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27 March 2025

SWAB REPORT # 1116

SWAB DATE: 19 March 2025

R/V Sikuliaq & Hawaii Rad Van #23

James Happell Digitally signed by James Happell Date: 2025.03.28 05:44:12 +07'00'

Dr. James D. Happell
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Distribution:
SWAB Committee
Julian Race
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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 ^{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 # 1116

LOCATION: Honolulu, HI
DATE: 19 March 2025
VESSEL: *R/V Sikuliaq*
TECHNICIAN: Yudy Mendoza

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		^{3}H dpm/m^{2} error	^{14}C dpm/m^{2} activity		^{14}C dpm/m^{2} error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	-19	±	211	-10	±	22
	Main Lab (Figure 1)						
3	Forward sink area	-2	±	20	-41	±	89
4	Deck inside forward entrance	-17	±	188	-16	±	34
5	Inside forward fume hood	-12	±	129	-16	±	36
6	Aft starboard sink area	-6	±	67	-19	±	42
7	Forward starboard sink area	25	±	50	-25	±	54
8	Deck inside aft entrance	11	±	121	-19	±	41
9	Deck in front of forward fume hood	-19	±	206	-13	±	28
10	Port sink area	-41	±	441	-15	±	32
11	Deck in front of port sink	-4	±	42	-27	±	60
12	Deck in front of starboard aft sink	-10	±	107	-12	±	26
	Wet Lab (Figure 2)						
13	Deck inside port entrance	-9	±	92	-6	±	14
14	Inside Cospolich freezer	-3	±	35	-19	±	41
15	Inside Cospolich refrigerator	29	±	47	-26	±	58
16	Deck inside Wet Gear Locker	-13	±	143	-17	±	38
17	Inside fume hood	19	±	50	-19	±	42
18	Port sink area	-14	±	147	-23	±	51
19	Deck inside aft entrance	2	±	24	-25	±	55
20	Starboard aft bench	-17	±	181	-4	±	8
21	Starboard forward bench	0	±	3	-19	±	43
22	Aft sink area	-4	±	43	-27	±	59
23	Deck inside forward entrance	-14	±	154	-15	±	32
	Bio-Analytical Lab (Figure 3)						
24	Forward sink area	20	±	53	-22	±	47
25	Inside fume hood	-24	±	256	-27	±	60
26	Deck in front of So-Low refrigerator	-26	±	279	-21	±	45
27	Starboard bench	-23	±	248	-18	±	40
28	Deck between sink and fume hood	-37	±	398	-4	±	9
29	Deck inside starboard entrance	-32	±	346	-38	±	84

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Main Deck Miscellaneous (Figure 4)						
30	Deck outside Science Freezer	-2	±	22	-9	±	20
31	Deck outside Climate Control Chamber	15	±	23	-33	±	72
32	Deck of Electronics/Comp Lab in front of printer	18	±	103	-29	±	63
33	Deck in center of Science Office	32	±	41	-24	±	52
34	Intermediate bucket blank	7	±	72	-18	±	40
	Rad Van #23 (Figure 5)						
35	Sink area	1	±	6	-12	±	26
36	Bench opposite to sink	36	±	42	-14	±	32
37	Bench next to van entrance	-9	±	101	-21	±	45
38	Bench on top of SPT freezer	33	±	59	-18	±	39
39	Inside SPT freezer	32	±	41	-21	±	46
40	Bench next to gas cylinders	15	±	23	7	±	15
41	Inside Magic Chef refrigerator	**102**	**±**	**39**	-13	±	28
42	Deck in front of SPT freezer	***623**	**±**	**85**	-3	±	7
43	Deck in front of Magic Chef refrigerator	**253**	**±**	**58**	-16	±	36
44	Deck at entrance	**222**	**±**	**82**	-19	±	42
45	Final bucket blank	0	±	1	-18	±	40

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 had no contamination that requires cleaning. Minor ^{3}H contamination found in the Rad Van. No action is necessary in the van.

Figure 1
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R/V Sikuliaq Main Lab

