



1 August 2013

SWAB REPORT # 690

SWAB DATE: 25 July 2013

R/V Endeavor
and UNOLS Vans 625.3.08 & 2408-04

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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 # 690

LOCATION: Gulfport, Mississippi
VESSEL/LAB: *R/V Endeavor*

DATE: 25 July 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	12	± 49	0	± 8
<u>UNOLS Shared Use Van # 625.3.08 (Figure 1)</u>					
3	Fridge next to stbd. door	438	± 74	15	± 14
4	Fridge across sink	111	± 56	0	± 1
5	Benchtop above refrigerator	375	± 69	18	± 17
6	Inside hood	131	± 58	0	± 0
7	Sink area	*4,123	± 182	*85	± 13
8	Deck inside port door	33	± 39	22	± 33
9	Deck inside stbd. door	155	± 55	24	± 27
10	Intermediate bucket blank	10	± 54	0	± 0
<u>UNOLS Radioisotope Van # 2408-04 (Figure 2)</u>					
11	Benchtop across sink	*1,369	± 109	*121	± 26
12	Benchtop across fridge	**10,755	± 284	*318	± 22
13	Top of LSC	446	± 48	*853	± 59
14	Inside hood	**30,057	± 475	*838	± 31
15	Benchtop across LSC	59	± 22	*202	± 42
16	Benchtop left of sink	*688	± 83	*85	± 27
17	Sink area	359	± 43	*749	± 57
18	Inside Danby Designer fridge	*890	± 83	*400	± 44
19	Inside Danby freezer	111	± 49	*57	± 34
20	Deck in front of hood	*1,855	± 100	*1,972	± 80
21	Deck center of van	*9,852	± 243	*5,244	± 121
22	Deck at entrance next to sink	*6,065	± 207	*1,371	± 63
23	Intermediate bucket blank	0	± 0	2	± 36
<u>Special Purpose Labs (Figure 3)</u>					
24	Inside hood	0	± 0	13	± 39
25	Inside black chest freezer	0	± 0	9	± 38
26	Inside Revco	24	± 51	0	± 0
27	Fwd. benchtop	28	± 64	0	± 0
28	Benchtop in front of chest freezer	0	± 0	0	± 0
29	Deck in front of sink	63	± 44	23	± 31
30	Deck at entrance	10	± 32	11	± 33
31	Benchtop stbd. of Revco	27	± 58	0	± 0

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
<u>Wet Lab (Figure 3)</u>					
32	Deck inside aft door	9	± 104	0	± 0
33	Benchtop aft of sink	0	± 0	6	± 39
34	Deck in front of sinks	67	± 50	8	± 24
35	Port benchtop	0	± 0	0	± 0
<u>Main Lab (Figure 4)</u>					
36	Deck at bottom of stairs	11	± 64	0	± 0
37	Deck at entrance to stairs	37	± 53	0	± 0
38	Inside Kenmore Coastal Refrigerator	74	± 39	*67	± 35
39	Inside Fridge 1 Isotemp	0	± 0	23	± 38
40	Benchtop across Fridge 1	0	± 0	6	± 39
41	Port sink area	18	± 45	4	± 29
42	Deck inside stbd. door	45	± 48	9	± 28
43	Deck in front of Fridge 1	45	± 50	2	± 17
44	Center benchtop	9	± 55	0	± 0
45	Final bucket blank	15	± 47	0	± 5

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, except for one sample. Sample taken in the Kenmore Coastal refrigerator showed minor ¹⁴C contamination and requires cleaning. UNOLS Shared Use Van # 625.3.08 showed minor ³H and ¹⁴C contamination in sink area. This area requires cleaning before any natural tracer work.

UNOLS Radioisotope Van # 2408-04 showed minor to moderate ³H and ¹⁴C contamination in all samples taken. Benchtop across fridge and hood require immediate cleaning. Cleaning of deck is recommended to prevent tracking into ship. It is suggested that the entire van be given a good cleaning.

