

UNIVERSITY OF WASHINGTON
LABORATORY OF RADIATION BIOLOGY
SEATTLE, WASHINGTON

411111

Locality ELMER Date 1 AUG 1958
Personnel CANTREL & CHAMPION Weather Hot
Water conditions CALM Location APFL
Radiation level(s) NORMAL Date 1958-8/1/58-9/20-58

Operations:

Work still progressing on the Collette at a good rate we are getting a great deal of cooperation from HEN and assistance from the Navy. They want to know why it isn't done right now and why our people aren't here ready to go. I am ignoring them thank you. SIM AND I WENT THRU BACK STORE ROOM LOOKING FOR ITEMS THAT WILL GO ABOARD SHIP (CLEANED IT UP TOO). CANT FIND 5 HP PUMP WE ARE SUPPOSED TO PROVIDE METER BLOCKS AND OTHER SMALL ITEMS. WE HAVE SET ^{ASIDE} THOSE BOXES THAT WERE MARKED FOR THE SILVERSTEIN. I AM HAVING ONE PROBLEM THAT IS DECIDING WHERE TO PUT LAB & COUNTING ROOM SINCE I DONT EXACTLY KNOW THE REQUIREMENTS FRANK MIGHT HAVE. THE DECISION MAY HAVE TO BE MADE SOON IF FRANK ET. AL. ARRIVE ON 7 AUG. TIME WILL TELL!!! WE HAVE DECIDED TO CANCEL THE PLANKTON TRIP FOR A FEW DAYS UNTIL THE "OP FEVER" DIES DOWN HERE IT SEEMS LIKE EVERY TIME WE LEAVE THE LAB SOMEONE IS LOOKING FOR US.

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(5) . 76 P.S.
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Locality ELMER Date 2 AUG
Personnel CANTAL & CHAMPION Weather HOT
Water conditions CALM

Radiation level(s) NORMAL

Operations: WORK STILL PROGRESSING ON COLETTE SHOULD
BE DONE MONDAY. AFTER THE WINCHES WERE
PLACED ETC. LOOKED LIKE THE AWNING COULD
HAVE BEEN A LITTLE LARGER THAN THE 20'
CALLED FOR. WE HOPE EVERYTHING IS SATISFACTORY
THE LAB IS STILL HERE BUT HAVE BEEN AT
THE SHIP MOST OF THE TIME.

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Locality ELMER Date 3 Aug 1958
Personnel CANTRELL & CHAMPION Weather Hot
Water conditions CALM

Radiation level(s) Normal

Operations: A & N NOT WORKING TODAY SINCE THEY NOW
HAVE PLENTY OF TIME. STARTED PROCESSING
SAMPLES FROM PONAPE ETC.

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Locality ELMER Date 4 AUG 58
Personnel CANTRELL & COTRANPIAD Weather HOT
Water conditions CALM

Radiation level(s)

Operations:

Spent most of the morning ABOARD SHIP.
DECK WORK FINISHED EXCEPT FOR MINOR DETAILS.
COULD SEE SOME CHANGES THAT MIGHT HAVE MADE
THE SET-UP A LITTLE BETTER BUT WILL LET FRANK
DECIDE IF THEY ARE OK. HEN DID A FINE JOB
AND THEY WERE VERY COOPERATIVE ALSO WORKED
ON SAMPLES THIS MORNING.

MAILED SAMPLES

PLANTS - 91-106

FISH - 570-574, 575-588, 589-602, 603-615,
616-620

INVERT - 83-104

SOIL - UJELANG

ALSO LOGS

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Elmer

Locality Intril & Champion Date Aug 5, 1958
Personnel _____ Weather Hot, little wind
_____ Water conditions calm

Radiation level(s) Normal

Operations:

Finished packaging Ponape & Kapingamaranga samples, all but a few livers which should be dry tomorrow or the next day. U.S.S. Collett is out at anchor so we couldn't do anything aboard ship. Actually, H & N has done a beautiful job and all that we can do is done

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Locality Fimer Date Aug 6, 1958
Personnel Conrill & Champion Weather Hot - mild
Water conditions Calm

Radiation level(s) Normal

Operations:

Again a greater portion of the day was spent cleaning up the lab after completion of Ronape & Kapunga samples. Ed's shipment for Rongelap is here except for 10 carboys. All the others arrived OK!

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Locality Elmer Date Aug 6, 1958 (Cont'd)
Personnel Centril & Champion Weather Hot - fairly calm
Welanders & Weeks Water conditions calm to choppy
Palumbo & Lowman

Radiation level(s) Normal

Operations:

Welanders, Weeks, Palumbo & Lowman arrived EP9 at 0900 and are housed in 128 with Centril & Champion. Part of the morning was spent washing dishes etc.

Checked in with Ernie Wynkoop, Cmdr. Wendell and Clement of DBM. Seven point three and one are in a big rush to get the survey under way so that they can go home.

At 10:00 AM went to large pier to meet ship. Checked in with Captain ^{J.D.} Pitterson as to operation of ship during cruise.

Don had the spectrometer repaired and in working condition before noon.

The probe had gone to Honolulu prior to our flight and was locked up in the Airborne freight warehouse. Sgt Pelot of 71 at Hickam is going to ship it to us on the next flight.

In afternoon collected necessary equipment and supplies for the lab for transport to the ship. Inspected ship and made arrangements for labs to be installed. The shipfitters shop below the main deck will be used for chemistry and the 1st class lounge for counting room.

Champion & Centril have done a good job getting the ship outfitted for the cruise. The winches are installed and a canvas awning on the fantail. All of the boxed gear is aboard.

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Locality Elmer Date August 7 1958

Personnel Carril, Champion, Weeks, Welendz, Weather fair

Pelumbo Lowman Water conditions Smooth

Radiation level(s) _____

Operations:

In morning went to lab to pack for the Collett trip. Took the β counters and the spectrometers apart for shipboard use. Boxed and stored (also inventoried) the extra gear in the laboratory.

