

UNIVERSITY OF MIAMI  
ROSENSTIEL  
SCHOOL of MARINE &  
ATMOSPHERIC SCIENCE



Tritium Laboratory  
4600 Rickenbacker Causeway  
Miami, Florida 33149-1031

Ph: 305-421-4100  
Fax: 305-421-4112  
E-mail: Tritium@rsmas.miami.edu

Tritium Laboratory  
28 June 2020

SWAB REPORT #1003

SWAB DATE: 18 June 2021

*R/V Kilo Moana and Hawaii Van #23*

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James D. Happell  
Associate Research Professor

Distribution:  
SWAB Committee  
Jill Russell  
Craig Nosse

## COMMENTS TO SWAB REPORTS

12 May 2014

Typical LSC instrument background values for  $^3\text{H}$  and  $^{14}\text{C}$  are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in  $\text{dpm}/\text{m}^2$ . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in  $\text{dpm}/\text{m}^2$ . An error larger than the activity indicates that the activity is not significantly different from zero.

### Criteria for SWAB Results

Category	$^3\text{H}$ ( $\text{dpm}/\text{m}^2$ )	$^{14}\text{C}$ ( $\text{dpm m}^2$ )	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above $1000 \text{ dpm}/\text{m}^2$ should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note:  $^{14}\text{C}$  and  $^{35}\text{S}$  have peak energies of 156 and 167 KeV, respectively; thus  $^{35}\text{S}$  will be registered as  $^{14}\text{C}$  by our counting techniques. Categories A, B and C are not a health hazard.

### Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

$^3\text{H}$ : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

$^{14}\text{C}$ : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing  $^{14}\text{CO}_2$ ). Follow up with wash as if for  $^3\text{H}$ .

### Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D contact your institution's radiation safety office.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 1003

