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14 November 2011

SWAB REPORT # 607

SWAB DATE: 5 November 2011

R/V N. B. Palmer

James Happell

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Date: 2011.11.16 08:48:56 -05'00'

James D. Happell

Distribution:
SWAB Committee
Ethan Norris

COMMENTS TO SWAB REPORTS 23 November 2010

Typical LSC instrument background values for ^{3}H 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	^{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/m2 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 dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 607

LOCATION: Punta Arenas, Chile
VESSEL/LAB: *R/V N. B. Palmer*

DATE: 5 November 2011
TECHNICIAN: Cecilia Roig

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	0	±	0	20	±	38
	Aft Dry Lab (Figure 1)						
3	Top of Revco chest freezer	17	±	35	15	±	34
4	Inside of Revco chest freezer	10	±	36	6	±	33
5	Inside Thermo Scientific freezer	6	±	14	29	±	36
6	Inside Revco freezer	0	±	0	14	±	37
7	Inside Perceval incubator 00011176	27	±	36	22	±	34
8	Inside Fisher incubator 00113062	39	±	48	17	±	32
9	Deck in front of Isotemp 00011622	21	±	43	6	±	30
10	Inside Isotemp incubator 00011622	64	±	66	0	±	0
11	Deck in front of freezers	20	±	38	9	±	32
12	Port sink area	28	±	39	20	±	33
13	Deck at forward foor to passageway	13	±	36	9	±	33
14	Deck at aft door to passageway	47	±	50	0	±	4
15	Deck at aft door to Baltic Room	22	±	33	24	±	34
16	Aft sink area	0	±	0	7	±	40
17	Inside Percival incubator 00011175	38	±	52	0	±	0
	Forward Dry Lab (Figure 2)						
18	Deck inside forward dry lab	26	±	45	5	±	27
19	Deck inside door to passageway	27	±	34	29	±	34
	Bio Lab (Figure 3)						
20	Sink area	15	±	35	12	±	33
21	Benchtop right of sink	24	±	50	0	±	0
22	Inside aft fume hood	1	±	0	0	±	0
23	Inside forward fume hood	23	±	59	14	±	35
24	Port sink area	0	±	13	2	±	35
25	Deck in fron of aft fume hood	0	±	0	18	±	37
26	Deck in front of forward fume hood	0	±	0	7	±	40
27	Deck inside forward entrance	0	±	0	30	±	39
28	Deck in front of port sink	12	±	47	1	±	22
29	Aft sink area	12	±	34	12	±	34

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
30	Inside Fisher refrigerator 00011985	0	±	0	7	±	39
31	Inside Fisher refrigerator 0001986	0	±	0	26	±	37
32	Deck in front of refrigerators	8	±	28	13	±	34
33	Deck inside door to passageway	35	±	54	0	±	0
34	Bench top forward of port sink	0	±	0	15	±	40
35	Bench top aft of port sink	0	±	0	0	±	0
36	Bench top port of aft sink	19	±	33	22	±	34
37	Bench top next to forward entrance	3	±	13	17	±	35
38	FInal bucket blank #1	39	±	41	19	±	32
39	Initial bucket baln #2	9	±	0	0	±	0
	Hydro Lab (Figure 4)						
40	Inside Summit refrigerator	2	±	0	0	±	0
41	Inside Fisher refrigerator	0	±	0	0	±	0
42	Aft sink area	13	±	40	6	±	31
43	Starboard sink area	13	±	44	7	±	32
44	Aft bench top	33	±	79	0	±	0
45	Deck in front of aft sink	23	±	50	0	±	-65
46	Deck in front of starboard sink	4	±	53	0	±	0
47	Deck in front of refrigerators	0	±	0	9	±	37
	Wet Lab (Figure 5)						
48	Forward bench top	14	±	34	14	±	34
49	Deck inside forward door	59	±	42	9	±	26
50	Aft sink area	53	±	47	11	±	28
51	Starboard bench top	5	±	42	1	±	29
52	Deck inside port door	44	±	43	15	±	31
53	Deck in center of lab	0	±	2	20	±	36
54	Deck inside starboard doors	14	±	27	23	±	35
55	Aft bench top	14	±	85	0	±	0
	Aquarium (Figure 6)						
56	Deck outside aft entrance to Aquarium	20	±	43	7	±	31
57	Deck outside forward entrance to Aquariu	29	±	55	0	±	0
	02 Deck, Helo Pad (Figure 7)						
58	Inside Baxter top 00011923	75	±	51	17	±	29
59	Inside Baxter bottom 00011923	19	±	47	3	±	27
60	Bench top starboard of sink	13	±	64	0	±	0