Figure 1

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UNOLS Van 625.3.08

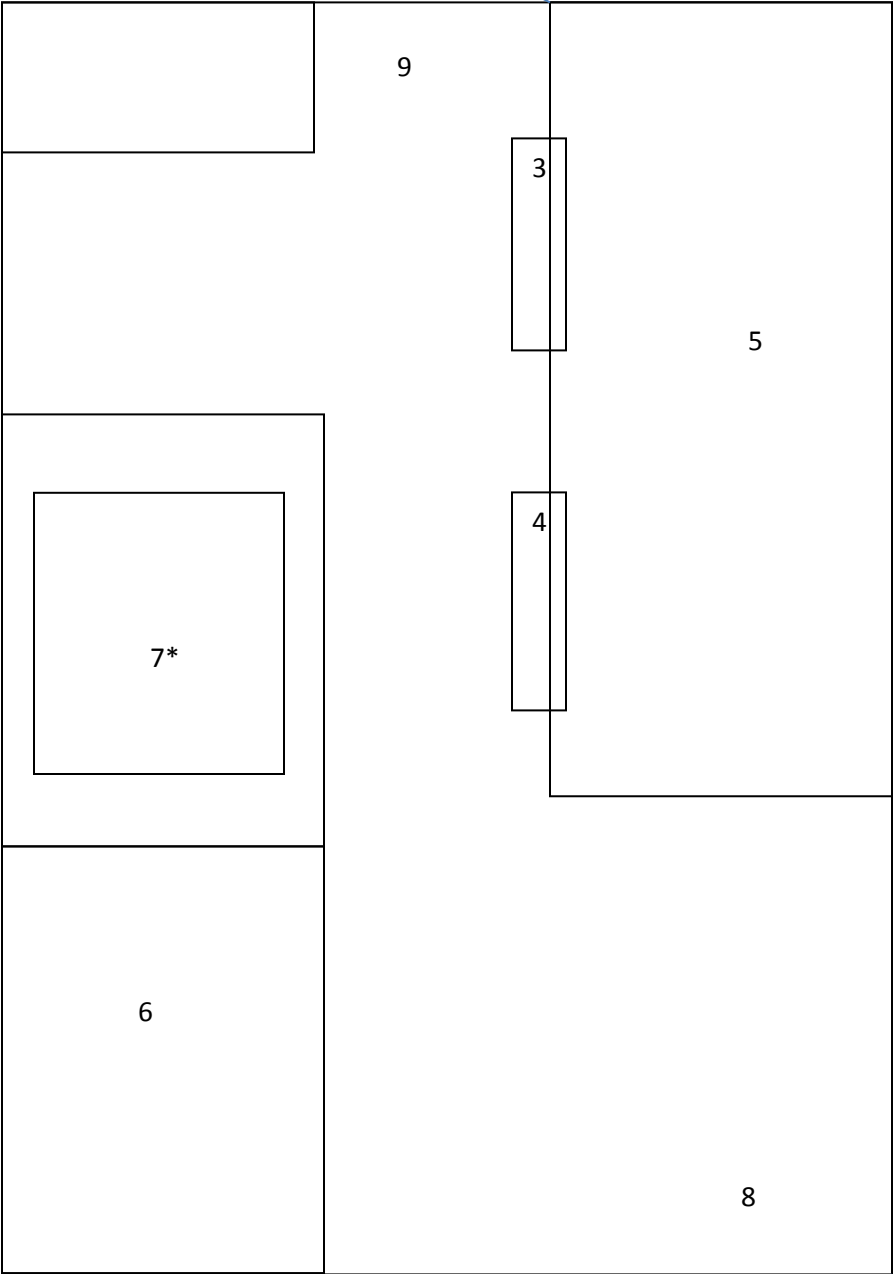


Figure 2
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UNOLS VAN 2408.04

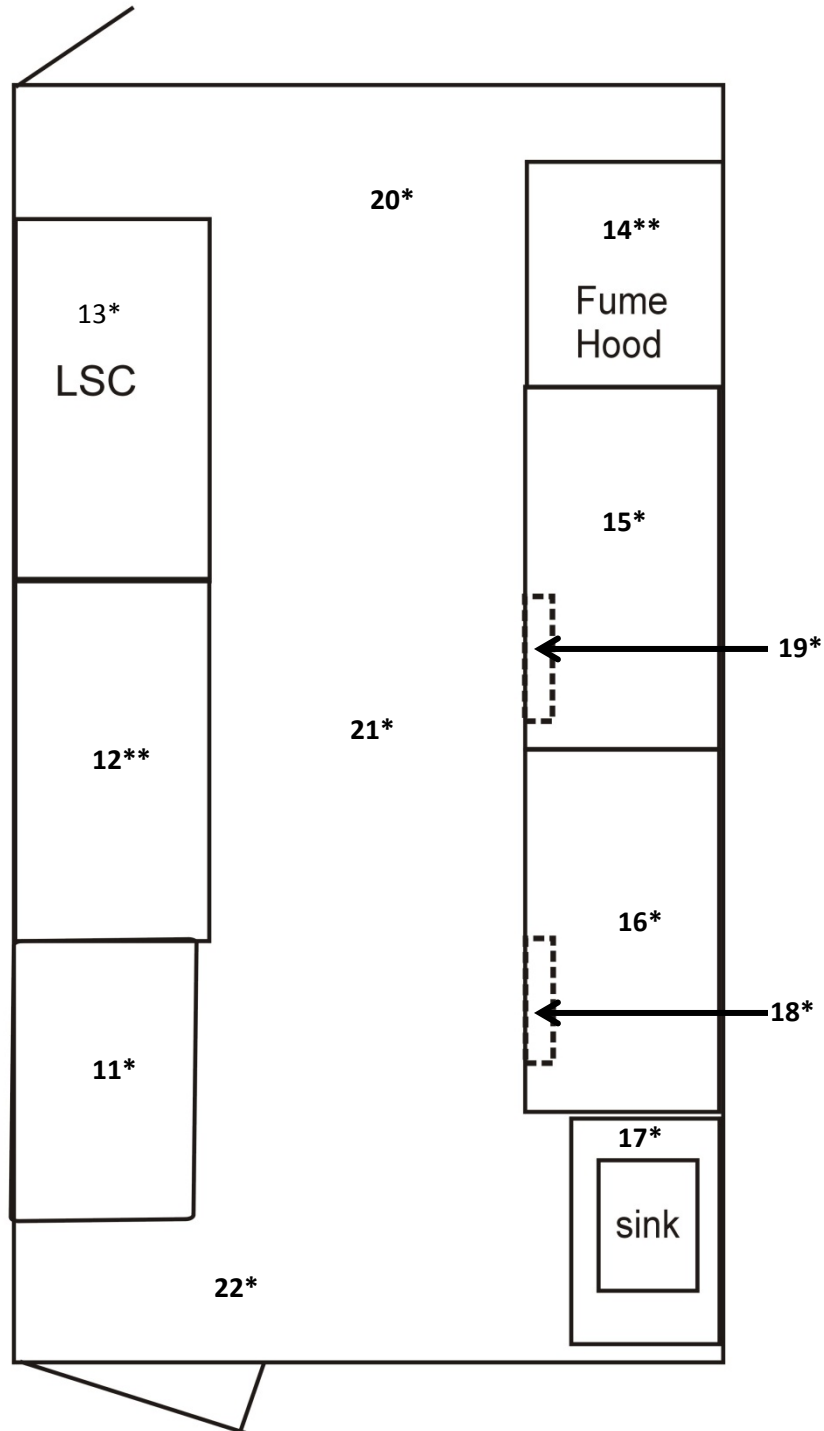


