UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE

Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1031

Ph: 305-421-4100
Fax:305-421-4112
E-mail: Tritium@rsmas.miami.edu

27 June 2013

SWAB REPORT # 683

SWAB DATE: 19 June 2013

R/V Endeavor & rad vans

James D. Happell

Distribution:
SWAB Committee
William Fanning

COMMENTS TO SWAB REPORTS 23 November 2010

Typical LSC instrument background values for ^{3}H 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	^{3}H (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/m2 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 Proceedure

Wearing ordinary household rubber gloves:

^{3}H: 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 $^{14}CO_2$). Follow up with wash as if for ^{3}H.

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 # 683

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

DATE: 19 June 2013
TECHNICIAN: Ryan Sibert

Sample #	Sample Identification	^{3}H dpm/m^{2} activity	±	error	^{14}C dpm/m^{2} activity	±	error
1	1st Vial Background	0	±	0	0	±	0
2	Initial bucket blank	13	±	71	0	±	0
	Main deck & general purpose van (figure 1)						
3	NC lab, main lab, inner treshold	0	±	0	44	±	36
4	Base of stairs leading to 0-1 deck to main lab	6	±	51	0	±	0
5	Inside entrance floor to wet lab on main	4	±	32	5	±	32
6	Door from wet lab to main deck	0	±	0	5	±	37
7	Floor of entrance to special purpose lab	7	±	37	5	±	32
8	Hallway floor in front of first aid panty	11	±	32	13	±	32
9	Exterior deck next to door into main lab (starboard)	0	±	0	1	±	42
10	Deck outside door to general purpose lab	47	±	44	25	±	31
11	Deck inside door to general purpose van	*1112	±	104	30	±	13
12	Floor next to flow hood in general purpose van	*4890	±	199	*111	±	14
13	Gallery floor next to mini fridge	0	±	0	30	±	37
	0-1 Deck and rad van (figure 2)						
14	0-1 deck outside lab door	0	±	0	26	±	35
15	0-1 deck next to radar m	0	±	0	13	±	40
16	0-1 deck outside of isotope van	0	±	0	25	±	37
17	Floor of rad van next to door	316	±	65	*51	±	27
18	Stainless countertop in rad van	45	±	45	18	±	30
19	Floor of rad lab next to fume hood	402	±	70	*50	±	25
20	Wooden benchtop in rad lab	4	±	13	22	±	34
21	Isotope fridge door in rad lab	*527	±	76	*66	±	26
22	0-1 floor inside of aft entrance to 0-1 lab	0	±	0	10	±	46
	Main Deck (figure 1)						
23	Floor in front of special purpose fridge	0	±	0	0	±	0
24	Sink work area next to wetlab sink	0	±	0	0	±	0
	Platform deck (figure 3)						
25	Floor leading into the after hold	1	±	5	19	±	34
26	Floor in hallway between rooms 11 and 12	0	±	0	6	±	60
27	Floor in hallway between rooms 3 and 4	0	±	0	4	±	40
28	Final bucket blank	0	±	0	16	±	36

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 activity that requires cleaning. Minor ^{14}C and ^{3}H contamination was found in the vans. No cleaning is necessary unless natural abundance work is to be conducte in the vans. However is is recommended that contamianted deck areas in the vans be cleaned to prevent tracking contamination into the ship.

