10) (3 / 11) (0.7 / 7)

100' farther north: (0.08 / 0.5) 10-26-55 Soil samples: #1 (2 / 9) In open, #2 (0.6 / 7) under trees.

3" depth (0.3 / 1)

10-26-55 .08 / 0.5 6" depth (0.07 / 0.5)

Rongelap I. 10-22-55 Sat. At village: beach, just above high tide (0.1 / 0.2), in grass back of village (0.3 / 2) (near well). Soil sample 10' W of well (0.2 / 0.9): @ 3" depth (0.05 / 0.3); @ 6" depth (0.05 / 0.2). Second soil sample in Lagoon cluster near (14' south of) concrete foundation appearing:  surface (0.3 / 1), 3" depth (0.1 / 0.5), 6" depth (0.1 / 0.4). Map.

Eniaetok I, Ailinginai Atoll, 10-23-55 Sunday. West end, in brush (0.05 / 0.8) 50' farther East, bare soil under trees (0.1 / 0.6)

Toft says background for this instrument is ~ (0.05 / 0.85)

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Locality Enroute, Ailinginae to Eniwetok and Parry Island. Date October 25, 1955 Tues.

Personnel Seymour, Held, Lowman & Bonham Weather ENE 15 mph. Rain last night.

Water conditions moderate

Radiation level(s)

Operations:

Reset sash cord (350') trolling line; 7am, took in @ 10 am; no fish. Believe it should be out 15' from side of ship to avoid the wake on the edge of which it trailed. Arrived at anchorage off Parry 11:15a. Went ashore in M-boat. At 1600 hours 4:00pm unloaded our gear and specimens from the LST 664 which had meantime docked. Finished 5:30pm.

Received our first mail from home and Lab.

Bob Taft was directed by Div. of Biol. & Med., AEC. to permit utilization of sport-caught fish at Eniwetok Atoll, but he feels it unsafe to use fish from crater vicinity.

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Locality Elmer - - - Date October 26 1955 cont.

Personnel Bonham - Held Weather Bcm early A.M. - partly cloudy

Lowman - Seymour Water conditions ft

Radiation level(s)

Operations:

Started processing "Rongelap" samples.

TWX received yesterday from L.R.D. requesting the Bikini Island collection. Made tentatively set schedule for next Monday but are awaiting letter from L.R.D. regarding details of this trip.

Coconut, pandanus, coral and water samples from NTOO are ready to be packed and shipped. Paper work for shipment has been initiated and is being handled by Marty Trendlen. Letter to Eisenbud regarding samples flown and mailed by Ed Foster. A copy also sent to Dr. Dunham and L.R.D.

Processed invertebrate sample as far as half way through the Rongelap Island material.

Frank processed coconuts through Rongelap. Is also ashed ~5 pounds of coconut.

Took coral samples from the 12 - 1 gallon cans that are to be sent to NTOO. Could find good suitable instrument for reading the coral core. Dumped yellow samples into jelly can a large jar and then using a long blade screw type auger took core samples from center of pile.

Received letter from L.R.D. advising us to study water readings and the coconut collections from Rongelap Island (NOW).

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Locality Elmer — Date October 27 1955 Thurs

Personnel Beaman Held — Weather Fair except for ~~light~~ rain

Lowman Seymour — Water conditions down squalls

Radiation level(s)

Operations:

~~Boat to~~ Processing "Rongelap etc" samples

Made arrangements for following work schedule

Saturday, 10/29	plantation + fishing	Dr Blake — Seymour
	Crant Town	Burkhart + Held
	rats Jarvet	Lowman
Tues. 11/1	Belle Elvira	all hands
Wed 11/2	Eniaetok	" "
Thur 11/3	return from Bedane	" "

Langusta hunt on Elmer ~~Saturday~~ Sunday evening

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Locality Elmer — Date October 28, 1965

Personnel Berdeen Nebb — Weather Mostly fair

Lawson Seymour — Water conditions Choppy

Radiation level(s)

Operations

Took plankton and 10 Jaffaya samples (5 meat 5 [illegible] from collection of October 19th and with cards and [illegible] counting with a request that answers [illegible] TWX. Plankton samples 19065+66. Jaffaya 18345-[illegible]. No alignment - Soil Water, Currents, Sediment - Pedal up [illegible] Punch Cards for these samples to Eisenhower Experiment Tow cancelled because of lack of helicopter [illegible] At 2130 some of the Hawaiian boys started a campfire from just west of the EMBL & the Beach Combers Picnic. Moved 12. Preferred Time as the start of the flood after low tide on a dark night. This was a neap tide and not low as Tide Bert Taft made final preparations for collection and turned the Laboratory over to us [illegible] to what we found.

