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Tritium Laboratory
6 November 2025

SWAB REPORT # 1133

SWAB DATE: 10 October 2025

R/V Hugh Sharp

James Happell Digitally signed by James Happell
Date: 2025.11.06 11:48:50 -05'00'

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Tim Deering

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 ^{3}H & ^{14}C. This replaces an LSC with background cpm of 1.6 & 5.5 for ^{3}H & ^{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	^{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/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 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 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 #1133

LOCATION: Lewes, DE
VESSEL: *Hugh Sharp*

DATE: 30 October 2025
TECHNICIAN: Joseph Gonzalez

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	-1	±	0	-5	±	15
	Main Lab (Figure 1)						
3	Forward port benchtop	17	±	26	4	±	12
4	Deck at entrance to Data Acquisition Room	-3	±	21	-2	±	17
5	Deck in center of Utility Electric Room	9	±	21	-1	±	10
6	Benchtop next to sink	8	±	46	-10	±	13
7	Forward port benchtop	-4	±	25	-4	±	11
8	Port benchtop acrooss from science computer	-16	±	25	11	±	15
9	Forward starboard benchtop	-7	±	39	-3	±	21
10	Center starboard benchtop	6	±	34	-23	±	29
11	Aft starboard benchtop	16	±	22	-2	±	13
12	Aft benchtop across from spill control	18	±	23	-2	±	17
13	Aft port benchtop	12	±	40	-13	±	16
14	Sink area	8	±	19	-20	±	26
15	Deck below sink	-3	±	21	12	±	15
16	Deck at entrance to Wet Lab	**32**	**±**	**31**	-17	±	21
17	Deck in front of port porthole	**36**	**±**	**28**	-12	±	16
18	Deck between forward and aft port bench	16	±	27	-9	±	25
19	Deck between starboard and port bench	-8	±	18	2	±	17
	Wet Lab (Figure 1)						
20	Forward port benchtop	0	±	3	-7	±	19
21	Aft sink area	4	±	27	-12	±	14
22	Deck at aft entrance	-8	±	46	-12	±	16
23	Deck in front of aft sink	0	±	1	-2	±	15
24	Forward starboard benchtop next to CTD	-4	±	29	5	±	15
25	Inside small freeezer	-24	±	29	-5	±	13
26	Inside Frigidaire freezer	25	±	31	-17	±	22
27	Inside Frigidaire refrigerator	28	±	36	-23	±	28
28	Deck at entrance to Workshop Storage	9	±	28	-6	±	16
29	Deck in front of freezer	0	±	0	-13	±	16
30	Starboard sink area	5	±	14	4	±	13
31	Black rubber mat in companion way outside Head	-4	±	25	-8	±	23
32	Final bucket blank	-11	±	19	2	±	19

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 on the ship were free from isotope contamination that requires cleaning.

RV Hugh Sharp Lab Spaces

SWAB # 1133
30 October 2025
Figure 1