H+N is building the new addition on the building so the noise level is fairly high.

Made arrangements w/ H+N to build tables in the shipboard labs and to construct 4 blocks to use on the second winch and the probe unit. Put cable on the two winches after removing the old cable which was very rusty.

Checked with Frank Beebe about getting S&R plugs, caps, and red devil fans.

Talked to Cmdr Wendell about sailing date. Is dependent upon arrival of the probe.

Took the β counters and the spectrometer to the ship in late afternoon and installed in the labs. Made up S&R adapters for use w/ the equipment.

After evening chow went to ship and checked out the gear. Trouble in the analyzer which Don quickly remedied with a new tube.

Set up the chem lab for operation.

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Locality Elmer + aboard the Collett Date Aug 8 1958
Personnel Palumbo, Welander, Weeks, Champion, Weather Rein!
Cannill & Lowman Water conditions medium rough

Radiation level(s)

Operations:

Finished loading the gear from the lab aboard ship.
The probe arrived at 0900 and was installed by our group and H.M. Work on #4 & got batteries for probe. Probe didn't work so Weeks started trouble shooting.
Installed blocks on probe boom of forward winch frame. Got 6 coils, 2 red devils & snakes from Beeks.
Rain was coming down in sheets during the entire operation.
Checked out the compass by running planes and calibrating w/ Co⁶⁰ standards. Calibrated the spectrometer.
Ralph & Art finished cleaning up the lab.
At 2:00 PM boarded ship and headed for sea. A few miles out ran 700' of wire out of aft winch through the metering block and painted the wire at 100' intervals. Then placed the metering block on the forward winch for use with the Nansen bottles.
Revised trip route and put off 300 miles and added 2 more stations. Sea is fairly smooth so we are using less zigzag runs and more N 45 and S 45.
First station #34 at 1752 to 1812. took 8 ml plankton, at 70 M and water samples at 0, 25, 50, & 200 M. Plan to take water samples at 0, 25, 50, 100, & 200 M. has had a foul up on the 1st station.
2nd station #35 at 2145 to 2220. 16 ml plankton from 35 M. took planned water samples.
Spectrometer & coil are working fine - probe snafu. Still working on it but are also taking surface readings with a survey meter.

30.

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Locality USS Collett Date Aug 9 58
 Personnel Weeks, Welander, Council, Champion, Palumbo, Lowman Weather fair (rain at night)
 Water conditions smooth (nobody sea sick so far.)

Radiation level(s)

Operations:

Stations	time	total ml. plankton	plankton depth	Water temp.
35	0121-0200	30	35M	22.5
- 36	0501-0527	12	35	lost 100 M
- 3	0902-0930	35	40	as planned
- 38	1252-1312	20	35	" "

At station 36 the hinge that connects the bottle to the cable clamp came loose and the bottle was lost. Now have 5 bottles. We should get two more bottles before the Silverstein trip.

The shifts we are using are as follows:

Team A Lowman Champion Palumbo 0600-0600
 1200-1800
 Team B Welander Weeks Council 0600-1200
 1800-2400

Here 12 men from the ships crew helping us on 4 hours on and 8 hours off schedule. Payne, Hoyle, Nichols, Creselius, Clemens, Pruitt, Beck, Colquhoun, Eiswirth, Kunkler, Justice and Chesley are the assigned men.

At 2:00 PM sent message on station through #38 to Klement.

In early afternoon one of the crew became very ill and had spasms so at 1600 we headed for Eniwetok. Arrived at Eniwetok at 2310. Had sent message requesting Klement to meet us.

Ed called by radio when we arrived in Port and requested we provide him with some of their supplies. Klement was also in the plane so we talked to him and informed him of our mission to Eniwetok for fuel. Will discuss data w/ Klement

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(8)

78P8

Locality SEATTLE TO PARRY IS. Date 6-9 AUG 58

Personnel BAKER, BONHAM, COLE, EISLER, Weather _____

GESSEL, HELD, JOYNER, KENADAY Water conditions _____

KIMMEL, RICHARDSON, WALKER

Radiation level(s) _____

Operations:

Left Seattle 2100, 6 VIII PAA 823. Arr. Honolulu 0730. Checked in HIKAM 0830. Departed HIKAM 1458 on MATS 627 of the 7th A/2190409. Arr. Finsbetok 1130, 8 VIII.

9 VIII all but Kenaday, Kimmel, Richardson, Walker to Parry I (9000 ft clearances for the four).

Held made final arrangements for Rongelap trip while others started checking equipment + supplies + packing.

Viper kept through Harry Ryland + T-1 arranged to have Kenaday et al admitted to Parry I under escort. Held required to pick them up + escort them from Fred to Elmer (1600-1715).

Cmdr Wendell, J-3, T-1 making all arrangements for trip support + will be contact man at Elmer while ship is at Rongelap. He + Maj. Monaca will also get aerial photos of Rongelap, Finsbetok, + Kabelle Islands.

Col. ~~Aszek~~ ^{Noseck} (something?) J-1, T-1 notified HICOM Trust Territory, CINCPAC, + Mr Neas, District Administrator Majuro by TWX that trip was proceeding as scheduled. J-1 had previously been informed by Neas that T.T. representatives would meet the ALOTC at Rongelap.

1900 Msg from Lowman to Klement that Collette coming in for hospital care. Lowman requests meeting with Klement. Finally got together with Klement about

751.5

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Locality _____ Date 9 AUG (cont.)

Personnel _____ Weather SHOWERS

_____ Water conditions _____

Radiation level(s) _____

Operations:
2130. Klement & Held waited at personnel pier until 2330, finally contacted Lerman by voice radio through TV-3 at about 2345 - they will be in 11 AUG. to refuel & will be ashore for a short time.

Met Dr. St John this morning. His future address will be Chatham College, Pittsburg, Pa. Baker & St John spent a couple of hours to see & St John checked Bakers Key to Bumples Plants.