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Locality Elmer-plankton trip - Janet Date October 29, 1965

Personnel Parkhurst Held Weather Sun occasional clouds

Foreman Jorgensen Water conditions Wind light NW 5

Moderate current from NW

Radiation level(s)

Operations:

Plankton Tows

0900 left Elmer - Dr Blake - Bell - Jorgensen

Wide Passage - Dr Blake caught 1 Coho and [illegible]

0911 - 0925 Nets out Wide Entrance - 2 miles off [illegible] nylon nets, ½ meter jaws, one of ⅛ mesh, one of ¼. Caught 2 [illegible] like fish in ⅛ net. Both caught small Cohos

Jeff Keith caught an Opah and a Queen fish - called Opah by Hawaiians - simultaneously. Have mouth guard for Opah and to Chrisensen Ogawa

1101 - 1116 Nets out 1½ mi N of Jersey

1220 caught a Large Coho (6th) 2 miles west of Alice

1230 caught 1st Chinook which was [illegible] by Large fish

1254 - 1314 Nets out 1½ miles W/ E end of Kelp

1330 - caught 3 Cohos simultaneously

1440 - 1505 Nets out W/ south end of Ulva - 1½ mi. off. Also only Kelp Large on water

1610 Called at Large Ulva

1630 - 1645 nets out Dyes Entrance near floating barge

1700 Elmer - Have caught 6 Cohos, 1 Queen fish 1-2 lbs Mackerels 1 Ulva and 1 other!

0730 left Elmer for Janet. Caught 8 more [illegible] took out testes & preserved in Bouins. ♂ #1 had burn scars that looked like [illegible] burn scars & was screening. Checked for spread of colony - now occupies most of the space between the old site and the new way. Also to [illegible] found old site

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Locality Elmer — Date October 30, 1955

Personnel Bonham Hald — Weather Pt. Cloudy

Lowman Seymour — Water conditions

Radiation level(s)

Operations:

Processing samples - dissecting, weighing, identifying, etc.
Pungelay - Hilunginae and yesterdays collection.
Collected Halmiedia at Miramar Club. Asparagopsis, [illegible]
and Sea cucumbers from reef behind FMBL

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Locality Elmer - - -
Date October 31, 1955 Monday
Personnel Bob Hamm Hold
Lowman Seymour
Weather mostly fair
Water conditions

Radiation level(s)

Operations

Processing Samples

Following samples packed for Shipping - This is first Shipment of
Less Than 2 plankton and 10 papaya (Samples (Bikini E.) marked as such

group	plate numbers	no of Samples
Fish	16401-644	244
Plants	18336-535	200
Insects	17586-789	204
Plankton	19067-084	18
	19489-506	18
		684
Sea Birds	13704-761	58
		742

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Locality Belle - Edna Date November 1, 1955 Tuesday

Personnel Barham Held Weather an occasional shower

Lowman Seymour Water conditions otherwise fair

Beckman MX5 meter no. 65004 Reading 1" above ground

Radiation level(s) Belle area		closed	open
	A	0.8	5.0
	B	1.5	7.0
	C	1.5	7.0
	D	1.0	5.0

m. rep./hr

Remarks:

0805 Held and Seymour left for Belle via Gene. Only space for 2 on this flight. Barham & Lowman left Elma at 1052 for Gene where they met Held. Gene to Belle via DUK

0943 getting out of Neuman in Area F just west of Eagle Cr. Low tide at 1018. Neuman moved from hole. Good Red Cell mainly around Eel-eelgrass current region, gut fish, Enteromorpha, Ulva, Laminaria, Agarum, Fucus, Rhodomela, Nereocystis (Oregon side) above 2 Tridacnas not taken as samples. Collected 5 Tridacnas, Ulvella, Cauterpa, Halimeda, Spatoglossum, Microdictyon from area F-G. Also Acropora, Porites and Pocillopora from area F-G.

