

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



Tritium Laboratory
26 June 2023

Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1031

Ph: 305-421-4100
Fax: 305-421-4112
E-mail: Tritium@rsmas.miami.edu

SWAB REPORT # 1062

SWAB DATE: 12 June 2023

R/V Sally Ride & Radioisotope Van 625.1.05-1

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 # 1062

LOCATION: Newport, OR
 VESSEL: R/V Sally Ride

DATE: 12 June 2023
 TECHNICIAN: Charlene Grall

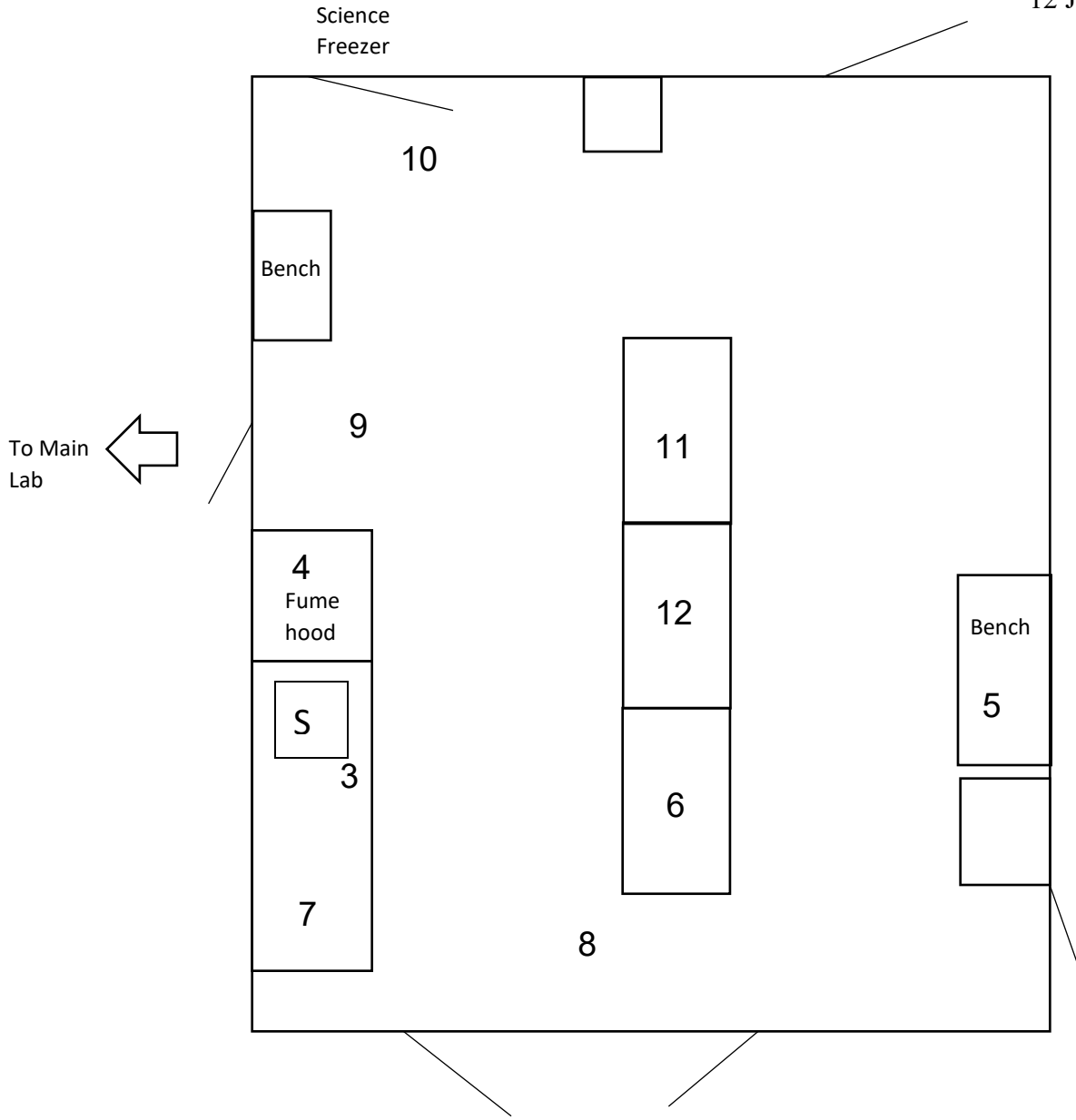
Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank C.O. # 1	-1	± 36	-13	± 33
	<u>Wet Lab (Figure 1)</u>				
3	Sink area	10	± 27	-5	± 4
4	Inside fume hood	-24	± 29	-6	± 6
5	Starboard benchtop	5	± 49	-6	± 6
6	Wood benchtop opposite of sink	-26	± 31	-9	± 8
7	Port benchtop aft of sink	-9	± 29	-8	± 7
8	Deck inside aft entrance	-3	± 30	11	± 10
9	Deck inside port entrance	-15	± 48	-3	± 3
10	Deck in front of science freezer	8	± 27	-4	± 4
11	Benchtop opposite of port sink	-36	± 6	2	± 1
12	Benchtop opposite of fume hood	-20	± 24	-2	± 159
	<u>Main Lab (Figure 2)</u>				
13	Inside starboard fume hood	-79	± 109	1	± 1
14	Inside port fume hood	-98	± 135	20	± 15
15	Deck in front of port fume hood	6	± 22	-1	± 1
16	Deck in front of starboard sink area	-9	± 3	1	± 13
17	Aft section of port benchtop	10	± 16	4	± 8
18	Forward section of port benchtop	22	± 19	4	± 8
19	Center section of center benchtop	24	± 29	-12	± 9
20	Forward section of center benchtop	-16	± 52	-2	± 1
21	Deck in front of science freezer	8	± 126	-15	± 11
22	Deck inside forward entrance	-3	± 1	-9	± 6
23	Benchtop across from starboard fume hood	-3	± 1	3	± 10
24	Deck at aft entrance	-38	± 7	8	± 12
25	Benchtop opposite starboard aft entrance	-7	± 3	0	± 0
26	Starboard sink area	-21	± 25	18	± 11
31	Inside refrigerator near starboard aft door	-33	± 6	7	± 12

