



Tritium Laboratory
24 September 2018

SWAB REPORT #916

SWAB DATE: 7 September 2018

WHOI Rad Van #625.6.03, R/V Atlantis, and 10' WHOI Rad Van

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Distribution:
SWAB Committee
David Fisichella

COMMENTS TO SWAB REPORTS

12 May 2014

Typical LSC instrument background values for ^3H 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	^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 $1000 \text{ dpm}/\text{m}^2$ 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}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 insitution promptly by phone or email.

REPORT FOR SWAB # 916

LOCATION: Wood Hole, MA

DATE: 7 September 2018

VESSEL/LAB: Rad Van #625.6.03, R/V Atlantis, and 10' Rad Van

TECHNICIAN: David Fisichella

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	432	± 72	43	± 25
	<u>Rad Van #625.6.03 (Figure 1)</u>				
3	Port 1st benchtop	**14710	± 337	*315	± 19
4	Port 2nd benchtop	*5896	± 215	*226	± 22
5	Port 3rd benchtop	*6757	± 218	*1340	± 61
6	Sink area	*4888	± 195	*168	± 19
7	Starboard center benchtop	*4140	± 174	*666	± 46
8	Fume hood (inside)	*3689	± 172	*153	± 21
9	Floor in front of LSC	*5327	± 201	*354	± 31
10	Center floor	*5364	± 202	*467	± 36
11	Entrance floor	*3854	± 177	*192	± 24
12	Inside reefer under counter	*4381	± 156	*3882	± 108
13	Inside upright reefer	*7418	± 244	*199	± 18
14	Deck outside van	*1820	± 139	*76	± 19
	<u>Atlantis Hydro Lab (Figure 2)</u>				
15	Hydrolab inner aft benchtop	*1483	± 134	46	± 16
16	Hydrolab sink area	*1430	± 117	34	± 12
17	Hydrolab inside fume hood	*1219	± 152	*51	± 20
18	Floor in front of fume hood	*1467	± 116	*79	± 21
	<u>WHOI 10' Rad Van (Figure 3)</u>				
19	Initial bucket blank C.O.#2 for 10 van	42	± 40	20	± 33
20	10 ft van LSC top cover	118	± 51	38	± 32
21	10 ft van LSC benchtop	-13	± 28	42	± 49
22	10 ft van bench opposite LSC	56	± 43	29	± 33
23	10 ft van laptop and surrounding area	85	± 48	47	± 34
24	10 ft van single door floor	65	± 45	33	± 33
25	10 ft van double door floor	76	± 49	20	± 30

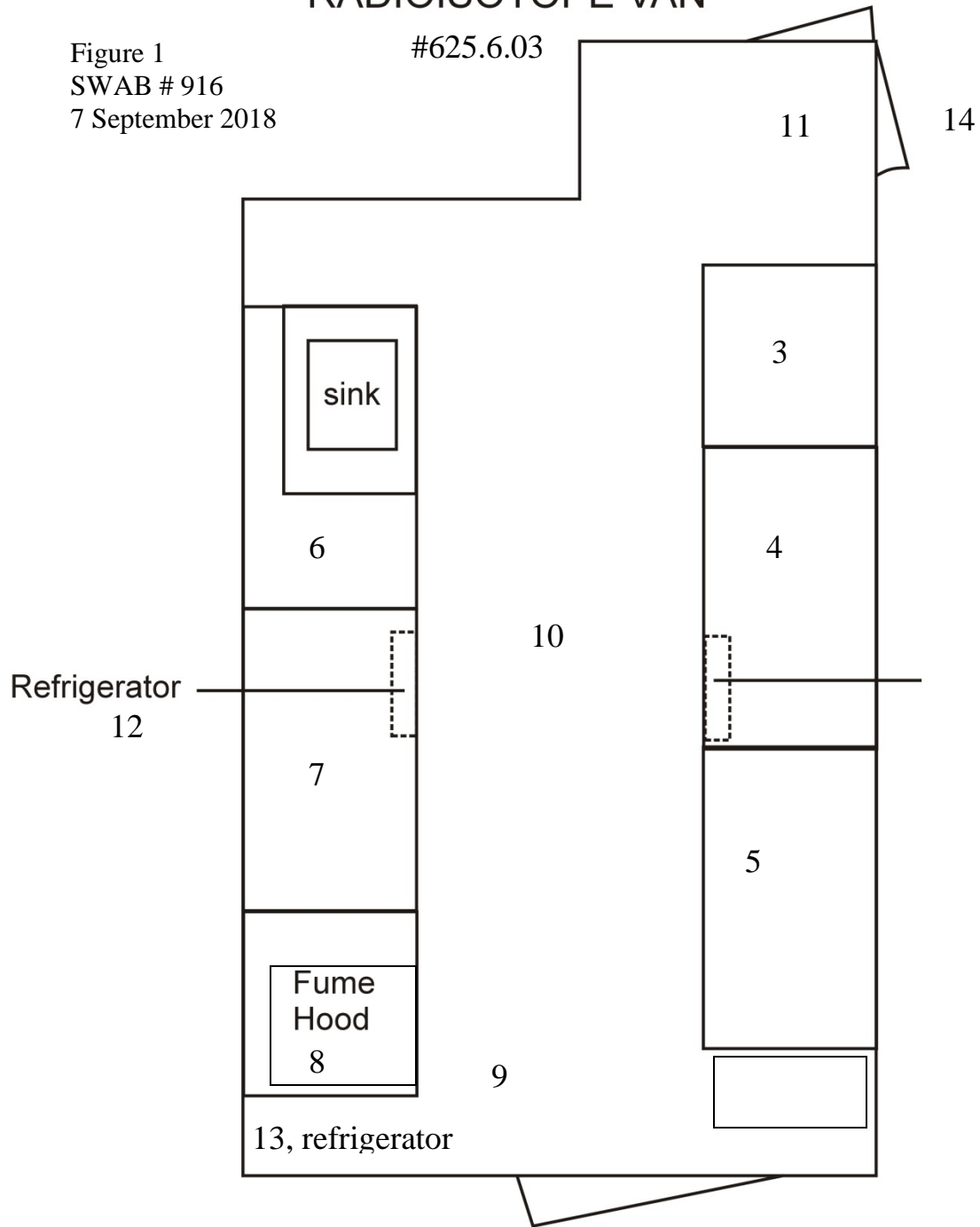
Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. The reports may now contain values less than zero. When 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. The initial bucket blank for CO #1 had above background ^3H and ^{14}C . Every sample collected in Van # 625.6.03 had minor ^{14}C and minor to moderate ^3H . The Port 1st benchtop should be cleaned ASAP. All deck areas in this van should be cleaned to help prevent tracking contamination outside of van. The deck outside the van should be cleaned ASAP. The hydrolab in the Atlantis had minor ^3H and ^{14}C contamination. These areas should be cleaned ASAP. It is possible that contamination in the bucket with CO #1 may have contributed to the contamination found in Van