70P4

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Locality E Imer Date 10 AUG

Personnel Baker, Beckman, Cole, Eisler, Weather Rain - Showers

Gessel, Held, Jagers, Water conditions

Kennedy, Kimmel, Richardson, Walker

Radiation level(s)

Operations:

Continued checking equipment + packing.
Walker built boxes for plant nutrition experiment
to be left set up at Eniwetok.

ALOTC arrived this evening loaded with
equipment from Bikini. All hands went down to
look her over - met mate, Mr. Demstad (spelling?).
ALOTC expected to be ready to start loading for
Rongelap trip by 1300 tomorrow.

Dr. Stone arrived today & spent a few
hours at the lab. He is continuing collections of *Drosophila*
in the Marshalls & Carolines - Rongelap is included
in his itinerary.

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Locality VSS Collett Date Aug 10
 Personnel same as Aug 9 Weather fair (rain before dawn)
 Water conditions smooth

Radiation level(s) _____

Operations:

Station	Time	total ml. plankton	depth of plankton	water sample
39	0635-0653	22	35M	as planned
32	0952-1022	8	"	"
31	1320-1400	14	"	"
29	1830-1851	10	"	"
28	2152-2212	12	"	"

On stations 32 & 31 collected samples (1 liter) at all depths for Libby and same size ^{depths} for us. On 32 collected 5 gal surface H₂O for Harley.

On station 31 the ship stopped for the sampling and for some reason the screen came up again. The probe was broken off when it hit the screen - we also lost ~ 150' of probe cable. We almost lost the plankton net too. The screen put a mighty dent in the plankton cable ~~and~~ weight. We still taking the surface readings with survey net.

Ralph put on a safety line and went down to look for the probe. Nothing on the screen.

Sent second message to Klement on stations 39, 32, & 31.

501.6

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Locality E Linn Date 11 AUG 58

Personnel Same as 10 AUG Weather showers

Water conditions _____

Radiation level(s) _____

Operations:

AM. Packing gear, final arrangements for last minute supplies through Conde Wendell who turned us over to Cornish (H+N) who in turn turned us over to Cornish (H+N shipping & receiving). Cornish had all items on list submitted assembled & packed and sent man with fork lift & packing materials to EMRL to move Bengayan material to place.

Met Capt. Fosse about 0830 discussed ^{placement} ~~storage~~ of tents, reefer &c — all essentially as had been arranged by Donaldson.

1300 tents, water tanks, reefer, tables, &c started to be loaded. 1600 equipment & supplies loaded.

Personnel scheduled to board 0930 tomorrow departure at 1000.

Lanning, Wabanday, Palumbo, Weeks, Champney, Condit in for about an hour this morning not much time for talking but all is going according to schedule & trip expected to be completed 16 AUG.

0830-1100 Walker, Gessel, Boham, Baker to Lupton I. to collect soil for plant nutrition experiments to be left set up at Eniwetok.

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(2)

Locality USS Collett Date Aug 11 1958
 Personnel Weeks Welander Palumbo Weather fair
Champion Council & Lowman Water conditions smooth

Radiation level(s)

Operations:

Station	Time	Total ml Plankton	Depth of Plankton	Water samples analyzed
27	0120-0140	14 ml	35 M	0, 25, 50, 100, 200 Meter
13	0503-0523	12 "	"	0, 25, 50, 100, 300 M
1	1252-1312	15 "	"	" " " " "
37	1602-1632	10 "	"	" " " " 200 M
2	1937-1955	14 "	36 M	" " " " 300 M
4	2245-2310	20 "	36 M	" " " " "

became fouled in water bottle.
 One net torn beyond repair. Processed & counted
 samples. Samples being taken with greater efficiency.
~~net~~ The crews, both navy and our own
 profit by experience. Travelling more rapidly between
 stations - 19 knots.

The water bottles have given us occasional
 trouble & need some work after every station.
 New net lost when snap became unhooked
 while washing out net. Using Clivice from now on
 to attach net.

Results to Date

Sta #	Plankton d/ml/cc	Surface d/ml/l	25 M d/ml/l	50 M d/ml/l	100 M d/ml/l	300 M d/ml/l	above surface at 5' m/hr
13	2560	72	0	0	0	180	0.12
1	3320	1300	1100	52300	0	370	0.30
37	27,100	37,000	35,600	42,400	3900	3900	0.34
2	34900	53400	50,500	157,300	5,400	6000	0.27
4	190,000	218,000	202,000	85,000	1740	4300	0.20

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Locality USS Collett Date Aug 11
 Personnel S. Dine as Aug 9 Weather fair
 Water conditions smooth

Radiation level(s) _____

Operations:

Results to date

Station #	Plankton d/m ³ /cc	Surface d/m ³ /l	25M d/m ³ /l	50M d/m ³ /l	100M d/m ³ /l	300M d/m ³ /l	(5' above H ₂ O) Surface r in m ² /hr
34	13,000	255	801	96	—	331	0.14
33	2,600	1,250	234	931	4,560	0	0.11
35	15,700	9,220	1,620	11,400	8,470	365	0.06
36	125,000	44,400	46,800	157,000	—	9,180	0.15
3	851,000	33,100	53,100	20,300	15,400	3,190	0.22
38	213,000	75,500	101,000	47,400	1,690	7,110	0.25
39	310,000	59,800	69,800	23,000	6,260	28,000	0.21
32	18,700	5,500	4,970	28,300	13,700	8,300	0.21
31	35,500	2,490	9,040	11,300	2,190	3,760	0.30
29	5,650	130	0	0	0	0	0.175
28	5,110	160	65	0	0	0	0.08
27	410	130	0	0	0	—	0.14

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Locality ELMER - ELMER to Date 12 AUG 58
Rongelap
Personnel same as 10 Aug Weather clear
Water conditions Calm

Radiation level(s)

Operations:

Departed shortly after 1000 - exceptionally calm weather - only two of party on Diarrhama!

