

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
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Tritium Laboratory

26 April 2013

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SWAB REPORT # 676

SWAB DATE: 19 April 2013

R/V Thomas Thompson

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Distribution:
SWAB Committee
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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 # 676

LOCATION: Seattle, WA
VESSEL: *R/V Thomas Thompson*

DATE: 19 April 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	35	± 37	9	± 28
	<u>Hydro Lab (Figure 1)</u>				
3	Deck in fron of port sink	21	± 37	4	± 26
4	Deck inside starboard entrance	0	± 0	4	± 46
5	Deck where fume hood had been	14	± 50	0	± 0
6	Deck in front of starboard sink	11	± 30	6	± 31
	<u>Wet Lab (Figure 2)</u>				
7	Inside fume hood	0	± 0	0	± 0
8	Deck in center of lab	41	± 35	0	± 0
	<u>Main Lab (Figure 3)</u>				
9	Inside port GE freezer top	20	± 34	0	± 0
10	Inside port GE refrigerator bottom	23	± 53	0	± 0
11	Inside fume hood	28	± 39	0	± 0
12	Inside aft SoLow	15	± 75	0	± 0
13	Deck in front of starboard SoLow	23	± 55	0	± 0
14	Inside starboard GE freezer top	7	± 33	3	± 30
15	Inside starboard GE refridgerator bottom	26	± 33	8	± 28
16	Deck inside double aft doors	20	± 67	0	± 0
17	Inside Cospolich	26	± 65	0	± 0
18	Deck inside forward port door	22	± 45	0	± 0
19	Deck inside mid port door	9	± 45	0	± 0
20	Deck inside aft port door	17	± 59	0	± 0
21	Port sink area	64	± 32	0	± 0
22	Starboard sink area	0	± 0	0	± 0
23	Deck in front of starboard sink	0	± 0	0	± 0
24	Deck in front of port sink	13	± 0	0	± 0
	<u>Bio/Analytical Lab (Figure 1)</u>				
25	Inside fume hood	9	± 35	2	± 27
26	Inside Cospolich top	22	± 54	0	± 0
27	inside Cospolich bottom	5	± 57	0	± 0

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
28	Aft sink area	0	± 0	0	± 0
29	Deck inside forward cold chamber	8	± 276	0	± 0
30	Deck inside aft cold chamber	21	± 54	0	± 0
31	Deck in vestibule ares	17	± 71	0	± 0
32	Forward sink area	0	± 0	0	± 0
33	Inside starboard entrance	22	± 39	0	± 0
34	Final bucket blank	18	± 53	0	± 0

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error.

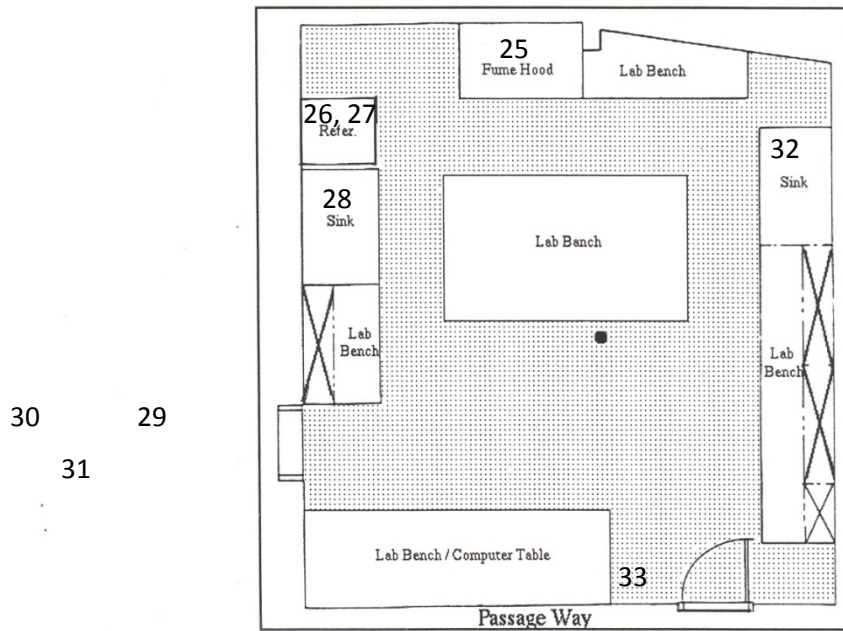
All areas tested on the ship were free of ³H or ¹⁴C contamination.