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
61	Bench top port of sink	22	±	48	0	±	-8
62	Deck in front of Baxter	11	±	42	4	±	31
63	Deck in front of sink	11	±	89	0	±	0
64	Deck in passageway	2	±	0	0	±	0
65	Deck outside passageway door	86	±	41	26	±	30
66	Deck outside starboard door	184	±	43	34	±	27
67	Deck outside where rad waste is stored	18	±	27	27	±	35
68	Deck outside where rad van was located	41	±	46	0	±	2
	128 Office (No figure)						
69	Deck in front of sofa	2	±	0	0	±	0
70	Final bucket blank #2	35	±	54	0	±	0

Comments

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

Figure 1
SWAB #607
Nathaniel B. Palmer
11/5/2011

Aft Dry Lab
1036 sq. ft.

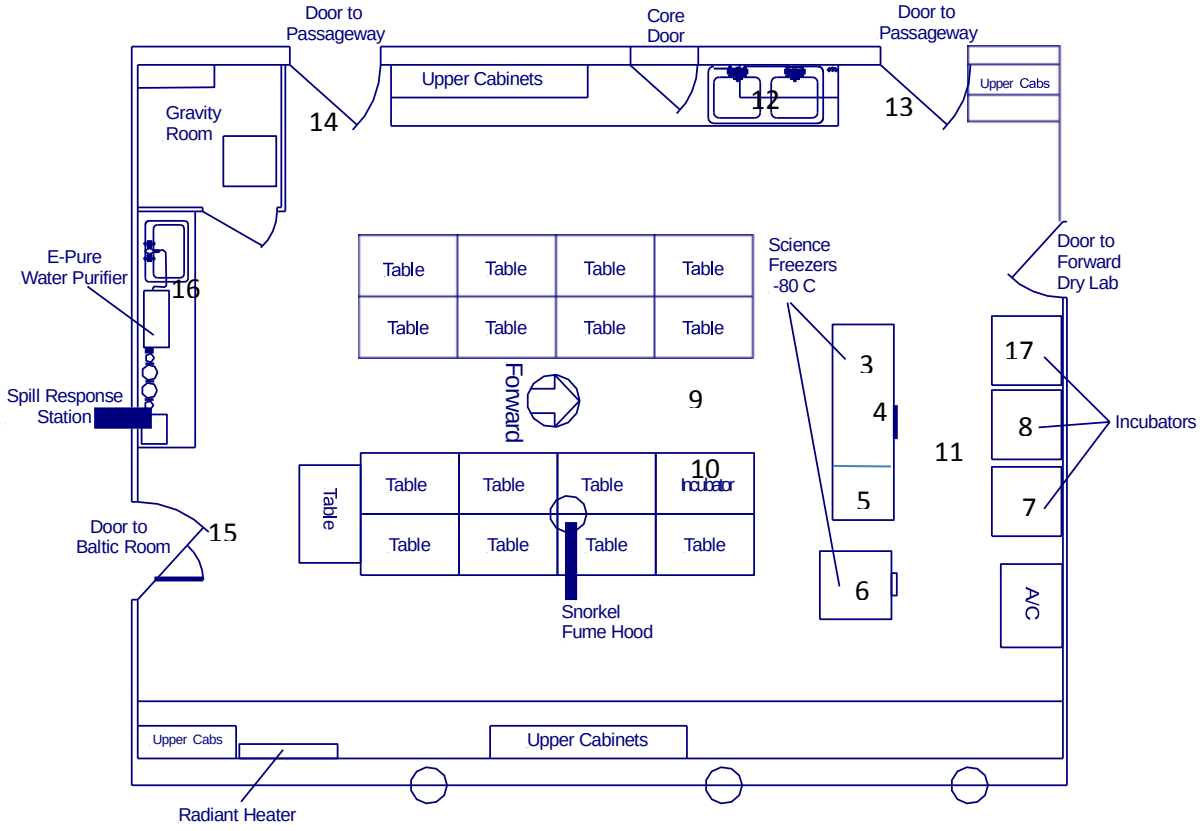

Figure 2
SWAB #607
Nathaniel B.Palmer 11/5/2011

Forward Dry Lab

1150 sq. ft.

