

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



Tritium Laboratory

5 July 2018

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SWAB REPORT # 907

SWAB DATE: 24 June 2018

R/V Sally Ride
CalCOFI Van

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Gary Lain

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 # 907

LOCATION: San Diego, CA
VESSEL: *R/V Sally Ride*

DATE: 24 June 2018
TECHNICIAN: Charlene Grall

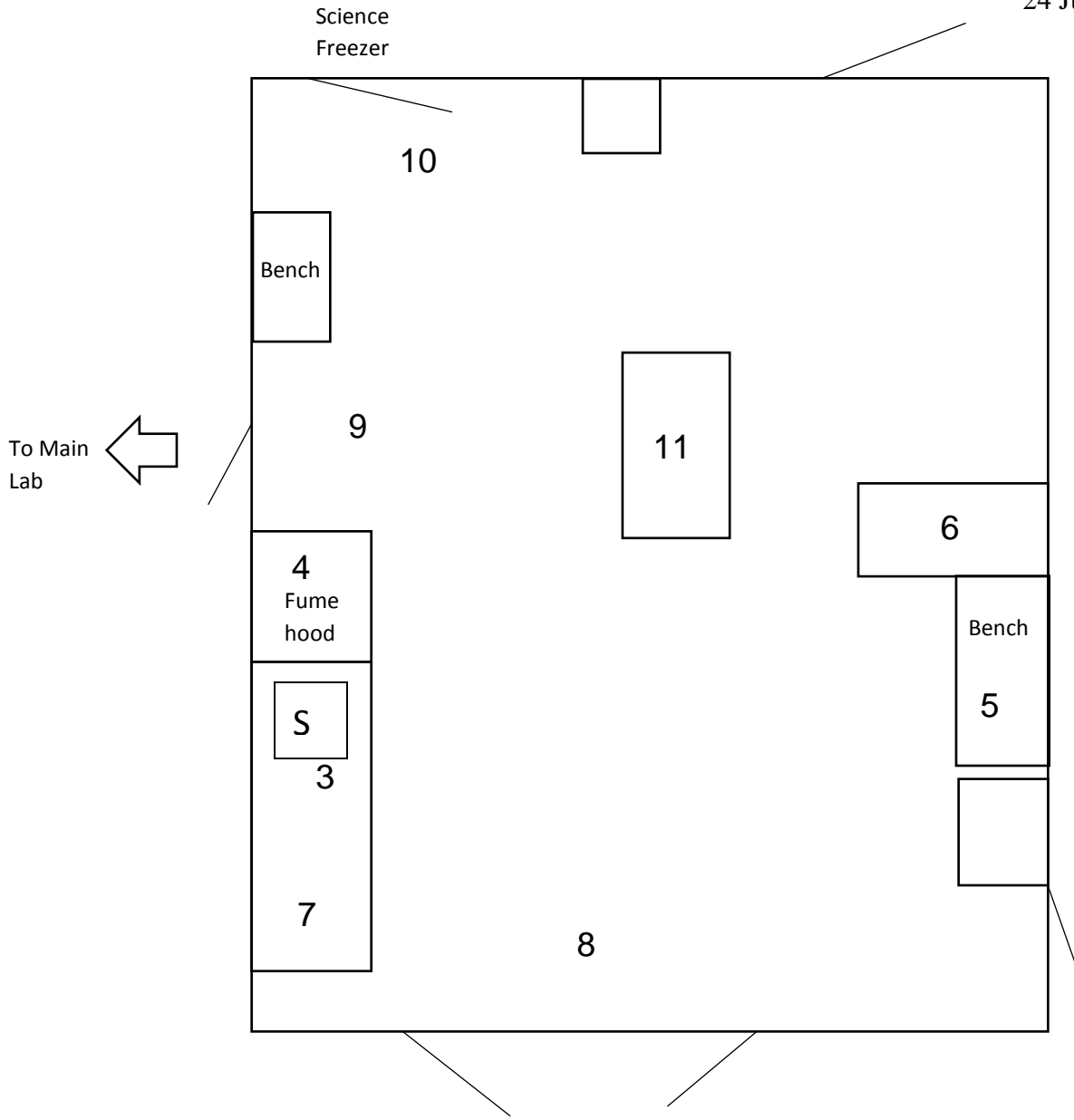
Sample #	Sample Identification	^3H dpm/m ²			^{14}C dpm/m ²		
		activity	error		activity	error	
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank C.O. # 1	0	±	0	-9	±	0
	<u>Wet Lab (Figure 1)</u>						
3	Sink area	-30	±	25	6	±	51
4	Inside fume hood	-18	±	42	-8	±	39
5	Starboard bench	-32	±	38	12	±	42
6	Wooden benchtop forward of starboard benchtop	1	±	59	-18	±	27
7	Benchtop aft of sink	-27	±	47	3	±	66
8	Deck inside aft entrance	-23	±	32	-2	±	33
9	Deck inside port entrance	-54	±	65	10	±	52
10	Deck in front of Science Freezer	-22	±	33	-10	±	49
11	Benchtop opposite of port entrance	1	±	61	-8	±	23
	<u>Main Lab (Figure 2)</u>						
12	Starboard sink area	-16	±	37	-6	±	26
13	Inside starboard fume hood	-13	±	29	7	±	40
14	Inside port fume hood	-19	±	45	-27	±	43
15	Inside Magic Chef refrigerator	13	±	50	-1	±	220
16	Inside Magic Chef freezer	11	±	101	-23	±	37
17	Aft section of port bench	-14	±	51	-2	±	29
18	Forward section of port bench	8	±	0	-35	±	44
19	Aft section of center bench	-38	±	27	17	±	41
20	Forward section of center bench	-27	±	35	-3	±	25
21	Deck in front of Science Freezer	-49	±	59	19	±	42
22	Deck inside forward entrance to lab	-23	±	30	4	±	53
23	Deck between bench and Magic Chef refrigerator	-35	±	43	8	±	47
24	Deck at aft entrance between starboard benches	-34	±	28	1	±	52
25	Benchtop opposite of starboard aft entrance	-58	±	36	44	±	40