WHOI RADIOISOTOPE VAN

#625.6.03

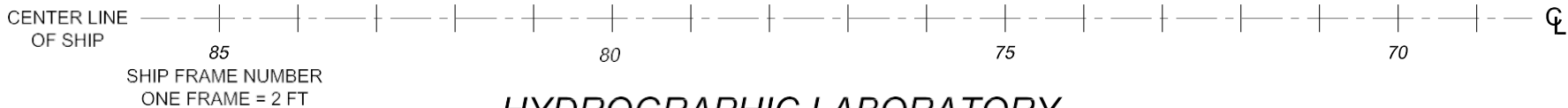
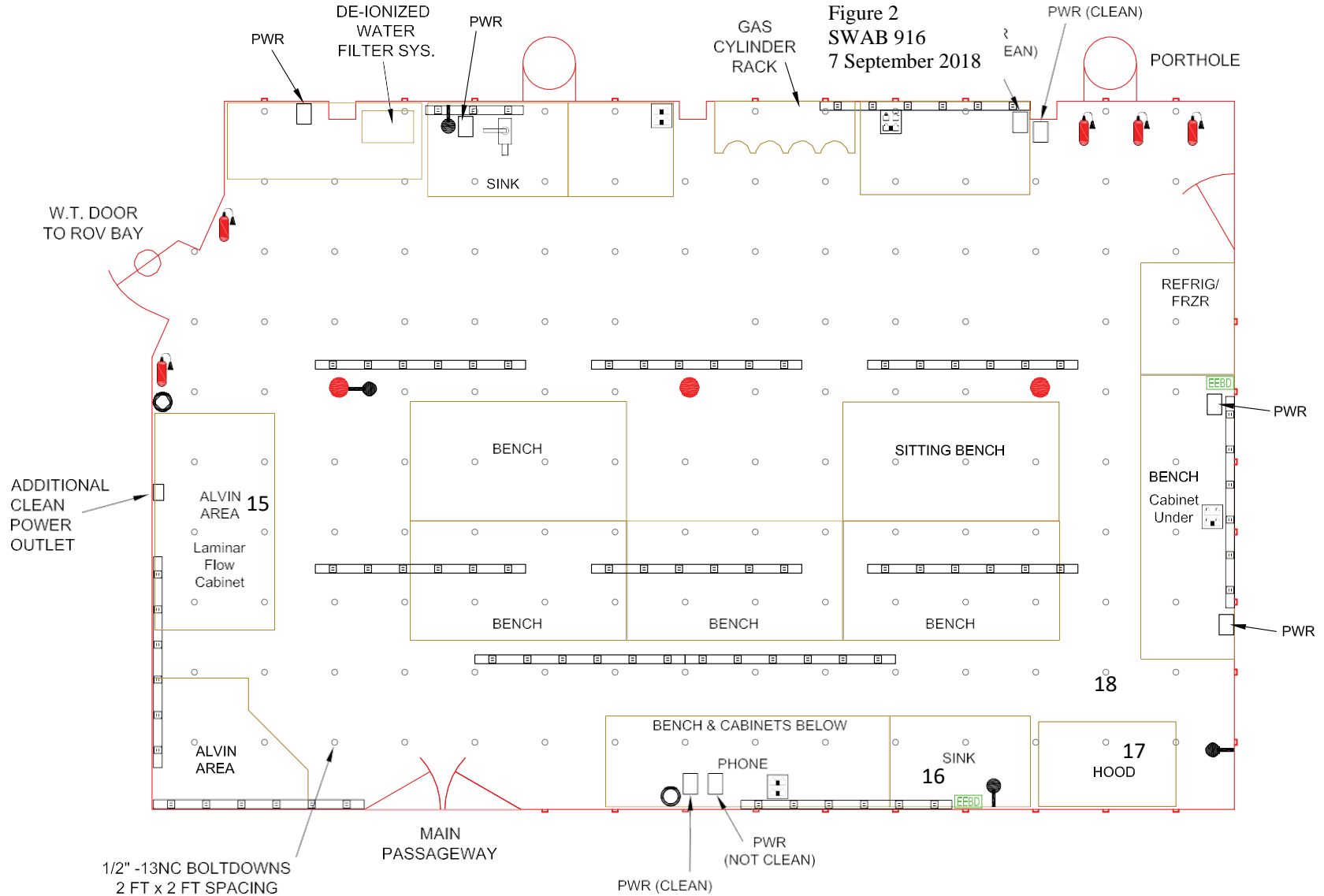
Figure 1
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FULL LENGTH OF LAB
ALL POWER CLEAN UNLESS NOTED