Figure 3
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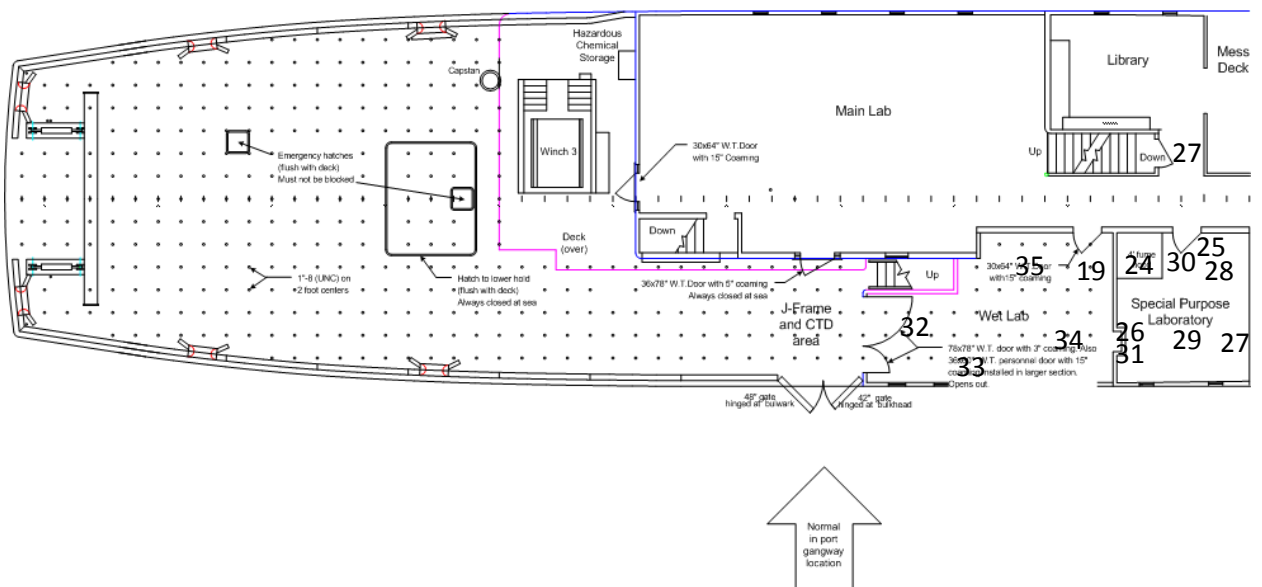
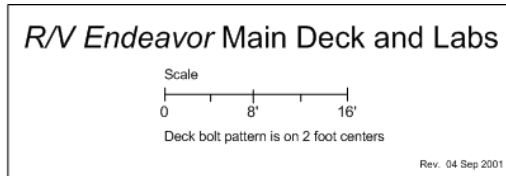


Figure 4
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