



12 August 2014

SWAB REPORT # 734

SWAB DATE: 6 August 2014

R/V Endeavor

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Distribution:
SWAB Committee
William Fanning

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 insitution promptly by phone or email.

REPORT FOR SWAB # 734

LOCATION: Narragansett, RI
VESSEL/LAB: R/V Endeavor

DATE: 6 August 2014
TECHNICIAN: Yudy Mendoza

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	0	± 0	19	± 41
	<u>UNOLS Radioisotope Van # 6255020 (Figure 1)</u>				
3	Benchtop across fridge	5	± 22	16	± 34
4	Top of LSC	10	± 17	49	± 36
5	Inside fume hood	0	± 0	38	± 37
6	Benchtop across LSC	0	± 0	33	± 39
7	Benchtop under fume hood	0	± 0	*62	± 37
8	Benchtop left of sink	0	± 0	49	± 37
9	Sink area	0	± 0	*104	± 39
10	Inside fridge	203	± 40	*382	± 47
11	Inside freezer	0	± 0	*85	± 40
12	Deck in front of fume hood	87	± 42	*82	± 36
13	Deck center of van	148	± 56	46	± 31
14	Benchtop across sink	0	± 0	24	± 41
15	Deck at entrance next to sink	197	± 58	*71	± 33
16	Deck outside van entrance	0	± 0	22	± 40
17	Intermediate bucket blank	0	± 0	2	± 0
	<u>Main Lab (Figure 2)</u>				
18	Deck in front of aft sink	0	± 0	0	± 0
19	Starboard sink area	0	± 0	22	± 39
20	Starboard benchtop	0	± 0	7	± 43
21	Benchtop forward of starboard sink	0	± 0	11	± 49
22	Deck in front of starboard sink	0	± 0	23	± 38
23	Deck at bottom of stairs	0	± 0	0	± 0
24	Deck at entrance of stairs	0	± 0	0	± 0
25	Deck inside port door	0	± 0	1	± 0
26	Aft starboard benchtop	0	± 0	0	± 0
27	Deck in front of aft starboard benchtop	0	± 0	0	± 0
28	Port benchtop	0	± 0	15	± 42

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
<u>Wet Lab (Figure 3)</u>					
29	Deck inside aft door	0	± 0	6	± 60
30	Benchtop aft of sink	0	± 0	34	± 45
31	Deck in front of sink	0	± 0	0	± 0
32	Deck inside starboard entrance	0	± 0	5	± 42
<u>Special Purpose Lab (Figure 3)</u>					
33	Inside fume hood	0	± 0	10	± 49
34	Inside black chest freezer	0	± 0	1	± 0
35	Inside Revco	0	± 0	0	± 0
36	Benchtop forward of sink	0	± 0	0	± 0
37	Benchtop in front of chest freezer	0	± 0	1	± 0
38	Deck in front of sink	0	± 0	0	± 0
39	Benchtop aft of sink	0	± 0	0	± 0
40	Deck in front of fume hood	0	± 0	12	± 45
41	Deck outside entrance to Special Purpose Lab	0	± 0	0	± 0
42	Final bucket blank	0	± 0	2	± 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 ¹⁴C contamination that requires cleaning.