Figure 1

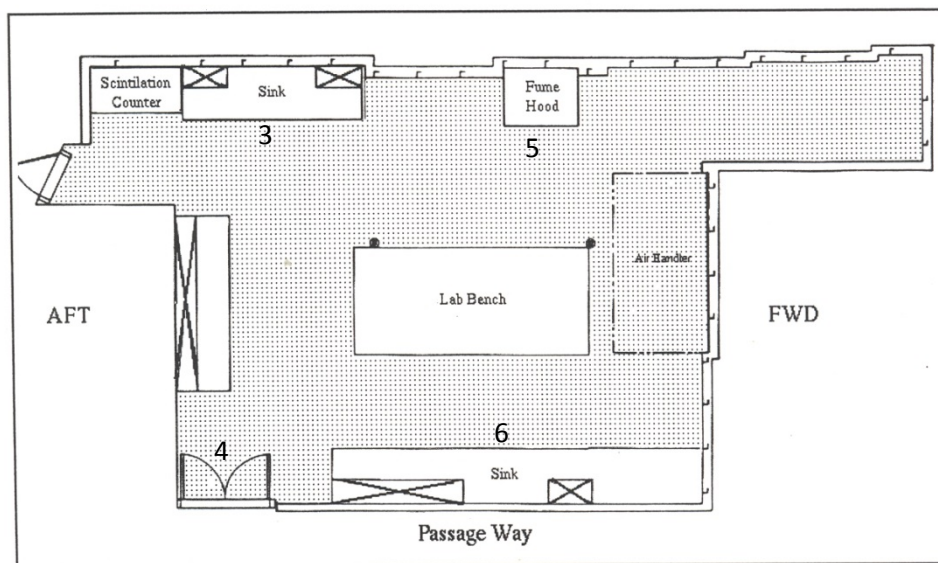
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BioAnalytical Lab Layout



Hydro Lab Layout



Wet Lab Layout

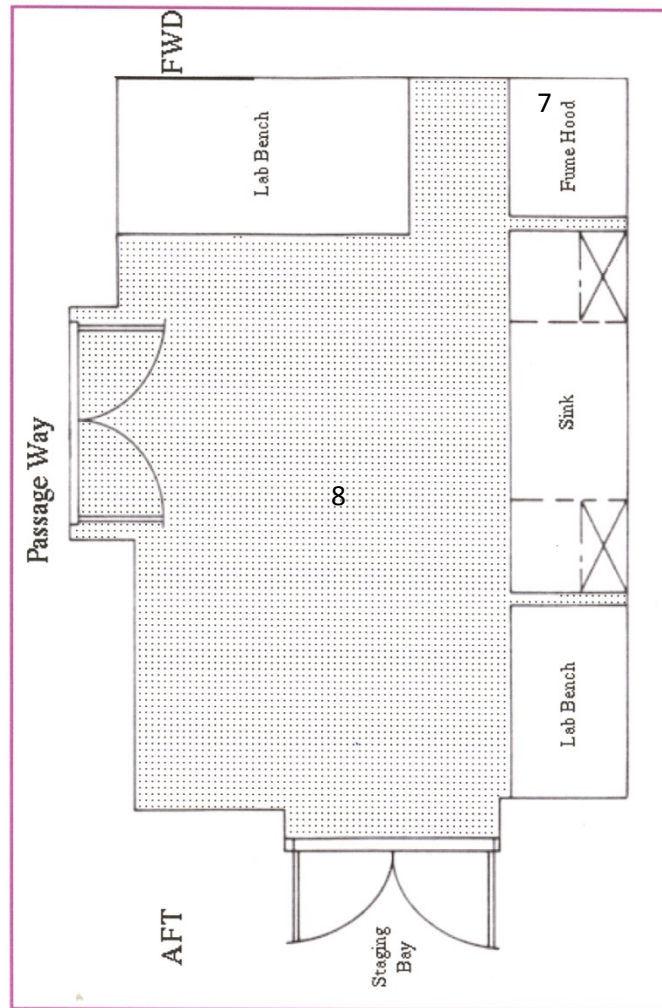


Figure 2

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