Configuration of west end of Island changed. See Photographs. Total soil samples from areas A, B, C, D. and Coral and Algae samples from plant 1319 Scaevola and 1428 Messerschmidtia. Algal collections from areas A, B, C, D are above. Photographed (showing tide and color) the following plants: 1207, 1208, 1209, 1211, 1213, 1215, 1216, 1319, 1402, 1410, 1428 and 1433. Did not locate 1430 (Musa x Leptospermum). There were four mangrove trees growing on Belle at the north side. Picture. Looked healthy.

General impression of Area of Island was that it was no less but thicker than in December-January 955.

No birds

Samples counted on lab set up. Best guess is 5 d/m/q.

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Locality Edna - Belle Date November 1955 Fall Cast

Personnel Weather

Water conditions

EDNA

Radiation level(s) of Closed 2.2 6.4 open 0 6 of each mg/l.

Operations:

Stopped at Edna ~~at~~ on every lock & Gene.
Took pictures at 400W, 300W, 200W, 100W, Zero 100E.
Beyond 100E is open in Lagoons. Plants growing at about
same also took picture of Mesembrianthemum cluster, along
Lagoon side with Ed.

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Locality Bikini - Bikini Island Date November 2, 1955 Wednesday

Personnel Gordon Hedgpeth Weather

Lawson Ferguson (Capt.) Water conditions

Radiation level(s) see below values in mr. ref./hr.

Operations:

0730 left Elmer for Fred for flight to Bikini

0905 left Fred 1030 landed Bikini atoll, Nan.

1130 left Nan in M boat with Jeep for Bikini Island Hour

1215 Hour 4 more papaya and pandanus

Used Prima cord and removed & collected fish about ½ mile from NW end of Island on lagoon side. Lots of fish present made good collections but dredge held many more than needed. Water murky, leg surf. Collected Halimeda Dictyota asparagopsis and algae on coral. Also collected 1 Diadema 10 cm. diameter urchin, Holothuria and squid from ocean reef. Number of dolphin. Land plants included Pandanus, dry small coconuts, Papaya Tournefortia, Messerschmidia, grass + weeds.

Made survey with readings with a Beckman MX-5. Readings with shield closed and open held 1" above ground. Readings taken every ½ mile along road from NW end of Island

Station number	Area	Sand Spit	closed	open	Spectrometer Reading	Area	closed	open
3.8	300' NW of survey Tower		.15	5-6	160.1	sand + grass	½-2	6-
4.0	Survey Tower NW end of I.		1.0 1-1.5	4-7	6.2+	" "	1-1½	4-
4.2	sand + grass		0.5-1.5	4-6	6.5	sand	1-1½	4-
4.5	dry grass - sand		1.5-5	up to 13	6.6+	tower, Sand of I.	1	4
4.7+	" " "		2-5	6-14				
5.0	grass + sand		1.2-1.7	4-7	5.5	papaya tree	—	5
5.2	low wash - sand		3-5	5 to off scale				
5.5	gravel - grass		2-3	10				
5.7	sand + grass		1-2	6-15				

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Locality Nan, Bikini Atoll Date November 3, 1955

Personnel Held, Lowman, Seymour, Bonham TAFT Weather Fair

Water conditions E 10-15 mph, moderate

Radiation level(s)

Operations: Went out on garbage boat to see reputed mass of fish, but none appeared. Processed sport fish caught off pier at Nan last week and held for us in a freezer at the carpenter shop: 17 fish including jack 2-line mackerel, grouper, snapper, pigfish, from 11" to 24". No scales available; took lengths instead of weights. After lunch perused outer reef off compound area: abundant cucumbers Holothuria mostly, 5% Stichopus; most areas had >1/yd²; many areas 1/ft². Observed rate (~ 0.1 - 0.5 cc of sand/minute), and nature of feeding.

Received TWX from LRD noting omission of DBM-required survey meter readings at 3' for Bikini & Rongelap. Rad Saf personnel at Nan had the following simultaneous readings at 1" & 3' for How recreational area on November 1, 1955; mrep/hr:

At 3' from ground		At 1"	
Open	Closed	Open	Closed
10	2.5	20	5.0 4.0
20+	3.8	20+	5.5 5.0
20+	4.5	20+	5.2 5.5
16	3.2	17	4.2 3.2
20+	3.2	20+	5.2
16.5	2.5	16.5	3.2
18	3.2	20	5.5

Return flight to Eniwetok scheduled for today was postponed several times and then finally cancelled. Engine trouble will use the delay time to monitor Bikini Island again, this time at 1" and 3 feet. Will go up to How tomorrow morning and return in time to catch plane back to Eniwetok.

