



31 July 2014

SWAB REPORT # 731

SWAB DATE: 25 July 2014

*R/V New Horizon*

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Distribution:  
SWAB Committee  
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## COMMENTS TO SWAB REPORTS

12 May 2014

Typical LSC instrument background values for  $^3\text{H}$  and  $^{14}\text{C}$  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  $\text{dpm}/\text{m}^2$ . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in  $\text{dpm}/\text{m}^2$ . An error larger than the activity indicates that the activity is not significantly different from zero.

### Criteria for SWAB Results

Category	$^3\text{H}$ ( $\text{dpm}/\text{m}^2$ )	$^{14}\text{C}$ ( $\text{dpm}/\text{m}^2$ )	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:  $^{14}\text{C}$  and  $^{35}\text{S}$  have peak energies of 156 and 167 KeV, respectively; thus  $^{35}\text{S}$  will be registered as  $^{14}\text{C}$  by our counting techniques. Categories A, B and C are not a health hazard.

### Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

$^3\text{H}$ : 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.

$^{14}\text{C}$ : 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  $^3\text{H}$ .

### 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 # 731

LOCATION: San Diego, CA  
VESSEL/LAB: *R/V New Horizon*

DATE: 25 July 2014  
TECHNICIAN: Jim Happell

Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank	0	± 0	24	± 44
	<u>Main Lab (Figure 1)</u>				
3	Deck outside forward entrance	0	± 0	8	± 63
4	Inside Norland refrigerator	0	± 0	0	± 0
5	Top of -80 freezer	0	± 0	15	± 51
6	Port sink area	0	± 0	7	± 73
7	Benches across from port sink	0	± 0	11	± 107
8	Port benchtop aft of sink	0	± 0	0	± 0
9	Inside chest freezer	0	± 0	13	± 54
10	Aft port benchtop	0	± 0	8	± 123
11	Deck in front of -80 freezer	0	± 0	16	± 54
12	Deck at entrance to wetlab	0	± 0	0	± 0
13	Port benchtop below aft porthole	0	± 0	13	± 63
14	Deck at aft entrance to Ocean Lab	0	± 0	8	± 74
15	Inside of chest freezer	0	± 0	0	± 0
16	Deck in front of sink	0	± 0	0	± 0
	<u>Wet Lab (Figure 1)</u>				
17	Forward port benchtop	0	± 0	17	± 49
18	Foward starboard benchtop	0	± 0	23	± 47
19	Aft sink area and benchtop	0	± 0	4	± 0
20	Benchtop next to sink	0	± 0	10	± 64
	<u>Ocean Lab (Figure 1)</u>				
21	Aft port sink area next to fume hood	0	± 0	0	± 0
22	Deck below fume hood and sink	0	± 0	0	± 0
23	Benchtop aft of port forward sink	0	± 0	9	± 103
24	Port forward sink area	0	± 0	14	± 58
25	Aft sink area	0	± 0	7	± 259
26	Inside fume hood	0	± 0	20	± 54
27	Benchtop starboard of aft sink	0	± 0	1	± 0
28	Benchtop under stbd porthole	0	± 0	0	± 0

Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
29	Benchtop opposite of aft sink	0	± 0	6	± 0
	<u>Miscellaneous Areas (Figure 1)</u>				
30	Mess deck in front of hot food server	0	± 0	0	± 0
31	Mess deck outside lounge entrance	0	± 0	0	± 0
32	Mess deck in front of aft door	0	± 0	9	± 95
33	Walk-In freezer - Deck	0	± 0	8	± 67
34	Benchtop across from sink	0	± 0	3	± 0
35	Final bucket blank	0	± 0	17	± 56

### Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested were free from radioisotope activity that requires cleaning.

# R/V NEW HORIZON

Figure 1