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
<u>Main Deck (Figure 3)</u>					
27	Deck in Mud Room	0	± 3	3	± 9
28	Deck forward of CTD on Starboard main deck	0	± 0	-1	± 4
29	Deck ft of CTD on Starboard main deck	-14	± 46	3	± 12
30	Center of staging bay deck	52	± 23	6	± 7
32	Deck below entrance to radioisotope van	-32	± 6	14	± 11
<u>Radioisotope Van 625.1.05-1 (Figure 4)</u>					
33	Intermediate bucket blank	0	0	-4	4
34	Benchtop adjacent to sink	4	± 1	174*	± 19
35	Benchtop adjacent to fume hood	-50	± 26	222*	± 21
36	Inside fume hood	115	± 159	-57	± 22
37	Deck in front of fume hood	36	± 12	147*	± 18
38	Benchtop adjacent to LSC	1	± 1	82*	± 15
39	Inside freezer/refrigerator adjacent to sink	-30	± 8	349*	± 26
40	Inside freezer/refrigerator across from LSC	-32	± 6	641*	± 34
41	Deck in center of van below LSC	-63	± 17	445*	± 29
42	Sink area	-24	± 6	31	± 12
43	Benchtop across from sink	-70	± 9	1236*	± 47
44	Inside single door entrance	-21	± 6	324*	± 25
45	Final bucket bank	-24	± 7	12	± 11

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 on the ship were free from isotope contamination requiring cleaning. The Rad Van had minor ¹⁴C contamination. No action is necessary.