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
	<u>Main Deck (Figure 3)</u>				
26	Inside head aft of Electronics Shop	-22	± 37	-5	± 46
27	Deck in center of Electronics Shop	-13	± 48	12	± 39
28	Deck between Main Lab and Computer Lab	-60	± 29	-23	± 28
29	Starboard working deck aft of entrance to vestibule	-15	± 21	18	± 38
30	Deck where CTD rosette was located	-29	± 49	-2	± 24
31	Aft deck of Staging Bay	-6	± 16	-7	± 18
32	Deck below entrance to CALCofi Van	36	± 31	34	± 35
33	Deck behind van where incubator stood	-55	± 33	34	± 41
	<u>CalCOFI Rad Van</u>				
34	Inside refrigerator on bottom	-5	± 42	24	± 37
35	Sink area	-3	± 25	18	± 37
36	Benchtop adjacent to refrigerator	-66	± 55	27	± 42
37	Benchtop adjacent to sink	14	± 56	-4	± 23
38	Desk across from sink	-22	± 25	-4	± 29
39	Deck in center of van	-6	± 175	17	± 37
40	Final bucket sample	-30	± 39	-7	± 31

Comments

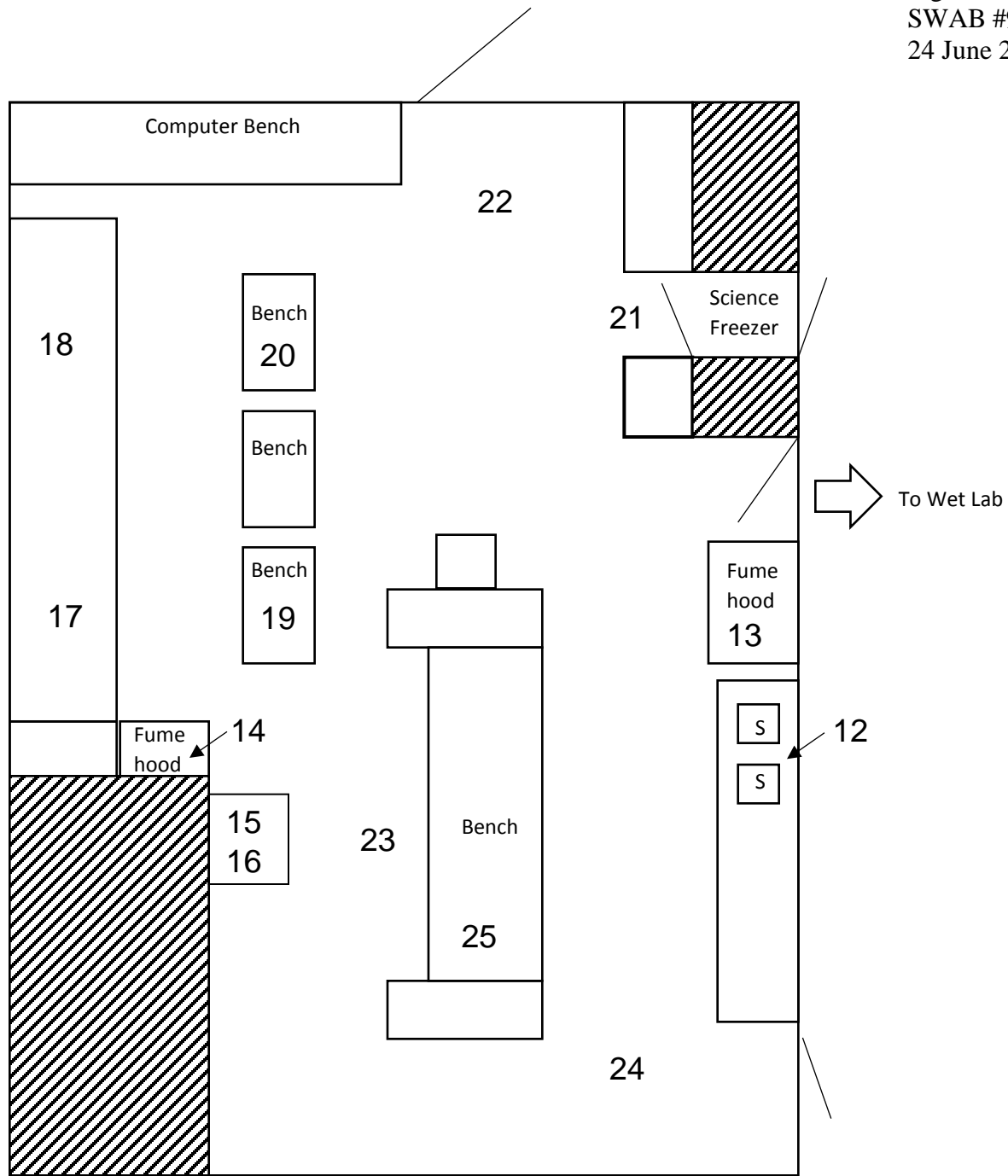
Please note that the error reported for each isotope is the two-standard deviation counting error. The reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. All areas tested on the ship and in the van were free from any isotope contamination that requires cleaning.