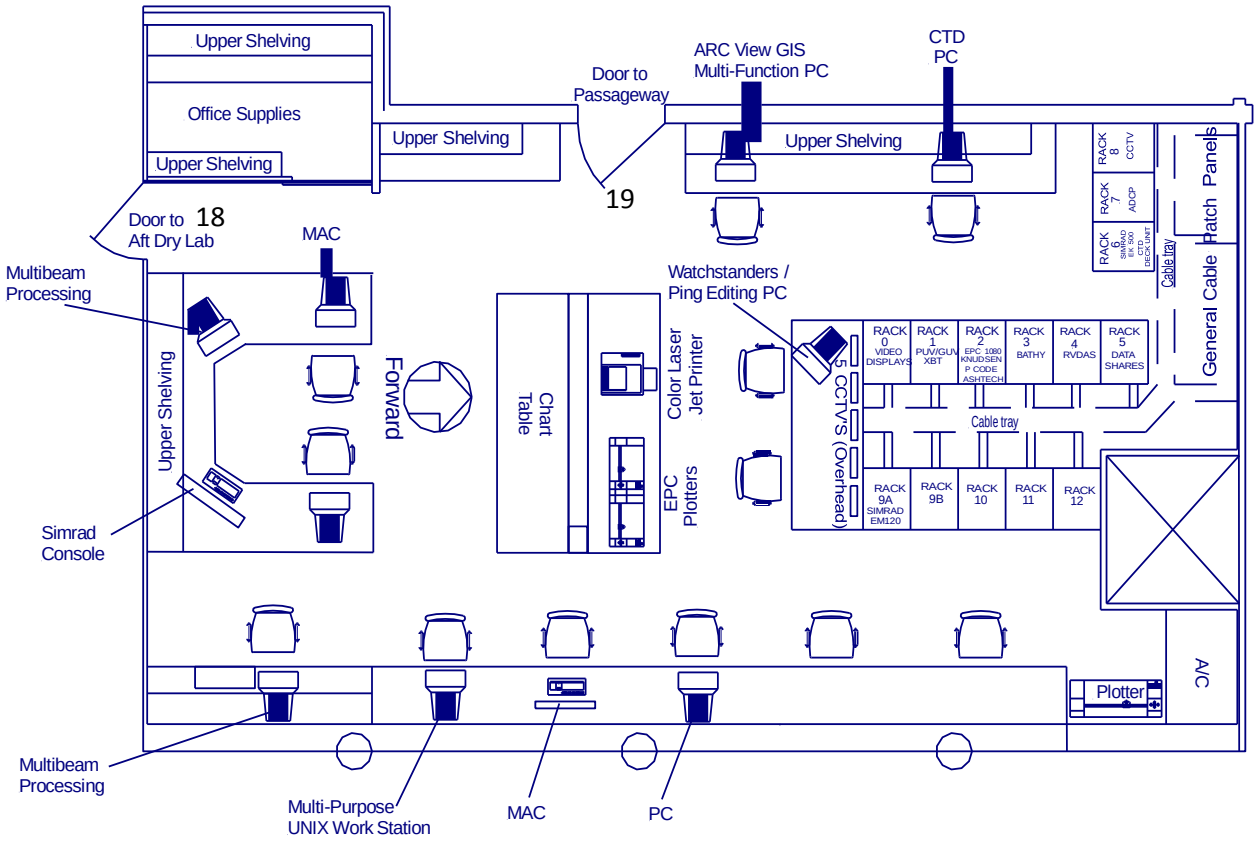

Figure 3 SWAB #607 Nathaniel B. Palmer 11/5/2011

Bio Lab
460 sq. ft.