Figure 1
SWAB 683
19 June 2013

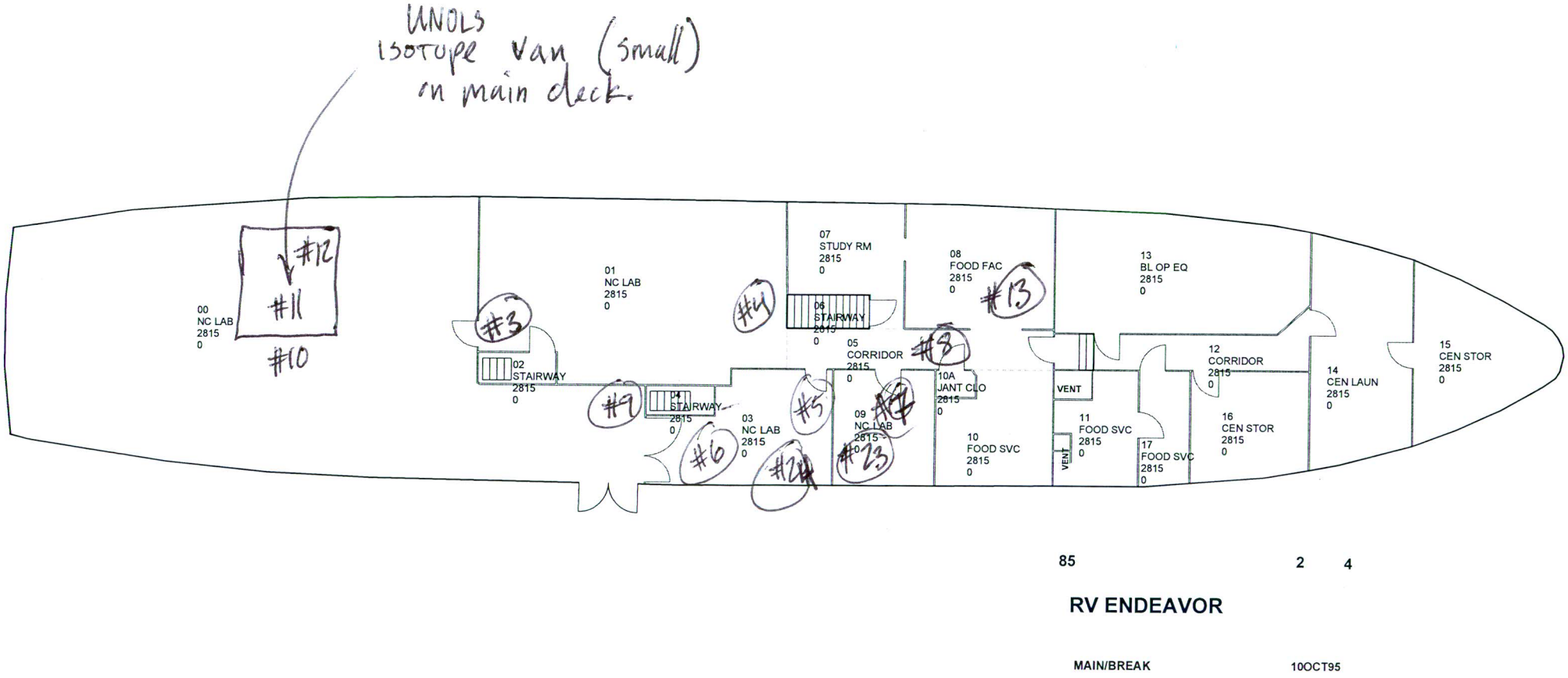

Figure 2
SWAB 683
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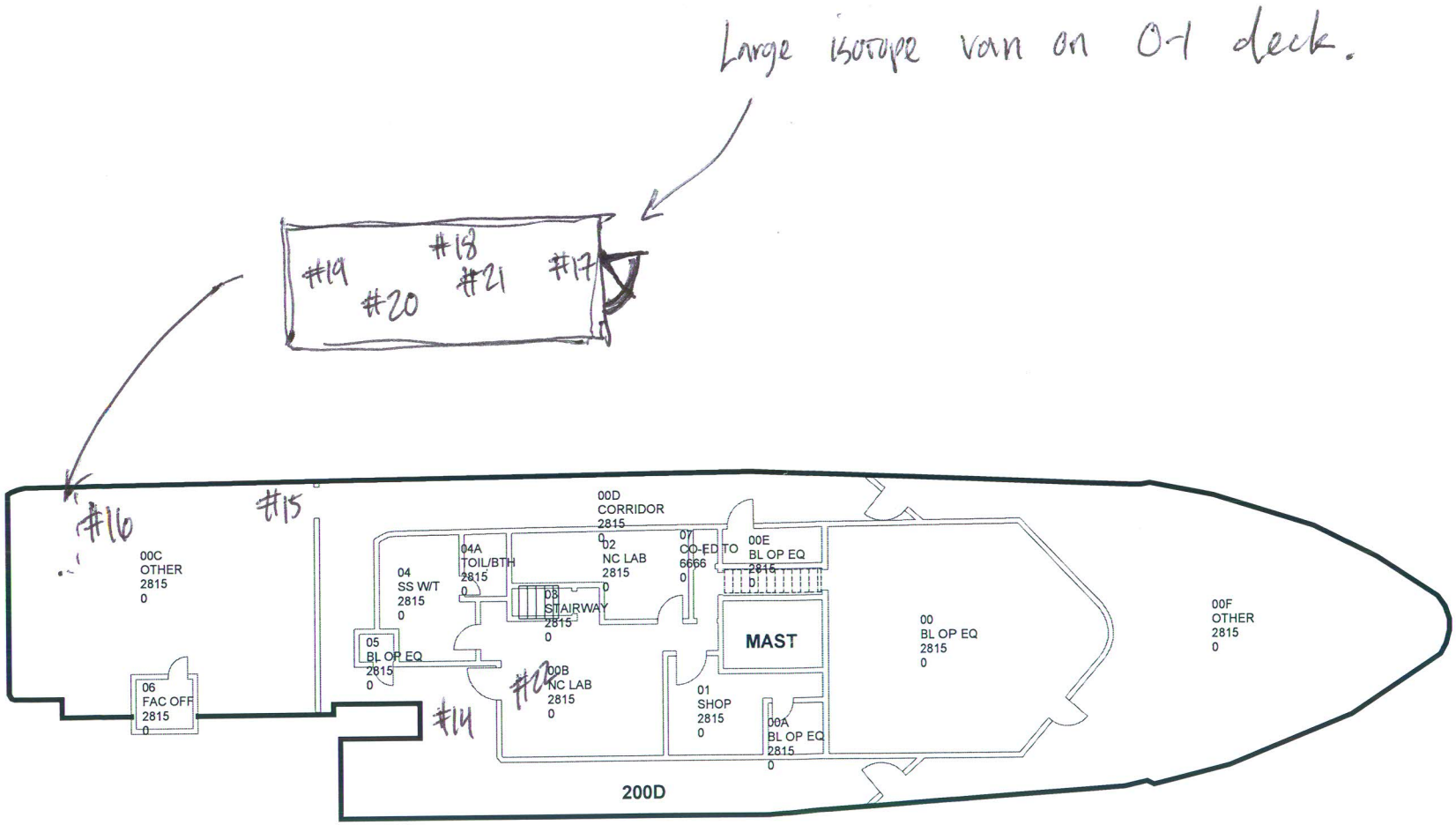

Figure 3
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19 june 2013