Also initiated request for a flight to Rongelap to repeat meter readings at 3 feet.

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Locality Bikini Island - Bikini to Eniwetok Date November 4, 1955 Friday

Personnel Bonham Held Lowman Seymour Taft Weather Fair

Water conditions

Radiation level(s) see below, for Bikini Island (HOW)

Operations:

Left Navy at 0800 on duty boat with Jeep for Bikini Island. While Bonham and Held searched for Cenobita, sea cucumbers and Tridacna - Lowman - Taft - Seymour repeated survey.

Invertebrate collectors found 2 H. atra, no Cenobita or Tridacna

Meter readings were taken at 1" and 3 feet every 1/4 of a mile along the road from the NW end of the Island to the S end. Along the swell running across the Island, just about the middle, readings were taken every 1/10 of a mile.

The recreation area near mid Island and crossed by the cross-Island road was thoroughly surveyed by the Rad Safe people on November 1 at the request of the Division of Biology and Medicine

The readings of today as well as those of November 2 are enclosed on a following page.

Left Bikini Island at 1100 by navy boat. Took a soil sample about 1/3 of the way to ocean side on cross island road: also from tower near boat landing: and from beach at the intertidal zone and above high tide at the boat landing.

Plane took off at 1330 from Navy and landed at Fred at 1445

Received TWX from L.R.D. concerning activity of plankton and jappya samples from Bikini which were collected on October 19th and mailed October 28th. Thanks for the prompt service. The values were of considerable interest to us, Bob Taft and the other AEC people.

Received copy of Dr Boss' letter of October 20th to Dr Donaldson. Can an adequate sample for this request other than for bulk plankton.

Rongelap flight was laid on for tomorrow but later changed to Monday

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Locality Bikini Island - How Date Nov 4 cont

Personnel Bonham Held Weather

Seaman Seymour Taft Water conditions

Radiation level(s) Meter - Beckman MX5 - ser. no. 65006 from RadSafe at Nan
Background at NAN for this meter is ~ 0.04 m. rep/hr
Operations: Values in milli reps per hour
Meter Readings from North & South along Bikini Island Road

Miles from Sand spit NW end of I.	Area	NOVEMBER 4th 3 feet above ground closed	open	1 foot above ground closed	open	Nov. 2nd 1" above ground closed	open
0.0	sand spit; NW end of I. above high tide	0.3	1.3	0.6	2.0	.15	5.0-6
0.0	" " " " " ; intertidal	0.1	0.2	0.15	0.35	[illegible]	
0.2	survey tower; sand, some grass	0.7	4.0	1.5	6.0	1.0-1.5	4-8
.4	sand + grass	2.0	11.0	3.5	18.0	0.5-1.5	4-6
.65	" "	1.6	9.0	3.5	18.0		
.7	dry grass, sand					1.5-5.0	up to 13.0
.95	" " "	1.5	6.0	2.0	8.0	2.0-5.0	6.0-14.0
1.2	grass + soil; near Coast Landing	1.0	3.5	1.0	5.0	1.2-1.7	4.0-7.0
1.4	low wash; road	2.5	16.0	5.0	off scale	3.0-5.0	5.0 off scale
1.7	gravel, grass	2.0	12.0	5.0	off scale	2.0-3.0	8.0
1.7	papaya tree					—	5.0
1.95	sand + grass	1.5	8.0	3.0	14.0	1.0-2.0	6.0-15.0
2.3	" "	1.2	4.5	1.5	8.0	1.5-2.0	6.0-8.0
2.45	" "	1.5	9.0	2.0	12.0	1.0-1.5	4.0-20
2.7	mostly sand	1.0	5.0	2.0	13.0	1.0-1.5	4.0-7.0
2.85	survey tower, S end of I.	0.8	5.0	1.5	8.5	1.0	4.0
3.0	sand spit; above high tide, sand	0.25	0.6				
3.0	" " " " " , rubble	0.04	0.06				
3.0	" " , intertidal zone	0.08	0.1	0.06	0.12		
1.6	junction of cross island and north-south island roads	2.5	14.0				

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Locality Bikini I. (How) Date Nov 4 cont

Personnel Weather

Water conditions

Radiation level(s)