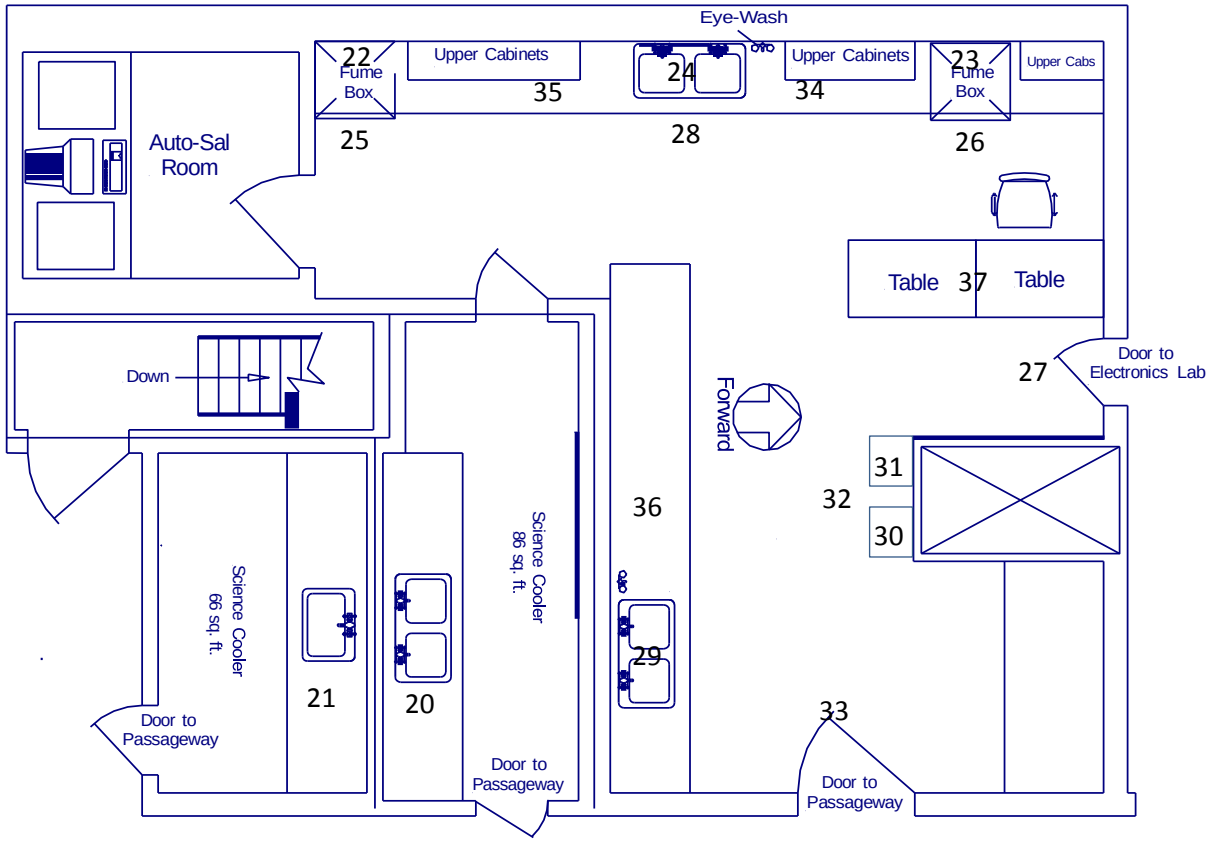

Figure 4 SWAB #607