Figure 1
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24 June 2018



R/V Sally Ride
WET LAB

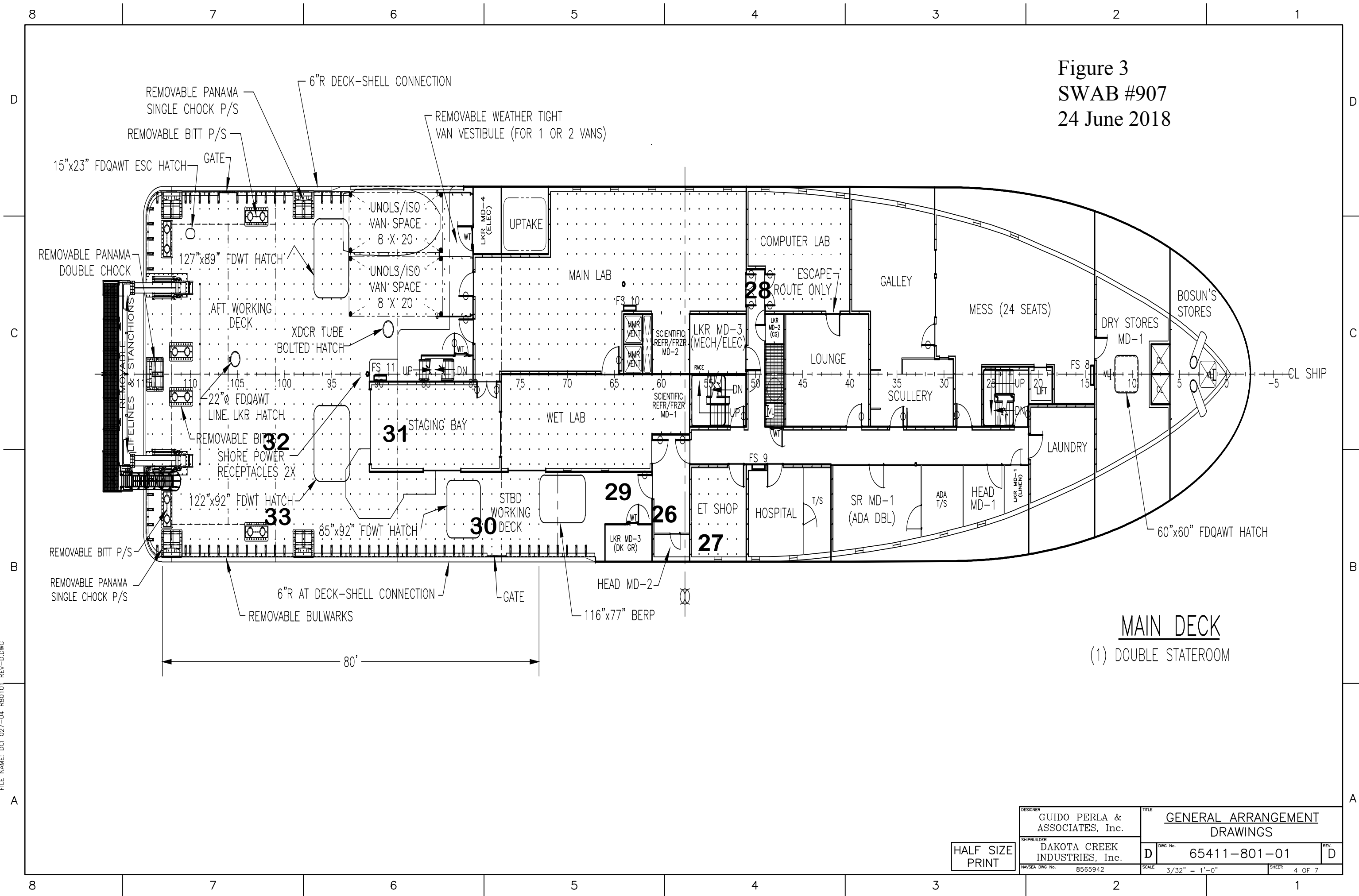
Figure 2
SWAB #907
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R/V Sally Ride

MAIN LAB

Figure 3
SWAB #907
24 June 2018



PLOT DATE: Thursday, November 14, 2013
 PLOT TIME: 11:29:35 am
 PLOT DR: 65311.C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
 FILE NAME: DCI 027-04-R80101-REV-D.DWG

HALF SIZE
PRINT

DESIGNER GUIDO PERLA & ASSOCIATES, Inc.	TITLE GENERAL ARRANGEMENT DRAWINGS
SHIPBUILDER DAKOTA CREEK INDUSTRIES, Inc.	DWG No. 65411-801-01
NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0"
	SHEET: 4 OF 7

Figure 4
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CalCOFI Van

