

UNIVERSITY OF MIAMI

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Tritium Laboratory
14 July 2014

SWAB REPORT # 728

SWAB DATE: 7 July 2014

R/V Pelican

James D. Happell

Distribution:
SWAB Committee
Brad Rosenheim
Joe Malbrough

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/m². Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m². 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 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 # 728

LOCATION: Cocodrie, LA
VESSEL: *R/V Pelican*

DATE: 6 July 2014
TECHNICIAN: Brad Rosenheim

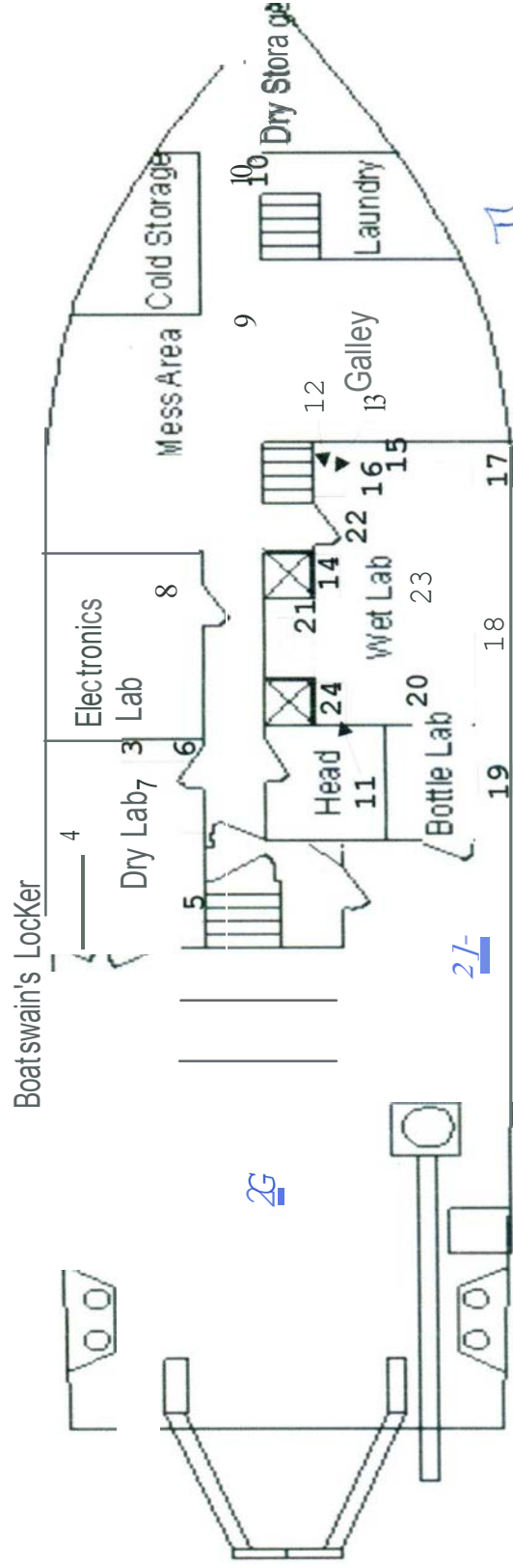
Sample #	Sample Identification	³ H dpm/m ²			¹⁴ C dpm/m ²		
		activity	error		activity	error	
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	50	±	78	0	±	0
	<u>Dry Lab (Figure 1)</u>						
3	Forward benchtop	46	±	73	0	±	0
4	Port benchtop	61	±	66	0	±	0
5	Starboard benchtop	53	±	52	0	±	0
6	Inside fume hood	70	±	66	0	±	0
7	Deck inside starboard entrance	65	±	62	0	±	0
	<u>Miscellaneous Areas (Figure 1)</u>						
8	Deck of Electronics Lab near entrance	45	±	67	0	±	0
9	Deck of companionway between Galley and Mess	41	±	73	0	±	0
10	Deck at top of forward stairs	27	±	98	0	±	0
	<u>Wet Lab (Figure 1)</u>						
11	Inside aft freezer	0	±	0	0	±	0
12	Inside forward freezer, top	59	±	61	0	±	0
13	Inside forward refrigerator, bottom	23	±	75	0	±	0
14	Benchtop next to port entrance	49	±	63	0	±	0
15	Benchtop next to forward sink	48	±	78	0	±	0
16	Deck in front of forward refrigerator	49	±	53	0	±	0
17	Benchtop across from forward refrigerator	38	±	92	0	±	0
18	Benchtop across from port sink	26	±	89	0	±	0
19	Sink area in Bottle Lab	67	±	64	0	±	0
20	Aft deck of Wet Lab	38	±	67	0	±	0
21	Benchtop forward of port sink	25	±	146	0	±	0
22	Deck inside port entrance	66	±	65	0	±	0
23	Deck in center of Wet Lab	23	±	59	0	±	0
24	Top of aft freezer	3	±	0	0	±	0
25	Intermediate bucket blank #1	66	±	65	0	±	0
	<u>Maindeck (Figure 1)</u>						
26	Deck at mid fantail	33	±	147	0	±	0
27	Stbd CTD landing	22	±	159	0	±	0
28	Deck of Stateroom 4 (no figure)	36	±	95	0	±	0
29	Final bucket blank	11	±	0	0	±	0

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 of ^3H and ^{14}C contamination that requires cleaning.

RIV Pelican

Figure 1
SWAB #728
6 July 2014



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