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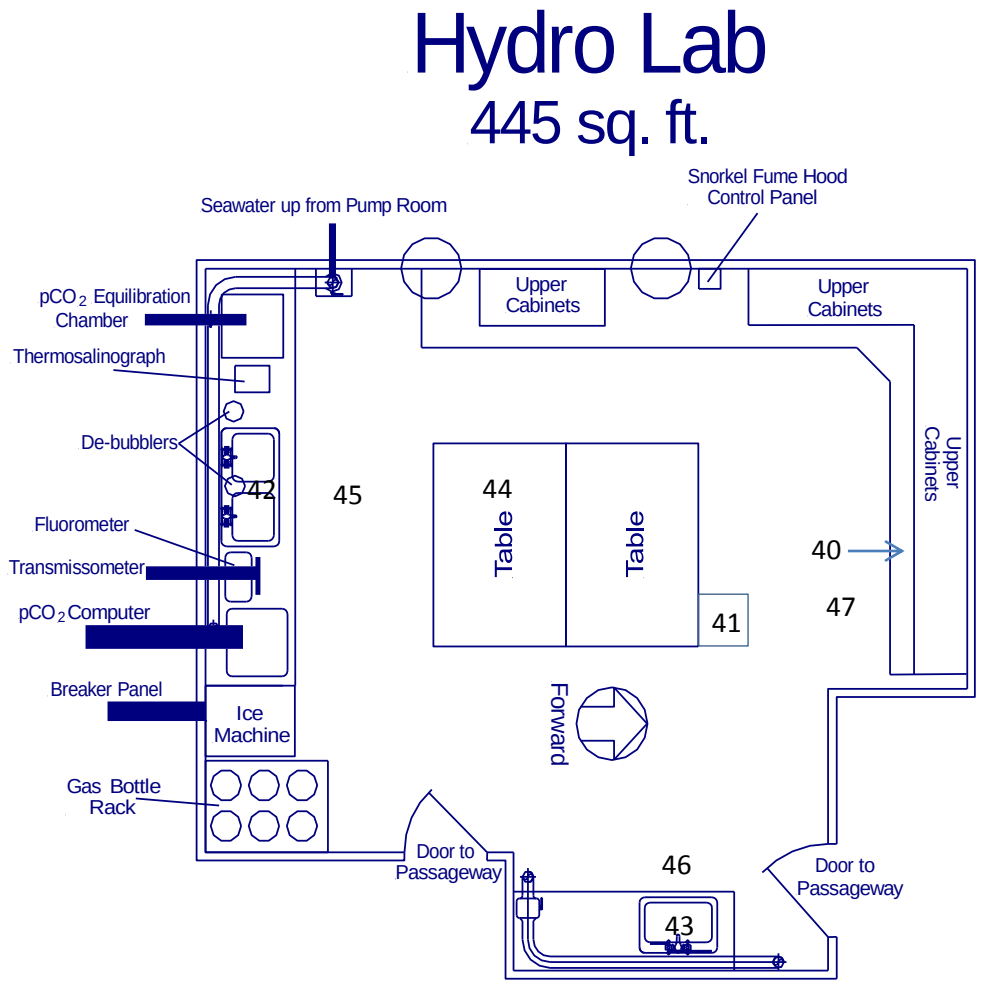