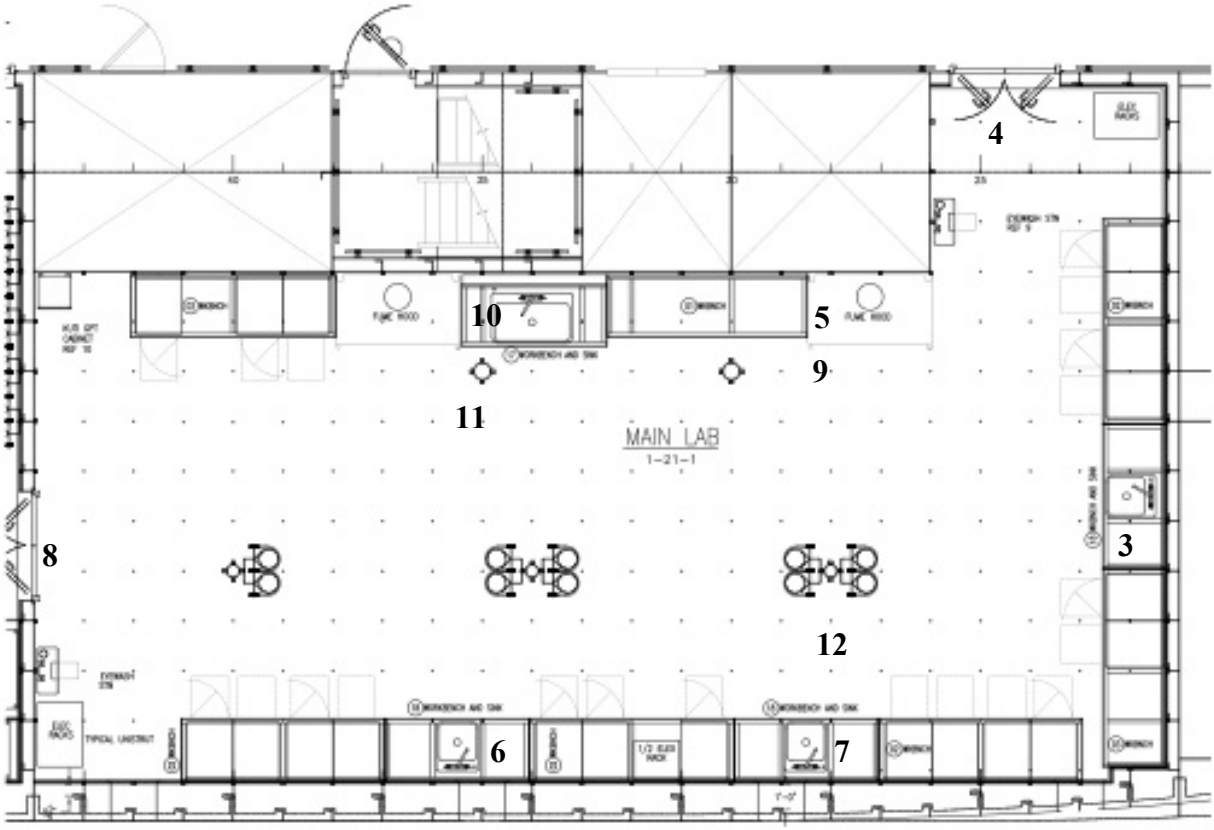

Figure 2
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R/V Sikuliaq Wet Lab

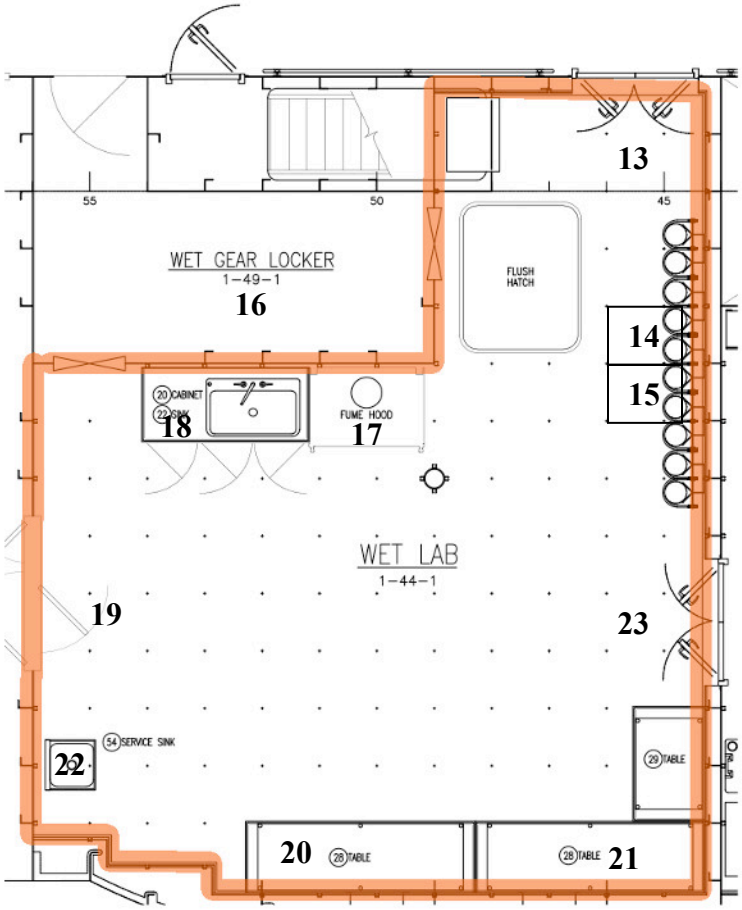

Figure 3
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R/V Sikuliaq BioAnalytical Lab