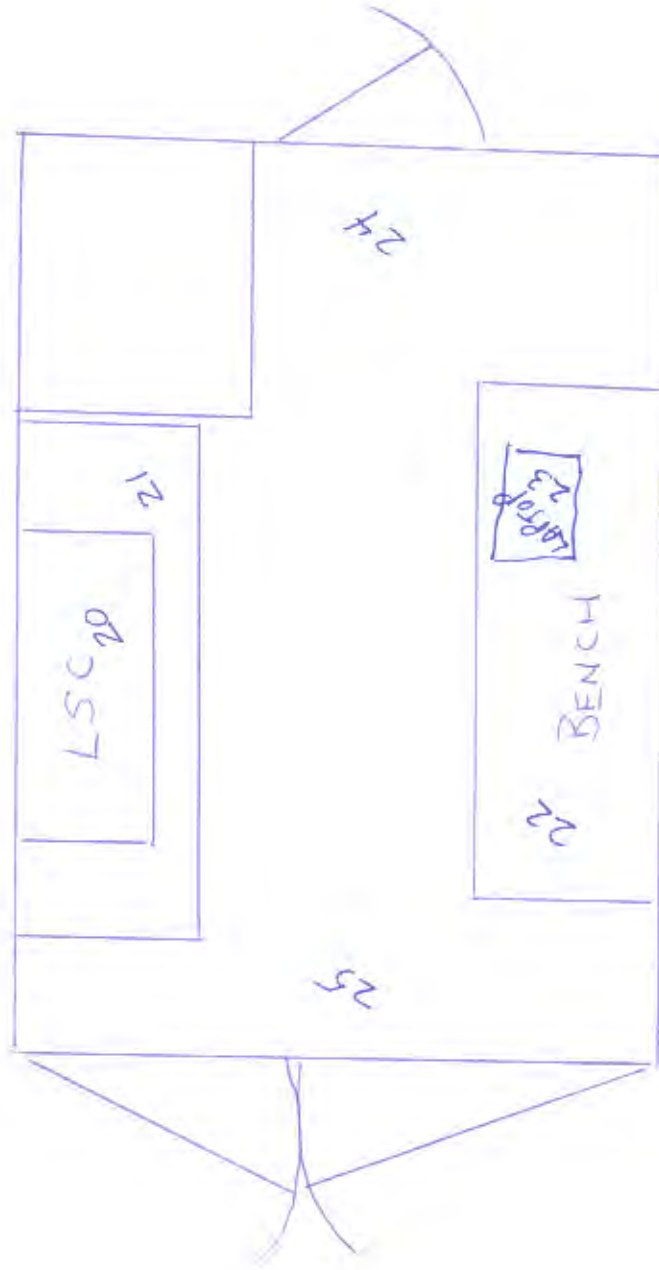
Figure 2
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HYDROGRAPHIC LABORATORY
Atlantis Main Deck, Room 1-64-2

Figure 3
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WHOI 10' LAB VAN



~ 1/2 m² SAMPLE AREA