Discussed revision of proposed schedule with entire group - decided to proceed as per originally proposed schedule except that decision as to date of departure from Rongelap I. to Enebek I. will be reserved until night of 15 AUG & be dependent on progress made.

Mr. Willis, ship's engineer, is an amateur shell collector with a fine collection & considerable knowledge of Mollusca. He showed us all that portion of his collection that he still has aboard - a pleasant & profitable experience for all of us.

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Locality U.S.S. Collett Date Aug. 12, 1958 (Tuesday)
 Personnel Lowman, Welles, Palumbo Weather Fair
Castroil, Champion, Welandor Water conditions Smooth

Radiation level(s)

Operations:

Station	Time	Total ml Plankton	Depth of Plankton	Water Samples
5	0210-0230	14	35	0, 25, 50, 100, 300 M
7	0520-0540	24	"	" " " " "
8	0834-0854	6	"	" " " " "
6	1141-1201	6	"	" " " " "
9	1447-1507	12	"	" " " " "
11	1755-1815	10	"	" " " " "
16	2100-2115	15	"	" " " " "

Travelling 19 knots between stations. Taking fathometer readings at each station. Bombardier consumption reduced.

Flying fish found on board between stations 7 & 8. Processed liver, muscle, viscera, & Bone.

Results to date.

Sta #	Plankton d/ml/cc	Surface H ₂ O d/ml	25M H ₂ O d/ml	50M H ₂ O d/ml	100 M H ₂ O d/ml	300 M H ₂ O d/ml	Above Surface Y & mcp
5	21,900	18,300	16,300	710	97	5700	0.15
7	12,600	13,200	17,900	1460	1040	3330	—
8	9110	3830	3510	851	1616	2050	0.22
6	7110 7110	72	460	460	1616	1870	—
9	1070	1700	640	1160	130	460	0.40
11	1060 1060	137	0	0	0	772	0.14
16	4670	4950	1800	1360	805	2830	0.22

✓ FSR Log

12 Aug 58 (Wed)

Collected foliose samples of *Scaevola*, *Coccoloba*, *Trinacria* + *Conchocarpus*, and *P. Conchocarpus* mats at site of Sui pit 21 on South side of island for redescription and mineral analysis.

Marked twigs of *Scaevola* for future checks on leaf initiation and leader growth.

RBCW.

Beginning in afternoon after arrival at Rongelap a sail out was begun seaward side opposite village. All necessary soil samples taken in short haul through other portions of the island made to locate sample areas. Morning was spent on board ship setting up lab and packing equipment. JPL

Joyner-Eisler

Richard D. Atkinson 7 Aug 13 '58
1:15 - 5:10 PM. walked to NE end of Rongelap Is. and back, going back forth across island. Saw following species of birds:

- | | |
|--------------|--------------------|
| White Tern | Golden Plover |
| Noddy Tern | Tomatoe |
| Sooty Tern | Red-tailed Tattler |
| Crested Tern | Brown Booby |
- No birds found eating *Scaevola* of white + Noddy Tern feeding off seaward side. Plant to the left of beach in northern NA on island. Let do some stay here all year at Rongelap.

Aug 13 1958
Arr. Rong. 11:30
1500 - Scouted fish on seaward reef - caught 45 - spec. of Surgeon, damselfish and spangul fishes. Returned to ground at high tide - weighed & directed until 2100.

Rongelap

13 Aug. 1958

Selection of a site for digging a soil pit, placing a pyrometer into operation and collection of plant parts in this immediate vicinity was accomplished. The soil pit revealed several buried soil profiles indicating submergence of past vegetation. This was relatively near the seaward side of the islet and the vegetation from the ocean in to about 75 yards appeared relatively undisturbed. The vegetation composing this band consisted mostly of *Scaevola*, with *Messerschmidia*, *Guttaria*, *Pandanus* + *Coconut* as dominant with much of the parasite dodder being present on many of these.

Jim Krueger

R. KENADY 8/13/58
DAYS ACTIVITIES (1500-1730)
ASSISTED DAVE COLE AND
SPAN GIBSON PUT IN
ONE LYSIMETER TANK
WITH THREE PLATES AND
ONE SOIL PIT ON
SEWARD SIDE OF
ISLAND (RONGELAP)
DURING LUNCH
LEARNED IDENTITY OF
A FEW NATIVE TREE
SPECIES AND SOME
OF THE LESSER VEGETATION
TOOK PH AND CONDUCTIVITY
READINGS ON SOIL SAMPLES
COLLECTED FROM PIT
MENTIONED ABOVE

Baker - Aug. 13, 58

AM SET UP LAB + LIVING QUARTERS

PM COLLABORATING WITH WALKER, BESSEL, COLE,
KIMMEL, + KENADY ON PLOT DIGGING COLLECTING
PLANT
SAMPLES WITH WALKER (SCAEVOLA, GUSTARDA, COCOS,
TRINUMFETTA, CASSYTHA). IDENTIFIED SEVERAL
NEW PLANTS

August 13, 1958

Three lysimeter discs were placed at 1" depth
near pitole # 21. Appared to be functioning normally. Spent
some time with Bessel to locate new lysimeter locations and
disc placements.

DWC

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Locality Arrived Rongelap 1145 Date 13 AUG 58
Personnel Smith & 10 A.G. Weather CLEAR
Water conditions CALM

Radiation level(s)

Operations:

Sea was so calm that we started unpacking & setting up lab immediately after breakfast. Reached at Rongelap I. about 1140. Trust territory people not here. ^{Bwico Soap} ~~Bill~~ (Billiet's brother) who is operating radio acted as interpreter. He had been informed of our arrival by Mackenzie. John & Billiet are at Congress & Major - not expected to return before our departure. Carte blanche given by Rongelapese for soil collection plots, fertilizer plots, bird shooting & fish collections by either poisoning or blasting.

Afternoon: Tried fish collection by blasting & poisoning on seaward reef - no success with poison (2 or 3 surgeon fish). By blasting got 45 fish, mostly surgeon, some damselfish & parrot fish & one or two specimens each of other species.