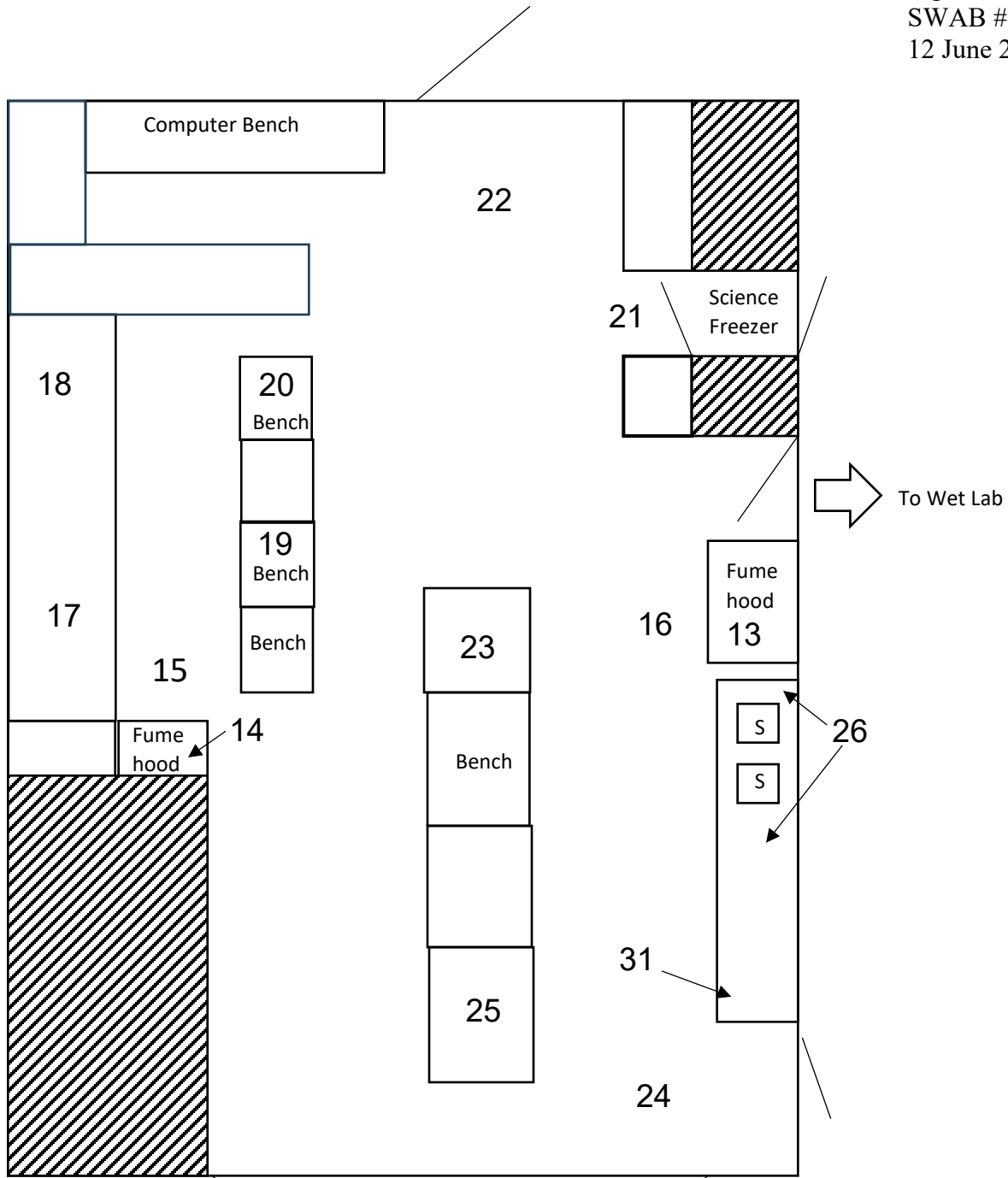
Figure 1
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R/V Sally Ride