Operations:
Meter Readings across Island from Lagoon to Ocean Side along Road that Is 1.4 miles South of Tower on NW End of Island

Miles from Junction of N-S and Cross Island Roads	Area	NOVEMBER 4 3 feet above ground Closed	open	1" above ground Closed	open
0.00	near Japanese Monument; roadway	2.5	14.0		
0.05	dry grass and arrow root	1.8	9.0		
0.05	roadway; edge of ballfield, lagoon side	2.0	11.0	3.0	12.0
0.15	dry grass	2.5	13.0		
0.25	grass + brush (Scaevola)	1.8	8.0		
0.35	" " " "	2.5	11.0		
0.45	" " " "	2.5	13.0	3.5	19.0
0.55	Ocean beach: above high tide	0.9	3.0		
0.55	" " ; intertidal zone	0.4	1.0		

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Locality Elmer Bruce Date November 5, 1955 Sat.

Personnel Seymour, Held, Lowman, & Bonham Weather Fair

Water conditions moderate

Radiation level(s)

Operations: The 0805 'copter departed w/Lowman & Bonham at 0830 for Bruce to collect control rats. Circuit tour cucumbers (5) were obtained 3/4 way out on ocean side off runway; also Turbinaria. On lagoon side no Halimeda showed in water < 8' deep; got a filamentous and a scum type alga, and hydroids. Many fish and a large (1') langusta seen. Frank saw 4 rats; got nine. Brush too dense for shatter. Returned to Elmer 1155. Sampled Bruce coconut meat. Processed Nan, sport fish samples of 11-1-55 dissected and bagged in pliofilm 11-3-55. Finish Rongelap trip soil sample processing. Started processing Bikini soil profiles. Dissected muscle, liver, & bone chemistry samples from Rongelap dogtooth tuna.

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Locality Elmer — Date Nov. 6 1955. Sun.

Personnel Bostwick Held, Lawrence Seymour — Weather mostly fair; winds

Water conditions stronger

Radiation level(s)

Operations:

Processing samples: Belle fish 11-1-55. et al.

Boxed for shipment tomorrow morning the following samples

	plate numbers	Spec. no.s	no. of samples
SOIL	19507-577	A19-A37	21
WATER	-	A1-A11	11

Also plankton ~~sett~~ samples for identification.

Cards included for soil but not for water; hold water samples until our return (for processing).

This is the second shipment for this trip; previous shipment October 31st.

Drying oven thermostat unreliable.

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Locality EIMER-RONGELAP I.-LABAREDJ Date NOV. 7, 1955 Mon

Personnel Bonham Lowman
Held Seymour

Weather

Water conditions

Radiation level(s) Se below: all readings with Victoreen MX5 in m. reps per hr.; bg ~.03-.04
serial No. 65005

Operations: Processed samples: How Fish 11-2-55
Bonham and Lowman at Eimer
0830 Held and Seymour with Duggan and Sparn left Eimer in L-20 for
0915 Took off in PBM (612) plan fed for Rongelap with Lt. [redacted]
as pilot. Flying time to Rongelap 2 hours 7 mins; winds at 3[redacted]
from ENE most of way. Landed off Rongelap Island, patrolmen [redacted]
pilot. Ashore at 12:05; surveyed both Victoreen MX5, (1) the village area,
the latter to a distance of 800 yards South of village (2) path leading from
lagoon to ocean side of Island. Returned to PBM ~ 1300. Took
off for Labaredj. Ashore Labaredj (life raft) at 1445. Surveyed
14 landing area (3) beach to mid Island on lagoon side of Island cross
Island to ocean side of northern most tip of Island (5) Coconut grove
near north end (6) Plumbbart "hole" in this grove (7) area where
AEL monitored 2 weeks ago (8) and finally the yellow stake on Island
unnamed just south of Labaredj. Returned to PBM ~1600. Landed
at Fred at 1810. L-20 met plane and landed us at Eimer at
1820.

Meter readings follow

AREA	3 feet above ground closed	3 feet above ground open	1" above ground closed	1" above ground open
RONGELAP ISLAND - landing in front of village - intertidal area	.04	.04	.04	.04
" " " " " " " - above high tide line	.06	.10	.08	.13
" " 60 paces from lagoon to eastern	.08	0.3	.08	0.4
" " school house - hospital area	.07	0.3	.10	.25
" " " " papaya cluster (soil sample A1112)	.09	0.5	0.4	1.2
" " well behind schoolhouse, grassy area A9916)	.14	0.8	0.10	0.6

Cont. following page

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Locality _____ Date Nov. 7 Cont (mon.)