Soil pit, lysimeter & plant collections made on seaward side of island on transect along road which starts from church. Several plants marked to check rate of growth & leaf initiation.

Richardson identified the following birds in walk around NE end of island: White tern, Noddy tern, ^{Black naped} ~~Spectacled~~ tern, Crested tern, Golden Plover, Turnstone, Wandering Tattler, Brown Booby. No nests found. Hundreds of White (fairly) & Noddy Terns feeding mostly on seaward side.

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Locality U.S.S. Collett Date Aug. 13, 1958 (Wed.)
 Personnel Lowman, Control, Palumbo Weather Fair
Webb, Champion, Welandor Water conditions Smooth

Radiation level(s)

Operations:

Station	Time	Total Plankton	Depth Plankton	Water samples
10	0014-0034	10	35 M	0, 25, 50, 100, 300
17	0314-0334	8	"	" " " " "
18	0633-0656	10	"	" " " " "
22	0930-0950	8	"	" " " " "
19	1250-1315	10	70	" " " " "
15	1651-1716	10	35	" " " " "
20	2045-2100	8	"	" " " " "

Injured ϕ sooty tern landed on deck.

Results to date

Sta. #	Plankton d/m/cc	Surface H ₂ O d/m/l	25M-H ₂ O d/m/l	50M-H ₂ O d/m/l	100M-H ₂ O d/m/l	300M-H ₂ O d/m/l	5' above Surface γ m/r/hr
0	1580	65	0	0	0	0	0.20
7	1270	770	620	0	97	0	0.13
8	1740	194	0	0	0	0	0.15
2	1600	497	0	90	0	720	0.24
9	8320	6710	6840	9440	9010	2460	0.70
5	4060	1210	4290	695	920	2720	—
20	1510	0	0	0	0	0	0.14

FOR OFFICIAL USE ONLY

DATA FROM WATER SURVEY OF DANGER AREA DURING
OPERATION EASTPACK-ABOUST 1958 (Report #2)

STATION NR	GEOGRAPHICAL COORDINATES		SURFACE	25m	WATER SAMPLES			300m	STATION dpm/cc	EXT. CALCULATED mc/hr
	Deg-Min N	Deg-Min E			dpm/110m 50m	100m	180			
13	10-50	162-40	72	0	0	0	180	2560	0.12	
1	11-40	162-40	1300	1100	52,300	0	370	3320	0.30	
37	11-40	161-50	37,000	35,600	42,400	3900	3900	27,100	0.34	
2	12-30	161-50	53,400	50,500	157,300	5,400	6000	34,900	0.27	
4	13-20	161-50	218,000	202,000	85,000	1740	4300	190,000	0.20	
5	13-20	162-40	18,300	16,300	710	97	5700	21,900	0.15	
7	12-30	162-40	13,200	17,900	1,660	1040	3300	17,600	-	
8	12-30	163-30	3630	3510	851	1610	2050	9110	0.22	

Counted 11 Aug 58: Station Nos 13, 1, 37, 2, 4. 12 Aug 58: Station Nos 5, 7, 8.

NOTE: Data are preliminary and uncorrected. All above are dpm gross beta.

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R/minutes 8/13/58

UNIVERSITY OF WASHINGTON
LABORATORY OF RADIATION BIOLOGY
SEATTLE, WASHINGTON

Locality Rongelap I. Date 14 AUG 58
Personnel same as 10 Aug Weather 0.58 in. rain 15:30 - 17:30
Overcast, showers in afternoon
Water conditions calm

Radiation level(s)

Operations:

Algae collected from seaward reef - partial collection from lagoon side (more needs to be done there)

Fish collected by blasting on lagoon side & by trawling from DUKW from Rongelap to Busch Is' Invertebrates collected in same areas as fish collections.

Two more soil pits along transect from church to seaward beach.

Lysimeter with ⁶ plates at 2 depths set up at profile 22.

6 1 foot square plots set up for fertilizer studies with corn & tomato seedlings. Two $\frac{1}{2} \times \frac{1}{4}$ chain plots established for KCl fertilization near plot 22 - fertilization delayed because of rain.

Richardson to Bikojanito & Rago ddagin Is. N of Rongelap I. Collected ^{Black naped} ~~Spectacled~~, Noddy, & White Terns. Only one nesting bird found. 24 mouse traps set.

2200 checked trap line (2 rats caught still living) & hunted crabs. Two large Coenobita found & taken.

Mixed rain gauge & wind direction indicator set up. Hygrothermograph aboard ship. Still undecided as to best location for weather instruments. Rainfall records taken aboard ship this date.

Missy Noseck to Keld: "NEWS REQUESTS"

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701.4

Locality _____ Date 14 AUG (CONT)

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

CANCELLATION PARTICIPATION MACKENZIE AND MORRIS
RONGELAP ECOLOGICAL STUDY DUE LACK TRANSPORTATION
PLUS OTHER NEED ELSEWHERE MACKENZIE.

REPLY: HELP TO NESECK: "REGRET CANCELLATION
PARTICIPATION MACKENZIE AND MORRIS. REQUEST INSTRUCTIONS
FROM NESE REGARDING PAYMENT FOR RONGELAPENSE LABS.
REFER LETTER MUCKER TO HELP JULY. BELIEVE COPY IN
YOUR ~~BE~~ POSSESSION."

7679

UNIVERSITY OF WASHINGTON
LABORATORY OF RADIATION BIOLOGY
SEATTLE, WASHINGTON

Locality U.S.S. Collett Date Aug. 14, 1958 (thurs)
 Personnel Lowman, Palmko, Cantrel Weather Fair to stormy
Champion, Wells, Welander Water conditions smooth to rough.
gusts to 39 knots

Radiation level(s) _____

Operations:

Station	Time	M/L Plankton	Depth Plankton	Water samples
21	0034-0054	8	35 M	0, 25, 50, 100, 300 M
23	0434-0459	16	"	" " " " "
24	0905-0930	10	"	" " " " "
25	1244-1259	15	"	0 25 _____
26	1544-1604	8	"	0, 25, 50, 100, 300
14	1920-1945	12	"	" " " " "
12	2230-2255	12	"	" " " " "

Station 25 water sampling incomplete because of squall - winds up to 39 knots. Water bottle cable angle to surface of water was about 30° or less - could not get the bottle down to any depth.