Figure 5 SWAB #607 Nathaniel B. Palmer 11/5/2011

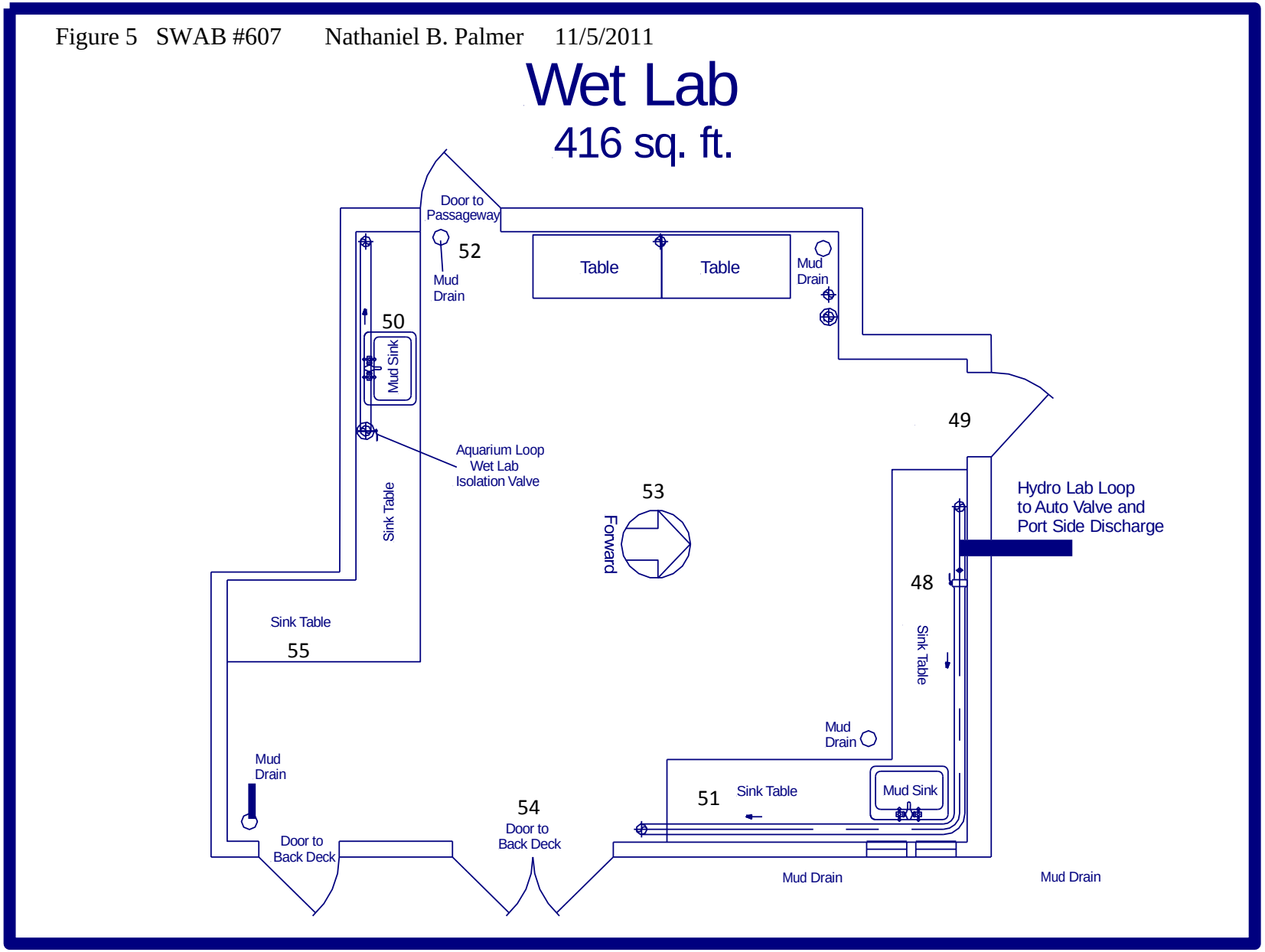

Figure 6
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11/5/2011

Aquarium Room
298 sq. ft.