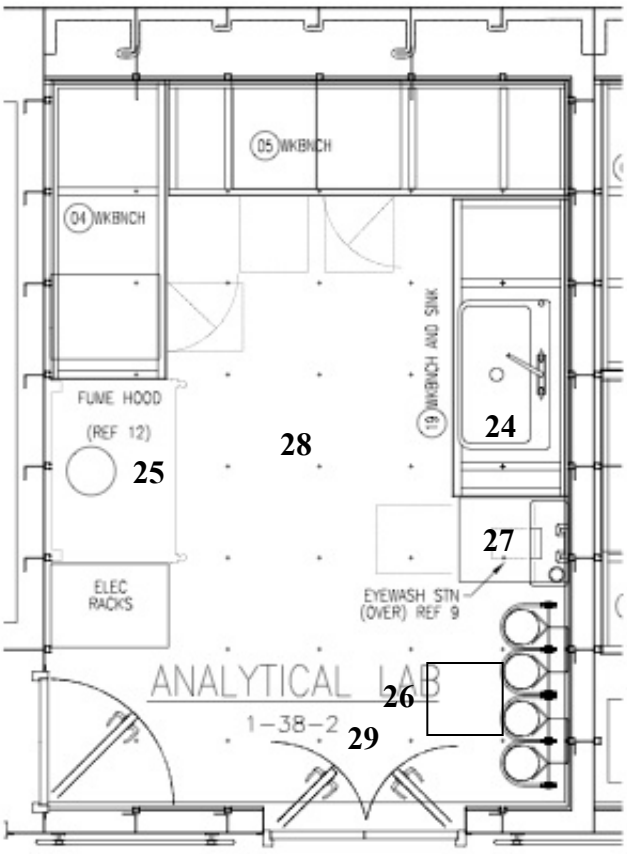

Figure 4
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R/V Sikuliaq Main Deck

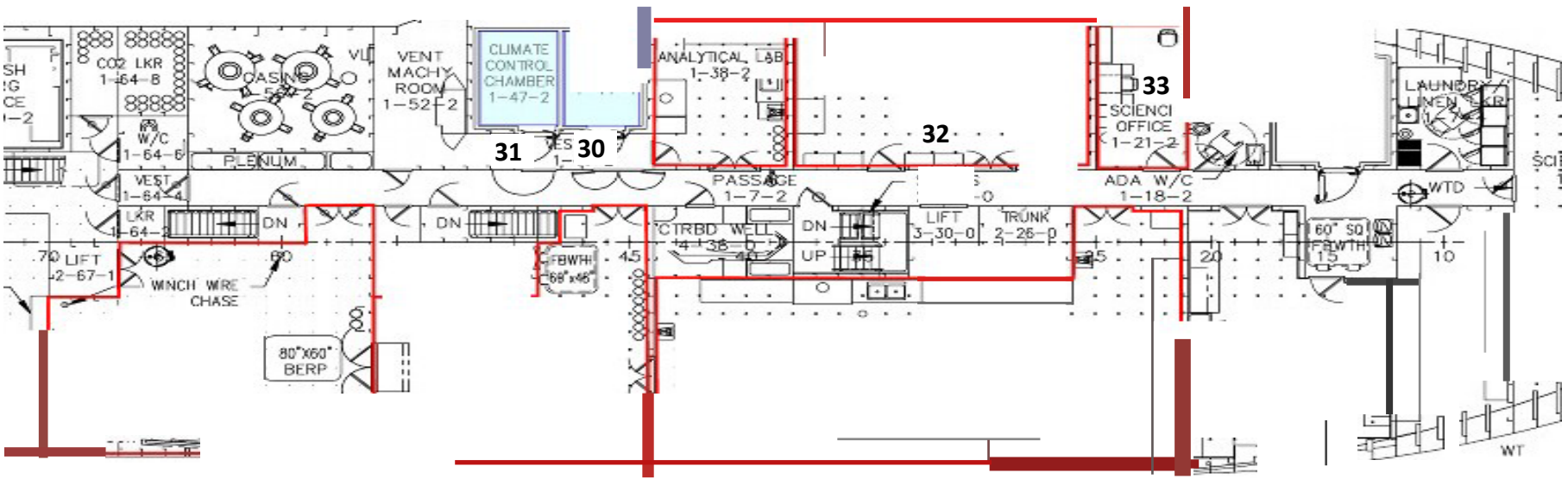

Figure 5
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Hawaii Rad Van #23