Personnel _____ Weather _____

_____ Water conditions _____

_____ → _____

Radiation level(s) _____

Operations: Rongelap Island Survey Meter Readings Continued

	Area	3' above ground closed	3' above ground open	1" above ground closed	1" above ground open
Heading South along path near lagoon side of island. General direction N-S	Village center - Concrete posts - grass	.07	0.3		
	" " " " " gravel	.07	0.15	0.09	0.4
	"+100 paces grass			0.15	0.9
	" " gravel	.11	0.6	0.10	0.4
	+ 25 ", at church grass	.06	.25	.06	0.35
	" " " " " gravel			.07	0.4
	+ 70 ", inside hut	0.4	3.0		
	" " " ", pandanus mat			1.0	7.0
	" " " ", roof			0.5	4.0
	" " outside of hut, roof			1.2	8.0
	+200 ", pandanus grove	0.4	3.5	0.5	2.0
	+350 ", mostly grass	0.4	3.0	0.6	5.0
Path from lagoon to ocean side starting from lagoon side. General direction N-S	50 paces from junction with N-S path - well grass	0.09	0.4	0.06	0.3
	+ 100 ", open grass	0.3	2.0	0.5	3.5
	+ 110 ", Tida bushes	0.3	3.0	0.9	5.0
	+ 110 ", open grass	0.4	3.0	1.2	7.0
	+ 100 ", grass and sand under coconut	0.4	3.0	0.7	6.0
	+ 100 ", under Guttarda, dead leaves	0.15	1.5	0.4	1.0
	+ 55 ", ocean side - above high tide line - leaves and	0.12	1.0	0.3	3.0
	" " intertidal area - sand & beach pavement	0.03	0.03	0.03	0.03
	school house, inside	0.09	0.7	0.05	0.4
	school house table			0.2	1.2
	hospital, inside	0.11	0.9	0.12	0.9
	hospital mattress			0.06	0.5

values rechecked because they were less at 1" than at 3'

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Locality _____ Date Nov 7, 1955 (Mon.) Cont.

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) LABARED J SURVEY METER READINGS

Operations:

AREA	3 feet above ground CLOSED	3 feet above ground OPEN	1" above ground CLOSED	1" above ground OPEN
boat landing, south end, intertidal sand	0.04	0.06	0.06	0.10
" " " " , above high tide, pavement	0.7	5.0	1.3	8.0
pass N of boat landing, lagoon side, dead leaves			4.0	off scale
" " " " " " gravel	1.1	8.0	3.0	15.0
± 175 paces " " gravel	0.6	4.0	1.4	7.0
on lagoon hi tide line, 40 paces East under Pandanus trees	2.5	16.0	50	off scale
plus 35 paces E, gravel, open area	0.9	6.0	3.0	17.0
" 45 " " , under Messerschmidia	1.0	5.0	1.5	11.0
" 50 " " , open sand	0.9	8.0	3.0	off scale
" 50 " " , high tide line Ocean side, sand gravel	0.6	3.0	0.8	4.0
" 40 " " intertidal " " , sand	0.09	0.4	0.14	0.6
" 10 " " " " " " beach pavement	0.03	0.07	0.04	0.15
down tip of Island - intertidal area	0.05	0.15	0.07	0.4
" " " " - above high tide	0.6	4.0	0.8	6.0
coconut grove near N end - under coconut tree - dead fronds	1.0	5.0	0.8	4.0
" " " " " " beneath " "			2.0	11.0
" " " " among arrowroot plants	1.1	8.0	3.0	12.0
" " " " bottom of Rhinoceros "hole" ~12"			0.5	3.5
S part of Island, under tree, dead leaves, at site of soil sample	0.9	6.0	1.5	12.0
" " " , 10 paces west open site of soil sample A586	0.8	6.0	3.5	18+
unnamed island just south of Taleridj (10 cpm)				
Eyelum stake, open beach, above high tide line, sand gravel	0.9	6.0	1.1	6.0

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Locality _____ Date Nov. 7, 1955 (new) Cont.

