



13 September 2013

SWAB REPORT # 697

SWAB DATE: 7 September 2013

*R/V Kilo Moana
and Univ. of Hawaii Radioisotope Van*

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Distribution:
SWAB Committee
Scott Ferguson

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}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 dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (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 dpm/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}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : 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}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 ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

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

REPORT FOR SWAB # 697

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

DATE: 7 September 2013
TECHNICIAN: Cecilia Roig

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank	1	± 8	10	± 34
	<u>Lab #2 (Figure 1)</u>				
3	Deck inside entrance	4	± 0	0	± 0
4	Aft sink area	0	± 0	20	± 36
5	Deck below hydro monitor	0	± 0	44	± 36
6	Foreward sink area	0	± 0	26	± 35
7	Aft sink area	0	± 0	11	± 37
8	Port bench top	0	± 0	16	± 39
9	Deck in front of fwd. sink	21	± 63	0	± 0
10	Deck in front of aft sink	1	± 3	20	± 35
	<u>Scientific Storage (Figure 1)</u>				
11	Inside OCE group Kenmore freezer	30	± 39	14	± 31
12	Inside GE chest Karl freezer	14	± 60	0	± 0
13	Inside Cospolich #1 830.0.014	24	± 35	21	± 33
14	Inside Cospolich #2 830.00.012	0	± 0	32	± 36
15	Inside Cospolich #3 830.00.015	12	± 31	12	± 33
16	Inside Thermo Science	16	± 48	0	± 0
17	Top of Kenmore Karl chest freezer	0	± 0	12	± 37
	<u>Chemistry Lab (Figure 1)</u>				
18	Foreward sink area	0	± 0	26	± 36
19	Aft sink area	4	± 26	7	± 33
20	Deck inside entrance	23	± 36	17	± 32
21	Deck center of lab	32	± 45	4	± 24
22	Inside small fridge	0	± 0	16	± 35
23	Inside fume hood	0	± 0	14	± 39
	<u>Lab #1 (Figure 1)</u>				
24	Deck inside foreward entrance	5	± 34	4	± 32
25	Inside aft entrance	0	± 0	0	± 0
	<u>Hydro Lab (Figure 1)</u>				
26	Deck starboard of center benchtop	13	± 34	11	± 32
27	Deck at entrance	0	± 0	0	± 0

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
28	Sink area	0	± 0	0	± 0
29	Center benchtop	0	± 0	18	± 36
<u>Wet Lab (Figure 1)</u>					
30	Inside Labconco hood	0	± 0	2	± 35
31	Sink area	0	± 0	6	± 36
32	Deck center of lab	0	± 0	11	± 38
33	Foreward benchtop	0	± 0	6	± 40
<u>Miscellaneous Areas (Figure 1)</u>					
34	Deck under eyewash station	0	± 0	0	± 0
35	Deck inside clean power room	14	± 34	11	± 32
36	Final bucket blank C.O. #1	6	± 0	0	± 0
<u>UH Radioisotope Van (Figure 2)</u>					
37	Initial bucket blank C.O. #2	6	± 29	7	± 33
38	Deck at entrance next to hood	*1226	± 103	*72	± 21
39	Deck inside fume hood	*986	± 94	49	± 18
40	Top of LSC	*966	± 93	*59	± 20
41	Benchtop left of LSC	472	± 71	*66	± 27
42	Benchtop across side entrance	494	± 72	*63	± 26
43	Deck inside side entrance	*3556	± 169	*376	± 35
44	Inside freezer next to side entrance	*509	± 59	*475	± 48
45	Benchtop next to hood	*3934	± 171	*147	± 19
46	Benchtop next to side entrance	*1519	± 98	*1221	± 65
47	Deck center of van	*7487	± 246	*990	± 51
48	Inside freezer closest to hood	*15118	± 327	*2183	± 72
49	Final bucket blank C.O. #2	0	± 0	13	± 36

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested on the ship were free from radioisotope contamination that requires cleaning. The radioisotope van had minor ^3H and ^{14}C contamination. No action is required but it is recommended that the van deck be cleaned to help prevent tracking radioisotopes into the ship.

R/V KILO MOANA
RADIOISOTOPE VAN

