

UNIVERSITY OF MIAMI
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SCHOOL of MARINE &
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Tritium Laboratory

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SWAB REPORT # 858

SWAB DATE: 13 May 2017

R/V Pelican and Van #2408-04

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Distribution:
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COMMENTS TO SWAB REPORTS

12 May 2014

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 $1000 \text{ dpm}/\text{m}^2$ 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}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 contact your institution's radiation safety office.

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

REPORT FOR SWAB # 858

LOCATION: Cocodrie, LA

VESSEL: R/V Pelican

DATE: 13 May 2017

TECHNICIAN: Jim Happell

Sample #	Sample Identification	³ H dpm			¹⁴ C dpm		
		activity	±	error	activity	±	error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	-3	±	44	13	±	37
	<u>Dry Lab (Figure 1)</u>						
3	Forward benchtop	48	±	49	0	±	6
4	Port benchtop	8	±	24	17	±	36
5	Starboard benchtop	56	±	57	-17	±	35
6	Fume hood	-4	±	65	3	±	39
7	Deck in front of door	11	±	50	2	±	28
	<u>Main Deck (Figure 1)</u>						
8	Deck in computer room near door	38	±	46	11	±	31
9	Deck between galley and mess	61	±	58	-17	±	35
10	Deck at top of forward stairs	17	±	32	19	±	35
	<u>Wetlab (Figure 1)</u>						
11	Inside aft freezer	25	±	65	-15	±	31
12	Inside forward freezer top	37	±	42	14	±	32
13	Inside forward refrigerator bottom	36	±	46	15	±	33
14	Benchtop next to port door	7	±	40	3	±	32
15	Bench top next to forward sink	2	±	24	-7	±	22
16	Deck in front of refrigerator	-17	±	96	*54	±	39
17	Benchtop across from refrigerator	42	±	45	7	±	28
18	Bench top across from port sink	20	±	55	-7	±	21
19	Sink area of bottle lab	-7	±	40	10	±	38
20	Aft deck of wetlab	59	±	38	30	±	33
21	Benchtop forward of port sink	-6	±	166	18	±	37
22	Deck inside port entrance	-33	±	60	32	±	40
23	Deck in center of lab	40	±	32	47	±	36
24	Top of aft chest freezer	14	±	197	-24	±	44
25	Intermediate bucket blank	-18	±	32	2	±	86

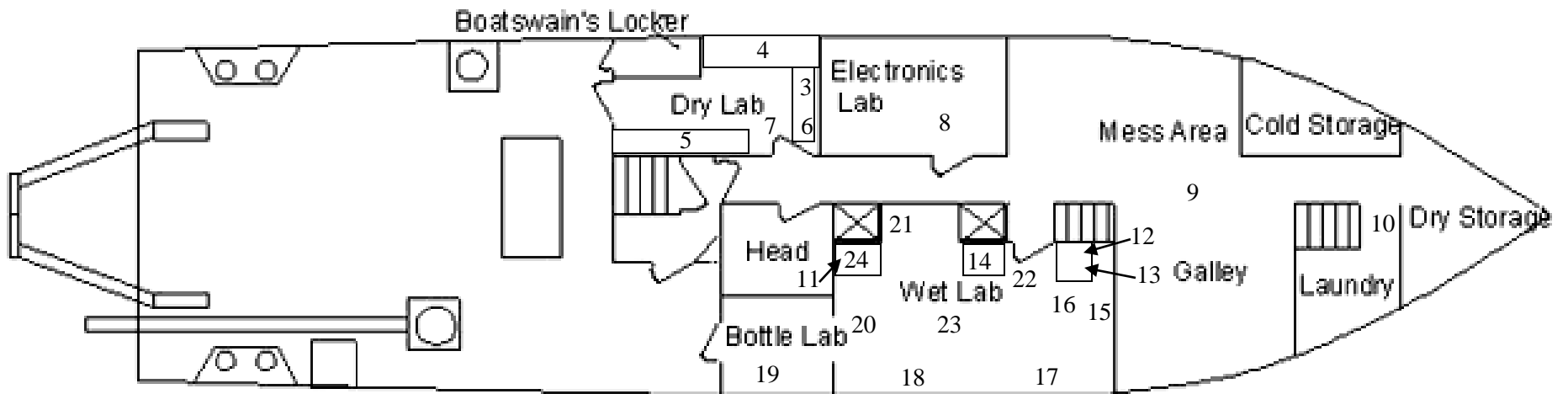
Sample #	Sample Identification	³ H dpm		¹⁴ C dpm	
		activity	error	activity	error
	<u>Van # 240804.5 (Figure 2)</u>				
26	Benchtop across from sink	46	± 56	-14	± 25
27	Benchtop next to LSC	2	± 6	32	± 37
28	Inside fume hood	23	± 45	3	± 25
29	Benchtop next to fume hood	58	± 48	8	± 26
30	Benchtop next to sink	7	± 20	20	± 36
31	Sink area	-2	± 8	30	± 37
32	Refrigerator near hood	56	± 29	*100	± 39
33	Refrigerator near sink	210	± 58	17	± 22
34	Deck between LSC and hood	152	± 56	6	± 16
35	Deck near sink	*4120	± 174	*9378	± 167
36	Final bucket blank	24	± 39	11	± 33

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. The 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. There was one area of minor ¹⁴C contamination on the deck in front of the refrigerator in the Wet Lab on the Pelican. This deck should be cleaned ASAP. Rad Van 2408-04 had minor ¹⁴C contamination in the refrigerator near the sink and on the deck in front of the sink. The deck in front of the also had minor ³H contamination. This deck area should be cleaned before the van is used again..

R/V Pelican

Figure 1
SWAB #858
13 May 2017



UNOLS VAN 2408-04

Figure 2
SWAB #858
13 May 2017