END

Processed & counted samples, sent in the usual message. Received no message.

results to date:

a.#	Plankton d/m/c	Surf. H ₂ O d/m/l	25M-H ₂ O d/m/l	50M-H ₂ O d/m/l	100M-H ₂ O d/m/l	300M-H ₂ O d/m/l	5' above surf Y mcr/hr
1	1770	319	0	60	0	0	0.18
3	293	0	0	0	0	0	0.16
4	3410	252	97	130	0	0	0.20
5	6780	178	0	0	0	0	0.17
6	5060	0	463	0	0	0	0.22
1	1940	0	0	0	0	198	0.10
2	5410	640	1030	1930	0	360	0.175

- 8-6-58^{Wed} With Held, Gessel, Eisler, Joyner, Baker, & Kimmel, left D.W. in 2 taxi cabs about 7 pm. Arr SeaTac 8 pm. Paid one taxi driver \$6.80. Departed SeaTac 9:30 pm; arr Portland 10:30; departed Portland 11 pm. Arr Honolulu 7 am on 8-7-58Th. Departed Hickam 3 pm. Arr Eniwetok 11 pm on 8-8-58^F. Slept "Coral Cables".
- 8-9-58^{Sa} 10:40 am T-boat to Parry. Located gear at Lab (EMBL) and started packing for Tues departure
- 8-10-58^{Su} At Lab, studied sea cucumber collection. Continued packing.
- 8-11-58^M with Gary, Dick, Stan, & Frank departed in M boat for Paptan I, 9:30 am. Arr. 8:50 am. Saw 3 monitor lizards 3 feet long, slender, climbing trees, noisily scratching the bark. Returned Parry I. 11 am. Continued packing. Loaded most of gear on Aloto. Volley-ball in evening. St John (Harold) will teach and televise at Chatham College for Women, Pottsburg, next year
- 8-12-58^{Tu} "Aloto" left Parry I. pier 10 am smooth trip in calm weather, almost clear sky. Started rigging plankton net. Flying fish.
- 8-13-58^W finished rigging plankton net. Arr. Rongelap 11 am, beached at village. Blasted and poisoned fish at high tide on outer reef at 3 pm. Blasting fairly successful; poisoning, not collected cucumbers and Yarum, other snails. Worked up invertebrates including those collected by Willis, Engineer, in evening.
- 8-14-58Th 10 am Blasted fish on reef on low tide; good take. No help from Rongelapese, apparently due to faulty communication. Invertebrates collected by others and by us, worked up, that is, identified, measured, dissected, bagged, labeled, and frozen. Fishing, trolling, rod & reel, from DUKW, 1540-1740 hours, running north inside reef to slightly beyond Busch I. Tim dived, collected 2 cucumbers. Prepared invertebrates.

END

R. M. KEARNEY

8/14/58

DAYS ACTIVITIES

0800 - 2200

ASSISTED STAN GOSSEL & DALE COLE.
RPT IN LYSIMETER IN CROONUT GROVE
BEHIND VILLAGE. CHECKED LYSIMETER
RPT IN YESTERDAY TO NOTE EFFECT OF
TODAY'S RAINFALL. DUG SOIL PITS IN
CROONUT GROVE (#22) AND SOUTH OF
CROONUT (#23). SAMPLED PITS, TOOK MONOLITH
SAMPLES OF PROFILE IN PIT #22. PUT
IN WELL POINTS AND COLLECTED WATER
AT PIT #22. TOOK pH AND ~~TEMPERATURE~~
READINGS OF SOIL SAMPLES AND
CONDUCTIVITY MEASUREMENTS OF
GROUND WATER TAKEN AT WELL
POINTS. COLLECTED A FEW SHELLS
FROM ROOF AREA AT WEST END OF
ISLAND. DOOPED !!

14/140 50

Esler

9

AM Collected fish (Borling) with Bonham & Jayner

PM Collected fish & dissected (Jayner)

Thursday, August 14, 1958

Dug soil pits and collected soil samples on transect seaward from village. Also put in well points and collected ground water from two pits. Helped with fertilizer placement and with hypsometer study. Rained very hard in the afternoon.

Esler

UNIVERSITY

Rongelap

August 14, 1958

This day, algae collections were made on the seaward and lagoon sides of the inlet respectively. Many new specimens were found on the seaward side at the edge of the coral ridge. In the afternoon, a fence was built to protect a tomato-corn plot. Also, a new soil pit was dug revealing a rather dark soil to considerable depth. Preparation of the algae was made in the evening.

John Kimmel

30

Walker

Thurs 14 Aug 58

At site of soil pit 22,

Laid out 6

1 ft² plots, treated some with

fertilizers, and planted corn + tomato seedlings. Also fenced

around the plot area and set traps for rats around

fence (with help of GB + JK). No rats caught.

With help of GB, laid out 2 plots $\frac{1}{2} \times \frac{1}{4}$ chain for

KCC fertilizer in the near vicinity of ~~soil~~ above pit 22,

but did not fertilize because of rain.

Collected a green Pandanus fruit from tree about 30' north of pit 22.

Lysimeter study

located 6 lysimeter dishes adjacent to profile 22.

Noted the apparent satisfactory operation of the lysimeter setup at profile 21.