LOCATION: Honolulu, HI  
VESSEL/LAB: *R/V Kilo Moana*

DATE: 18 June 2021  
TECHNICIAN: Charlene Grall

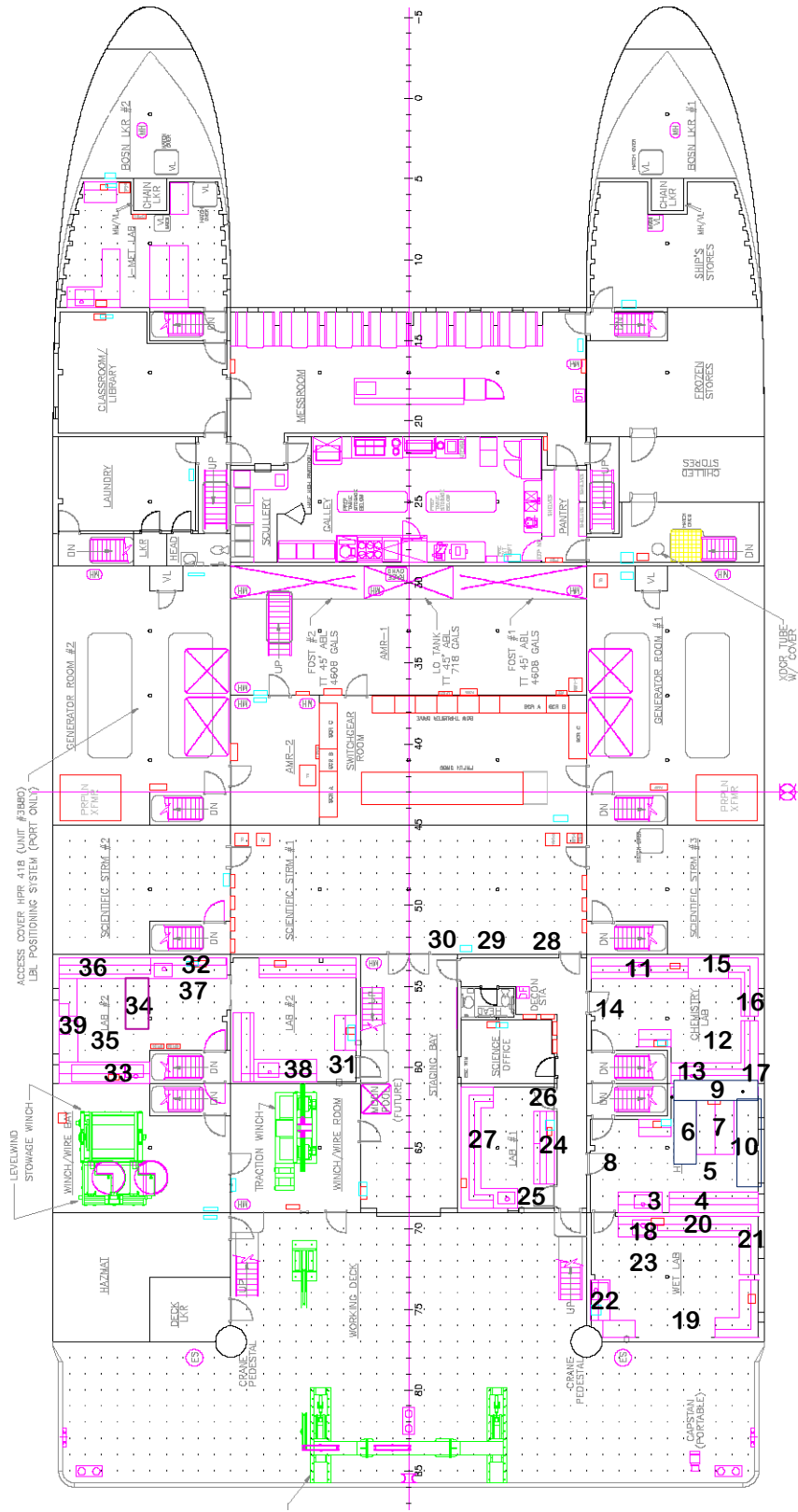
Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank <u>Hydro Lab (Figure 1)</u>	21	± 83	-20	± 69
3	Aft sink area	16	± 101	-11	± 32
4	Aft benchtop	37	± 68	-20	± 58
5	Deck in front of aft benchtop	29	± 50	4	± 27
6	Port benchtop	2	± 27	3	± 37
7	Deck in front of starboard bench	-17	± 99	-1	± 11
8	Deck inside port entrance	32	± 72	-16	± 76
9	Forward benchtop	14	± 84	-12	± 81
10	Starboard benchtop mid-section <u>Chemistry Lab (Figure 1)</u>	4	± 44	1	± 30
11	Forward sink area	51	± 57	-9	± 67
12	Deck in front of aft sink	47	± 71	-28	± 104
13	Aft sink area	36	± 66	-20	± 26
14	Deck at port entrance	40	± 85	-33	± 90
15	Inside fume hood	91	± 59	-9	± 91
16	Starboard benchtop between portholes	17	± 116	-19	± 44
17	Aft benchtop <u>Wet Lab (Figure 1)</u>	49	± 58	-12	± 59
18	Sink area	-8	± 50	-13	± 26
19	Deck inside aft hanger door entrance	-22	± 96	-8	± 38
20	Forward benchtop	12	± 75	-9	± 45
21	Starboard benchtop	60	± 81	-45	± 58
22	Port benchtop	20	± 69	-12	± 23
23	Deck in front of sink <u>Lab #1 (Figure 1)</u>	23	± 54	-3	± 42
24	Starboard benchtop	5	± 83	-24	± 116
25	Deck inside aft entrance	-9	± 33	-12	± 59
26	Deck inside forward entrance	-6	± 90	-7	± 91
27	Port benchtop <u>Science Storeroom (Figure 1)</u>	37	± 77	-21	± 45
28	Inside Cospolich refrigerator 1	231	± 64	-4	± 17
29	Inside Cospolich refrigerator 2	25	± 150	-37	± 59
30	Inside Cospolich refrigerator 3	4	± 75	-3	± 15

Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
31	<u>Lab #2 (Figure 1)</u>				
31	Deck inside entrance	17	119	-20	122
32	Forward sink area and starboard adjacent bench	10 ±	430	-19 ±	55
33	Port aft sink area and adjacent benchtop	-3 ±	0	-23 ±	64
34	Benchtop opposite of port aft sink	13 ±	0	-27 ±	77
35	Deck in center of port lab area	-7 ±	0	-31 ±	39
36	Forward bench on portside	-4 ±	0	-4 ±	84
37	Deck in front of of forward sink	4 ±	0	-28 ±	95
38	Starboard sink area and adjacent benchtop	-9 ±	0	-15 ±	70
39	Port benchtop between portholes	-8 ±	0	-8 ±	35
40	Intermediate bucket blank	27 ±	71	-16 ±	56
	<u>Hawaii Rad Van #23 (Figure 2)</u>				
41	Benchtop left of entrance	-77 ±	99	-18 ±	44
42	Benchtop on opposite wall right side	44 ±	73	-3 ±	23
43	Benchtop on opposite wall left side	159 ±	62	37 ±	33
44	Inside freezer	30 ±	62	-13 ±	101
45	Inside refrigerator	668* ±	83	70* ±	28
46	Sink area and adjacent benchtop	151 ±	65	-30 ±	66
47	Benchtop right of entrance	107 ±	92	-14 ±	82
48	Deck in front of sink area	218 ±	64	14 ±	21
49	Deck inside entrance door	1650* ±	204	40 ±	17
50	Final bucket blank	-4 ±	32	-4 ±	19

### Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. Reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. Minor <sup>3</sup>H and <sup>14</sup>C contamination was found in the Rad Van. No action is necessary, but we recommend cleaning the deck near the entrance to help prevent tracking contamination out of the van.

Figure 1  
 SWAB # 1003  
 18 June 2021



MAIN DECI

# Hawaii Van #23

