



Tritium Laboratory
5 August 2026

SWAB REPORT # 1144

SWAB DATE: 23 July 2026

R/V Pelican
UNOLS Radioisotope Van # 2408-04

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Distribution:
UNOLS office
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COMMENTS TO SWAB REPORTS

15 December 2021

The LSC is now a Quantulus GCT 6220, with the SWAB counting assay having background cpm of 0.3 & 1.2 for ^3H & ^{14}C . This replaces an LSC with background cpm of 1.6 & 5.5 for ^3H & ^{14}C .

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. All activities significantly above background will be in **bold**.

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 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 # 1144

LOCATION: Houma, LA

VESSEL: *R/V Pelican*

DATE: 23 July 2026

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	31	± 22	-16	± 30
	<u>Dry Lab (Figure 1)</u>				
3	Forward benchtop next to sink	-15	± 2	2	± 21
4	Port benchtop after of sink	25	± 23	-18	± 33
5	Forward benchtop next to fume hood	23	± 21	-14	± 26
6	Inside fume hood	6	± 10	3	± 13
7	Starboard benchtop	33	± 22	-14	± 25
	<u>Main Deck (Figure 1)</u>				
8	Deck in front of fume hood	26	± 26	-7	± 14
9	Deck inside computer room	11	± 15	-2	± 4
10	Deck in front of washer and dryer	23	± 25	-20	± 36
	<u>Wet Lab (Figure 1)</u>				
11	Deck in front of aft freezer	44	± 26	6	± 12
12	Inside forward freezer top	22	± 18	-5	± 9
13	Inside forward refrigerator bottom	-1	± 23	3	± 15
14	Benchtop next to port door	20	± 19	-9	± 17
15	Benchtop next to forward sink	13	± 34	-17	± 31
16	Deck in front of refrigerator	23	± 24	-7	± 12
17	Benchtop across from refrigerator	39	± 23	0	± 29
18	Benchtop across from port sink	46	± 25	-22	± 40
19	Sink area of bottle lab	26	± 20	-10	± 19
20	Aft deck of bottle lab	52	± 26	5	± 10
21	Benchtop forward of port sink	35	± 24	-20	± 43
22	Deck inside port entrance	21	± 17	8	± 13
23	Top of chest freezer	34	± 28	-31	± 54
24	Deck in front of chest freezer	4	± 9	6	± 15
25	Benchtop across from after freezer	25	± 20	-11	± 30

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
	<u>Radioisotope Van 2408-04 (Figure 2)</u>				
26	Benchtop across from sink	4	± 23	-4	± 8
27	Benchtop next to LSC	9	± 9	12	± 14
28	Inside fume hood	22	± 17	-4	± 6
29	Benchtop next to fume hood	25	± 11	44	± 16
30	Benchtop next to sink	-182	± 24	*1354	± 50
31	Sink area	-22	± 4	*715	± 38
32	Refrigerator near fume hood	31	± 28	-24	± 43
33	Refrigerator near sink	40	± 15	*64	± 17
34	Deck between LSC and fume hood	84	± 23	*64	± 17
35	Deck near sink	68	± 20	*80	± 18
36	Final bucket blank	16	± 21	-13	± 23

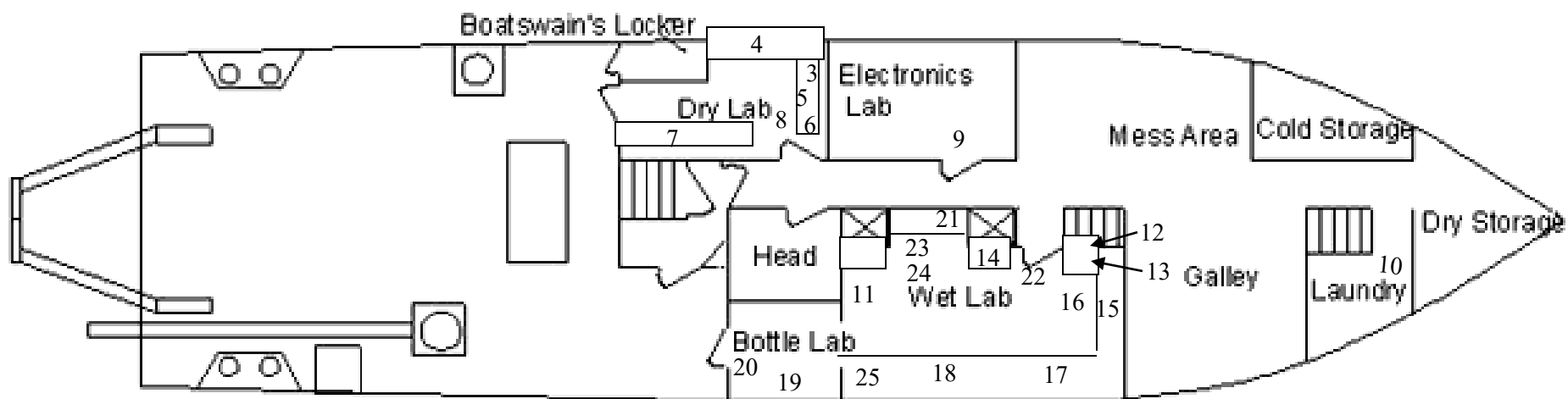
Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. Reports may now contain values less than zero. Decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. Please note that we are now using a Quantulus 6220 LSC which counts very near natural background. While the cleanup standards have not changed all values above background will now be in bold. All areas tested inside the ship were free from contamination that requires cleaning.

Minor ^{14}C or ^{35}S contamination was observed in the Rad Van. This cruise only used ^{35}S , but ^{35}S is counted as ^{14}C in the LSC so the contamination is likely ^{35}S . The large negative ^3H value in sample 30 is an artifact of ^{35}S in a sample. No action is necessary in the Rad Van.

R/V Pelican

Figure 1
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UNOLS Rad Van 2408-04

Figure 2
SWAB #1144
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