DWC

Aug 14

also

14 AUG

- ii. Algal Collection, seaward reef (and some lagoon).
- i. Working with Walker and solo men - setting traps, putting in fence around tomatoes and setting up fertilizer plots.
- iii. Dined Working up algae collection - 1.5 gm samples, identification, putting specimens in formaldehyde (2% in seawater)

F. Richardson Aug. 14.

Went to "Duck" to Bumbajarite and Rongelapia Islands about 1 x 3 miles north of Rongelap Village. Collected * ~~Small~~ ~~Common~~ Noddy + white Terns for skins, skeletons, stomach contents, muscle + kidney samples. Curiously found just one bird nesting (one egg) - a Common Noddy. Is this the start of a full nesting season or maybe later? Set 24 mouse traps for rats with results if any, still to be seen.

* Black-noddy

7/11/68

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Locality RENCELAPE IS - LAGOON TRANSECT Date 15 AUG 58

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

0600 - 0800 Trolling from DIKU (one ~~bar~~ barracuda, 2 groupers, 1 surgeon).

0900 - 1730 ^(KBUEU) Transect across lagoon for plankton & bottom samples. One of those days when nothing works right. First, ship stuck on beach took 1/2 hrs to pull her free. Second pump which had checked out OK yesterday failed to operate - finally rigged it on well deck & with constant attention from Willis were able to get 40 gal per minute - not enough for good samples. Third, bottom sampler lost; Fourth, anchor cable fouled around f-likes & shank - took over an hour to free it before ship could beach.

To get a decent sized sample for counting & radiochemistry KB will make tow from DIKU tomorrow. A new pump is being rigged for a second attempt at getting quantitative samples along a transect.

Records are being kept on a chart on the bridge.

RE & T.J. stayed aboard ship dissecting fish from previous catches plus sharks caught while collecting plankton.

DC, SG, RW, GB, JK, FR, RK ASHORE
Lygimeter set up at pit #23 & one started at pit #24. Leachate collected at pit #21. Treatment of 3 ^{at 1" depth} ~~discards~~ at both #21 & #23 (1) with K, (2) with N (3) untreated.

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Locality _____ Date 15 AUG CONT.

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

Conductivity + pH measurements made on leachates.

Soil pit installation completed on Village
to seaward reef transect. Well points put in at
pits + ground water collected - some potable water.

SB + R.W. toured village gardens - many plants
are chlorotic.

Tomatillo-corn fertilization plot checked +
photographed. One rat caught at plot.

Scaevola + Messerschmidia leaves from
terminal + basal regions collected for comparison
of mineral content.

FR collected turnstones + Golden Plover.
Saw 4 Reef Herons. Saw about 25 turnstones
+ same number of Golden Plovers - believes these
to be early migrants.

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7624

Locality U.S.S. Collett & Elmer Date Aug 15, 1958 (Fri)
Personnel Lowman, Palumbo, Weeks Weather Fair
Cantril, Champion, Welandr Water conditions Smooth

Radiation level(s)

Operations:

~~Returned to dock~~ Collett into lagoon & docked 1st at oil barge about 0700. Went in on Captain's gig & met with Ernie Wyncoop, later, Cmdr Weland & Al Clements. We were concerned about the use of the Collett for the next phase of the track but met with no encouraging response. We feel that the data should be tied together as well as possible & the chances of this fall in the data between the 2 trips become separated.

Started to unload ship & completed same in less than 8 hours.

V-Spectrometer had not been working properly the last 24 hours of the trip. Repairs are under way.

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DATA FROM WATER SERVICE OF BARNER AREA DURING
OPERATION HARDAGE-ARGENT 1958 (Report #5-71a1)

STATION NR	GEOGRAPHICAL COORDINATES		WATER SAMPLES-dpm/liter					PLANKTON dpm/cc	EXT. CALYPS nr/hr
	N Deg-Min	E Deg-Min	Surface	25m	50m	100m	300m		
25	10-00	164-20	178	0	0	0	0	6780	0.17
26	10-00	163-30	0	463	0	0	0	5060	0.22
14	10-50	163-30	0	0	0	0	0	1940	0.10
12	11-40	163-30	640	1030	1930	0	360	5410	0.18

Counted 14 Aug 58: Station Nrs 26, 26, 14. 15 Aug 58: Sta Nr 12.

NOTE: Data are preliminary and unevaluated. All above dpm gross beta.
Station Nr 12 is last station of survey.

Air Mail to
Dr. Lawrence R. Donaldson
Department of Biology Laboratory
University of Washington
Seattle, Washington

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Dr. Donaldson

5

76.0

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Locality Rongerop Is. Date 16 AUG 58
Personnel Same as 10 Aug. Weather _____
Water conditions _____

Radiation level(s) _____

Operations:

Trolling 0600 - 0800

FR prepared skins of rats & birds, observed Crested Terns feeding - none taken. Set up rat trap line.

Algal collections completed on lagoon side by JK + GB.

Fish collected at Northern end of island by blasting by TD + RE - Squirrel fish & snappers taken in large numbers. Specimens prepared in PM.

Resampling of plants ^{& soils} from same areas as in Feb - Mar '58

RW made increment borings & checked nitrate content of *Scaevola* & *Messerschmidia* - latter very high (this checked with results of soil analyses from Feb-Mar survey).

Several well points established & water collected.

Selected site for weather station East of ship landing at high point above wash area. Area cleared with OK & help from Bwio & Kenny but owner of land decided he should have OK from the King of the Marshalls before final installation is made. Therefore a standstill until Monday, 18 Aug when Bwio will contact the King by radio. Checked ^{UNIV. OF WASH.} ^{UNIV. OF} out air operation & maintenance of instruments.

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7/13

Locality _____ Date 16 AUG (CONT)

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

Invertebrates dissected & KB made plankton
tows from DiKW - 1/2 meter net, 65 mesh/in -
good hauls.

Information obtained from Jabwe, local doctor,
on use of local plants for medicinal purposes.

Scaevola, ~~Acacia~~, Dodder, Messerschmidia, Guettarda,
Allophylus all have specific uses & the list of
plants was by no means exhausted in the time
available.

Made arrangements with Benio to obtain
~~meats~~ 25 daily rations exclusive of imported items
which are primarily rice & C-ration. He is also
working up a list of food items & methods of
preparation.