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

The average survey meter reading values are summarized below but these values have several limitations and the results should be interpreted in light of these limitations. Just exactly what the average value means is open to question. The principal limitation is the variability of readings in one small area. The variability is due to the ground cover being surveyed i.e. grass, sand, gravel, dead leaves, under trees, open, etc. The meters were provided by Red-Safe and were calibrated and checked before and after use. This error was determined to be less than 10%.

Average Values of Survey Meter Readings in Milli REP's per Hour at Rongelap, Labaredjand Kabelle Islands on October 21 and November 7, 1955

area	height		n Rongelap		n Labared		n Kabelle	
beach	3 feet	closed	2	0.04	4	0.05		
		open	2	0.04	4	0.17		
	1 inch	closed	2	0.04	4	0.08	1	0.1
		open	2	0.04	4	0.31	1	0.4
island proper above high tide line	3 feet	closed	21	0.2	14	1.0		
		open	21	1.3	14	6.4		
	1 inch	closed	30	0.4	21	2.1	11	2.5
		open	30	2.1	21	12.	11	9.3

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Locality Elwha - Henry
Date November 8, 1955 (Tuesday)
Personnel Bonham Held
Lowman Seymour
Weather fair - an occasional scattered
Water conditions light chop

Radiation level(s)

Operations:

Preparing samples
13:0 Held and Lowman off to Henry for overnight stay to collect data and observe crabs.
Prepared for shipment to NYO 16 dried samples collected at Dungeness. See letter of November 9 to Mr. Eisenbud for listing of samples. Carbon copy of same letter to Dr. Bonham.

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Locality Elmer - Henry - Fred
Date November 9, 1955 (Wednesday)
Personnel Bordeaux Held
Lawrence Seymour
Weather fair
Water conditions

Radiation level(s)

Operations:

Packaging samples. Prepared 3 cartons for shipment to AFL including 93 dried bulk samples and plate samples as follow including cards:

FISH	plate nos 16645 - 16897	253
INVERTS	" " 17790 - 17977	188
PLANTS	" " 18536 - 18650	115
Birds & Rats	" " 13762 - 13828	67
PLANKTON	" " 19065 - 19076	2
SOIL	" " 19578 - 19579	2
		627

1015 Held & Seymour returned from Henry
Procured the 14 algal 14 invertebrate and 2 soil samples from Henry. These will be hand carried and are as follows

INVERTS	plate nos 17978 - 17991	14
PLANTS	" " 18651 - 17664	14
SOIL		2
		30

1300 Hand baggage picked up
Cleaned up lab
Made inventory list of AFL equipment
1600 Left Elmer for Fred for tomorrow mornings flight
1730 Word passed that plane would not be in today, hence we will not get out in morning.

*a typewritten list of the 93 bulk samples has been prepared.

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Locality Enewetak to Seattle — Date November 10-13, 1955

Personnel Bonham Held, Forman Seymour — Weather

Water conditions

Radiation level(s)

Operations:

November 10 - Fred Turns around from Kwaj due this afternoon and it is expected that we will leave late this afternoon. Take in day planes were changed and departure scheduled for tomorrow morning. Called Marty Tendler asking that he send a TWX changing reservations out of Honolulu and informing Dr. Donaldson of the delay.

November 11 - Left Fred at about 0830 Stopping at Kwaj for 2 hours. Crossed date line and arrived in Honolulu at 23:50 November 10th

November 11th, second time - Honolulu Sent by Railway Express a duffel bag and one carton containing aqua lung regulators + repair tools, coral shells etc. We were over the 44 pounds per person allowed on commercial tourist fare. Left algae samples for Dawson and visited Iverson Tinker and Doty. During the day Bonham and Forman toured Island with Tanaka. Spent the evening at Doty's home.

November 12th (Saturday) Left Honolulu International airport via PAA flight 724 at 1035 arrived at Portland at 2300 and in Seattle on November 13th at 0025. Temperature 15° and a little snow on the ground.

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Locality _____ Date _____

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

Rougelaps Collingual Samples

Rated Cards	13704-761; 13825-828	62
Fish	16463-708; 16732-736	251
Invertebrates	17607-760; 17789	155
Plants	18355-394; 18403-429; 18437-538; 18551-552; 18608-612.	81
Plankton	19067-074	8
Soil	19489-500; 19502-559 *	70+*
Water	19582-596; 19587-608	27
		654*

* plus sub units of soil profiles

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