Minor ¹⁴C contamination found in radioisotope van, but no action is required

Figure 1
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UNOLS VAN 6255020

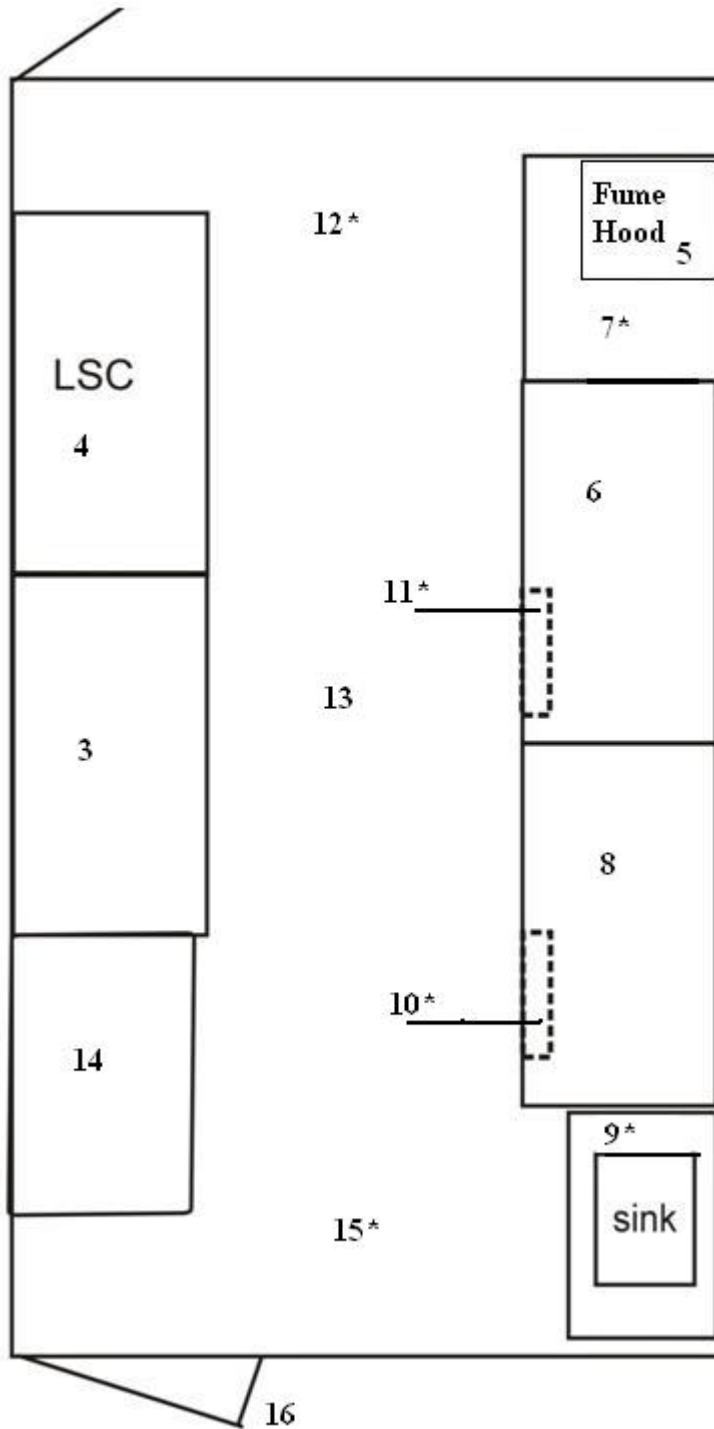


Figure 2
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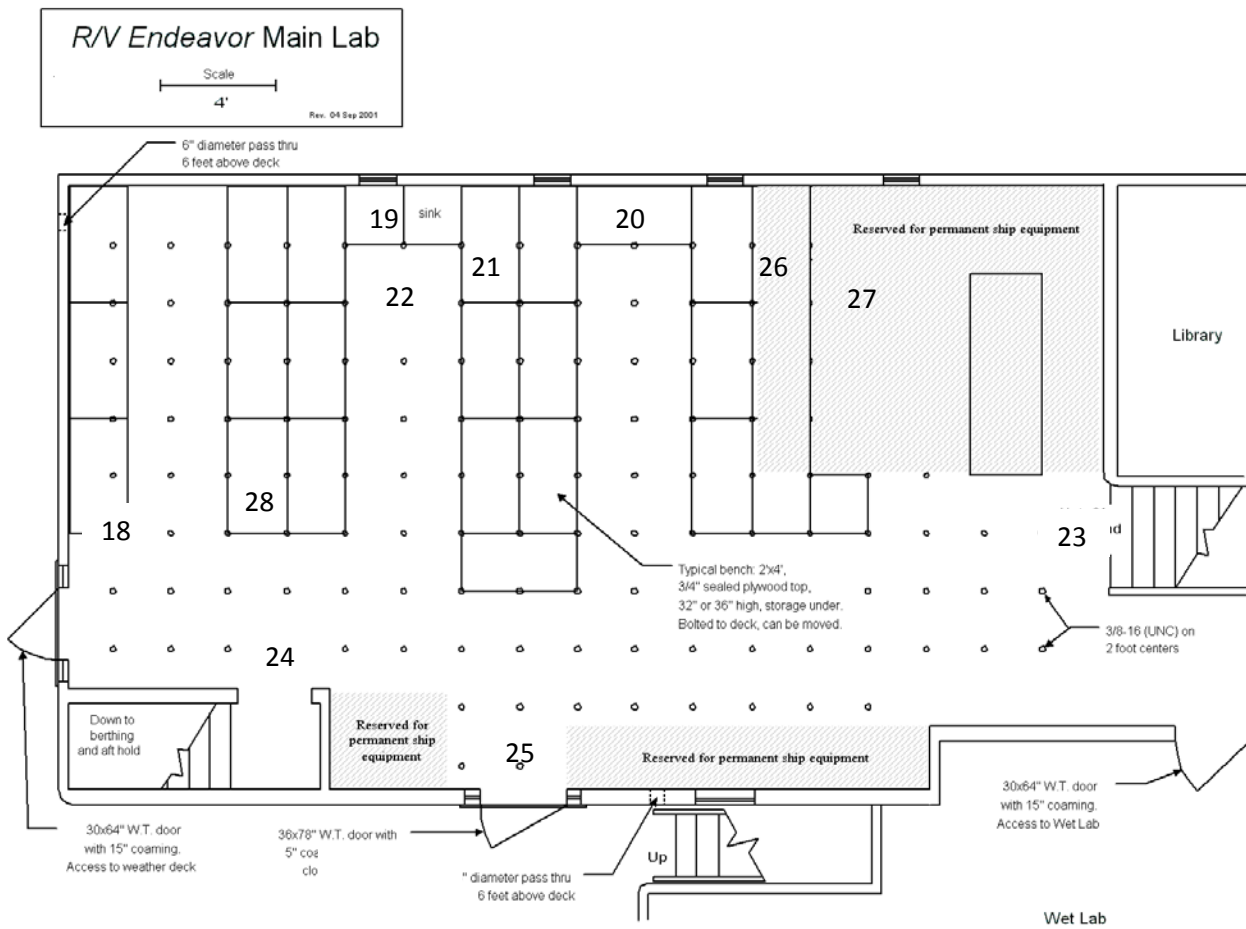


Figure 3
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