WET LAB

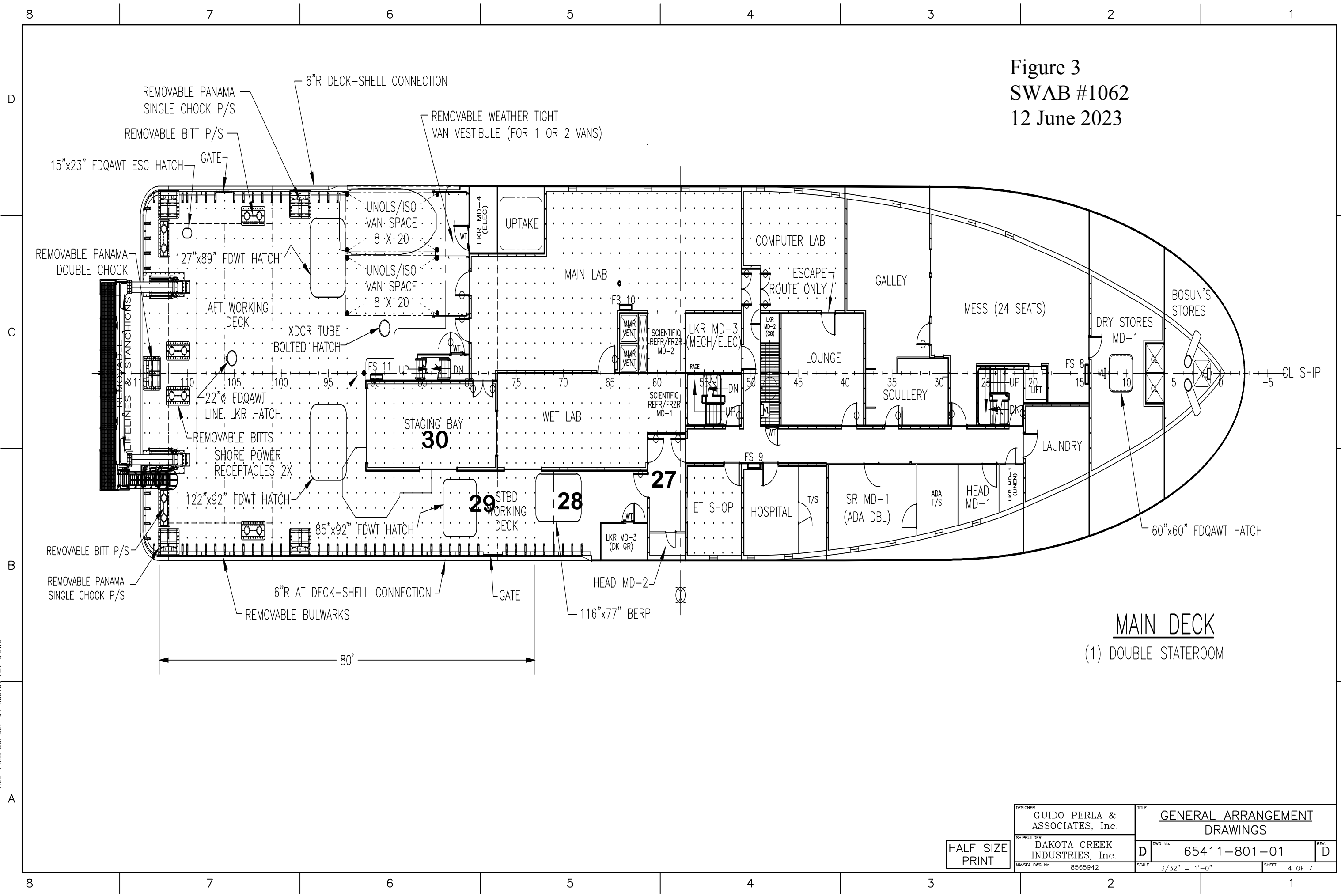
Figure 2
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R/V Sally Ride

MAIN LAB

Figure 3
SWAB #1062
12 June 2023



MAIN DECK
(1) DOUBLE STATEROOM

PLOT DATE: Thursday, November 14, 2013
PLOT TIME: 11:29:35 am
PLOT DR: 65311_C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
FILE DR: DCI 027-04-R80101_REV-D.DWG
FILE NAME:

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

UNOLS Rad Van 625.1.05-1 (aka R5)

