

Tritium Laboratory  
October 4, 2014

SWAB REPORT #353

SWAB DATE: 03-04 December 2003

*R/V Nathaniel B. Palmer*  
Radioisotope Vans

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Distribution:  
SWAB COMMITTEE  
Robert Kluckholn

REPORT FOR SWAB # 353

LOCATION : Lyttelton, New Zealand  
 TECHNICIAN: Cecilia Roig  
 VESSEL/LAB: R/V Nathaniel B. Palmer

DATE : 3-4 December 2003  
 STATUS: All areas  
 tested free of radio  
 isotope spills.

SAMPLE #	SAMPLE IDENTIFICATION	NET ACTIVITY EXTRACTED	
		<sup>3</sup> H dpm/m <sup>2</sup>	<sup>14</sup> C dpm/m <sup>2</sup>
1	Machine blank	-	-
2	Initial bucket blank (C.O.#1)	0	22
<u>Hydro Lab (See Figure 1)</u>			
3	Stbd sink area	109	0
4	Deck below sink area	33	0
5	Refrigerator RPS00011181 bottom (water only)	0	0
6	Refrigerator RPS00011181 freezer top	9	0
7	Deck of Shop	44	0
8	Deck of Haz-Mat Locker	0	0
<u>Wet Lab (See Figure 1)</u>			
9	Deck inside double door entrance	37	0
10	Workbench aft of sink	43	0
11	Deck below sink area	39	0
<u>Dry Lab (See Figure 2)</u>			
12	Aft workbench/sink area	163	0
13	Inside incubator NSF 016612	168	0
14	Inside incubator NSF 016613	35	0
15	Deck in front of incubators	0	0
16	Inside refrigerator RPS00011177	0	0
17	Inside freezer RPS00011622	29	0
<u>Bio Lab (See Figure 3)</u>			
18	Fume hood aft of port sink	100	0
19	Fume hood fwd of port sink	2,652*	21
20	Deck just inside Thermo Kool door	58	0
21	Walk-In cold room Workbench right of sink	92	0
22	Inside NSF #01905 freezer/refrig top	43	0
23	Inside NSF #01905 freezer/refrig bottom	0	0
24	Inside NSF #16532 freezer/refrig top	0	0
25	Inside NSF #16532 freezer/refrig bottom	93	0
26	Deck below aft sink	82	0
<u>02 Deck/Helo Deck (See Figure 4)</u>			
27	Deck in front of door to st	139	0
28	Deck in front of door to Helo Pad	23	0
29	Deck in front of fwd door to Workshop	51	0
30	Deck in front of door to passageway	83	0
31	Deck in front of passageway door to Workshop	69	0
32	Helicopter deck in front of door to Van #4	1,273*	0
33	Aft side of Helicopter Deck	41	0
34	Port side of Helicopter Deck	305	0
35	Helicopter Deck port passageway	0	0

SAMPLE #	SAMPLE IDENTIFICATION	NET ACTIVITY EXTRACTED	
		<sup>3</sup> H dpm/m <sup>2</sup>	<sup>14</sup> C dpm/m <sup>2</sup>
36	Helicopter Deck stbd passageway	69	0
37	Final bucket sample (C.O. #1)	14	0
38	Initial bucket sample (C.O. #2)	16	0
39	Workbench port of sink in Shop	194	0
40	Workbench stbb of sink in Shop	93	0
41	Deck below sink in Shop	433	0
42	Inside Baxter Cryo-Fridge freezer top	1,319*	0
43	Inside Baxter Cryo-Fridge refrig bottom	25	0
<u>Radioisotope Van #4 (See Figure 5)</u>			
44	Inside fume hood	138	0
45	Top of LSC	88	0
46	Workbench left of sink	257	0
47	Deck between fume hood and LSC	143	0
48	Inside bottom aft refrigerator	127	0
49	Inside bottom fwd refrigerator	174	0
50	Deck in front of disposal area	178	0
51	Workbench across from refrigerators	89	0
52	Deck in front of door	77	0
<u>Radioisotope Van #3 (See Figure 6)</u>			
53	Inside fume hood	2,091*	0
54	Workbench left of sink	250	0
55	Workbench across of sink	101	0
56	Workbench across from refrigerator	54	0
57	Inside refrigerator RPS00011626, bottom	25	0
58	Inside refrigerator RPS00011627, bottom	1,356*	0
59	Deck below fume hood	769*	0
60	Deck below sink	684*	0
61	Deck below disposal area	510*	9
62	Deck in front of door	253	0
<u>Radioisotope Van #USAP90000 (See Figure 7)</u>			
63	Workbench left of sink	85	0
64	Inside refrigerator closest to sink, bottom	3	0
65	Inside refrigerator closest to double doors, bottom	32	0
66	Workbench next to double doors	271	0
67	Workbench across from sink area	0	0
68	Workbench across from refrigerators	60	0
69	Deck at double door entrance	131	0
70	Deck below refrigerators	532*	0
71	Deck at single door entrance	312	21
72	Final bucket blank (C.O.#2)	0	3

#### COMMENTS

The ship has a minor amount of tritium contamination in the Bio Lab fume hood fwd of port sink. Additionally more was found on Helicopter Deck in front of door to Radioisotope Van #4. These areas must be cleaned before any low-level environmental radioisotope studies are performed. Tritium activity was also measured inside the Baxter Cryo-Fridge freezer top in the Helicopter Workshop. This must be cleaned if it is to be used by non-radioisotope scientific personnel. The Radioisotope Van #3 is contaminated with very minor amounts of tritium, mostly inside refrigerator RPS00011627 and inside the fume hood. No action need be taken.