This is the big Pandanus^{us} season - Pandanus
fruit are being collected from all over the atoll -
primarily Rangelap I. & Eniaotok I. The pulp
& juice are extracted from roasted keys &
the resultant extract is dried in sheets for
future use ^{is} the equivalent of "ketchup."

Breadfruit are plentiful on the trees
but not quite ripe yet. Papaya fruit are beginning
to appear. Observed first hand pigs feeding on
Macaoda fruit.

Mail plane in with P. Stone from Genetics
foundation who stayed ashore about 2 hrs.

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Locality Elmer Date Aug. 16, 1958
Personnel Lowman, Palumbo, Cantrell Weather Rain, etc.
Weeks, Champion, Welander Water conditions Fair

Radiation level(s)

Operations:

Cleaned up storeroom area & Porch - the latter left in a mess by the Rongelapese.

Continued efforts to get Country equipment in shape at the lab.

Set up Resin columns in cold room (6 in all)

Collett left at 12:00 noon today.

The addition to EMBL is almost ready & will give much needed bench space and storage facilities.

Cleaned and rearranged the storage room. Fine job by Welander and Champion. The entire Lab now is in spic and span shape.

Lowman called out of movie by Admiral Tyree to discuss the Collett Survey. We all dropped into 119 to check with Al Klement who had been asked about lack of fish data. We all emphasized the difficulty of catching fish at the speed travelled between stations and the poor luck of the fishermen aboard. Al understood completely and sent a Tux explaining the situation. This Tux is being copied for our files. Will send a copy to you today.

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Locality Rongelap I. - ENIATOK I. Date 17 AUG 58
Personnel Same as 16 Aug Weather Clear
Water conditions Calm

Radiation level(s) No significant differences from MAR 58 levels.

Operations: Trolling 0600-0800
ALOTO
Rongelap I. - departed for Eniatak I. 1500 -
SHIP SECURED AT ENIATOK 1730.

AM - S.S., R.W., K.B., R.K., E.H. & Capt. Fesse to West
end Rongelap I. Survey meter readings, one
soil pit, composite soil sample collected, observations
of pioneering plants made - it appears that both
Scaevola & *Messerschmidia* are pioneers rather than just
Messerschmidia as has been reported in litt. Photos of
seedlings near antenna pole guy wire anchors.

FR collected Reef Tern, in black & white plumage
on north end of Rongelap plus fish Herson had caught
P.E. & J.K. poisoned tide pools on seaward reef
at low tide.

P.M. J.K., F.R., E.H. departed Rongelap I. 1300 by stiff
stepping at islands along the way to observe the birds
& take survey meter readings. Also truffled all the
way with no success. Collected two Geckos at cistern
on Beach Island. Met ALOTO at Eniatak 1730.

R.W. collected *Scaevola* & *Messerschmidia* at pits
22 & 25 for nitrate testing - checked tomato-corn
plot - all growing well. S.G. & K.B. at pit 26 taking
samples & K.B. checked radiation levels on sidewall of pit
with end window survey meter.

1500 ALOTO departed for Eniatak air
& secured on beach 1730. All worked in lab enroute.

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Locality _____ Date 17 AUG (CONT)

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

Kennedy + Tit: accompanied us.
D.C. confined to ship with infected scratches,
headache.

2200 Kennedy, c/o Edge Willis, D.C., RK,
EH to seaward reef for night collecting at low tide.
Many langusta - collected 4 jar samples & 2 jar
eatings. Collected shells - (cones, Prupa, limpets,
& others) - & crabs.

Several Lambis & Strombus (one species
new to all of us) were collected by crew & some
of UW party immediately after arrival of ship -
lagoon side 10-20 ft of water, sandy bottom.

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SEATTLE, WASHINGTON

LRD ✓
mc

Locality Perry Is. Date August 17
Personnel Conril Champion Palumbo Weather fair
Weeks Welander Lowman Water conditions Smooth

Radiation level(s) _____

Operations:

Set up resin columns for 7 samples. 4 Macroplankton, 1 microplankton, and two fish. Wet ashed the samples.

Started drying plankton plates to get dry wts and for second counting of plates.

Oiled extra cable for winch. Made plastic covers for winches. Worked on a sick gamma spectrometer.

Set up the β counters after cleaning the pipe, slides, and counter tubes.

UVE
UVE

764

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SEATTLE, WASHINGTON

Locality Eniaetok Date 18 Aug 58
Personnel Sant & IG AIG Weather clear
Water conditions calm

Radiation level(s)

Operations:

AM. GB & RW resampled plants collected in Mar 58. RK, TJ & RE dug soil pit & sampled soils on seaward side - TJ & RE becoming familiar with techniques used. KB & JK took survey meter readings & collected sea cucumbers. F.H. worked up material from night collection. F.R. collected birds. DC still occupied to ship & also SG both worked in lab.

P.M. KB-plankton tows from DUKW. F.R. prepared skins. TJ, RE, JK collected fish by blasting - lagoon side. F.H., GB, JK collected algae & invertebrates on seaward reef flat & lichen-covered ridges. RK & RW dug second soil pit & collected plant samples.

Kenny & Yiti spent most of morning searching coconut crabs without success. Finally found one this afternoon at first Island North of Eniaetok.

After dinner FR & FH ashore for rat trap setting & rat shooting - set 30 traps. No rats seen. GB collected plants for herbarium specimens.

RW & SG marked soil pits, collected samples - no fruit found. Squash have typical mobile mineral deficiency.

5 rats taken in traps

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SEATTLE, WASHINGTON

ARD
mc

Locality Permy Is. Date Aug 18
Personnel Same as Aug 17 Weather Fair - showers
Water conditions smooth

Radiation level(s)

Operations:
Started resin column experiments. Weighed dried plates, calibrated the β counters with standards and worked on the γ spectrometer which is really kaput after the three power failures aboard ship.
Started recounting the plates. Worked over waste bottles for next trip.

ENTR

RP