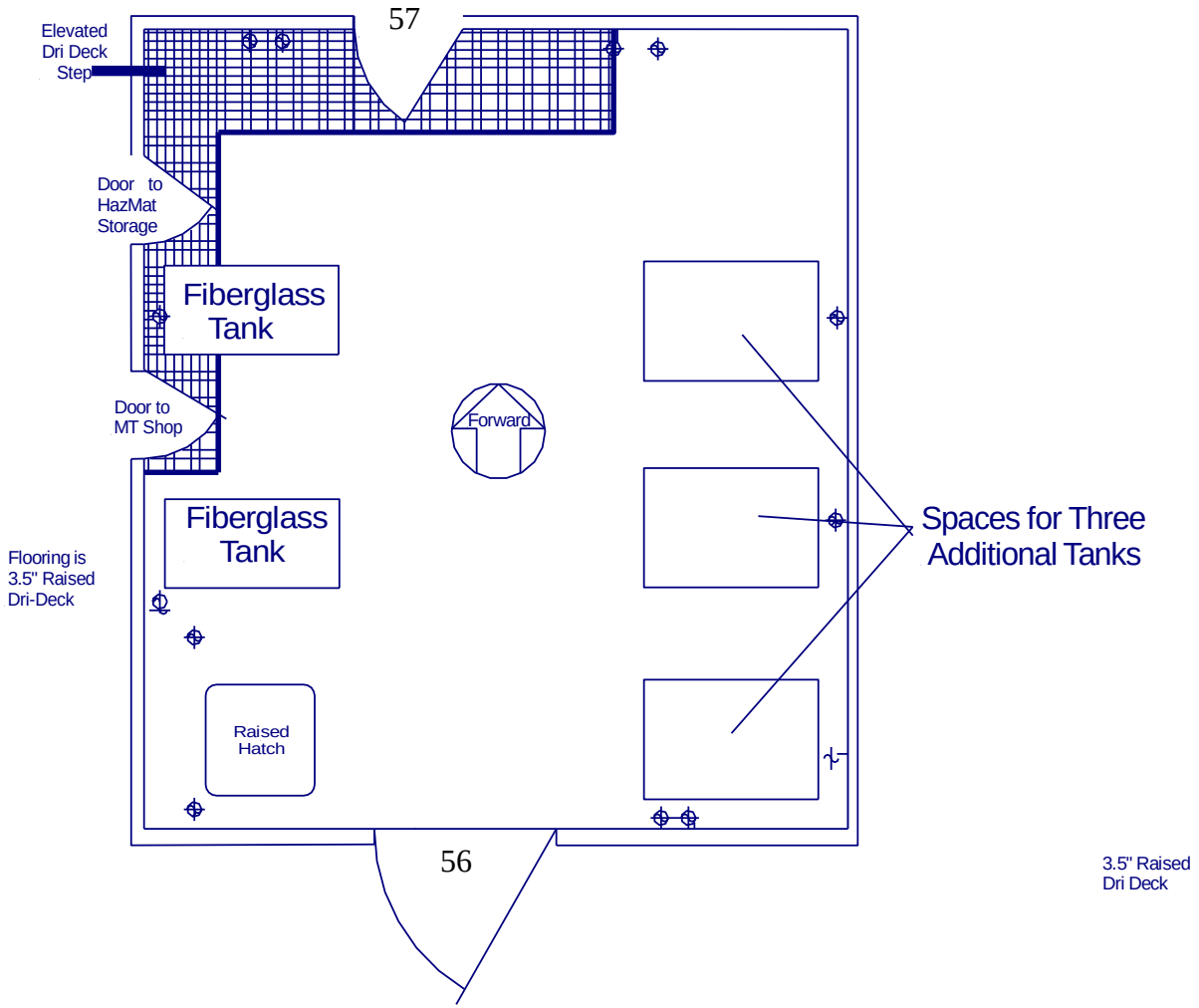

Figure 7 SWAB #607 Nathaniel B. Palmer 11/5/2011