

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



Tritium Laboratory

26 October 2016

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SWAB REPORT # 839

SWAB DATE: 22 November 2016

R/V Sally Ride
CalCOFI Van

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Gary Lain
Dave Wolgast

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 # 839

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

DATE: 22 November 2016
TECHNICIAN: Charlene Grall

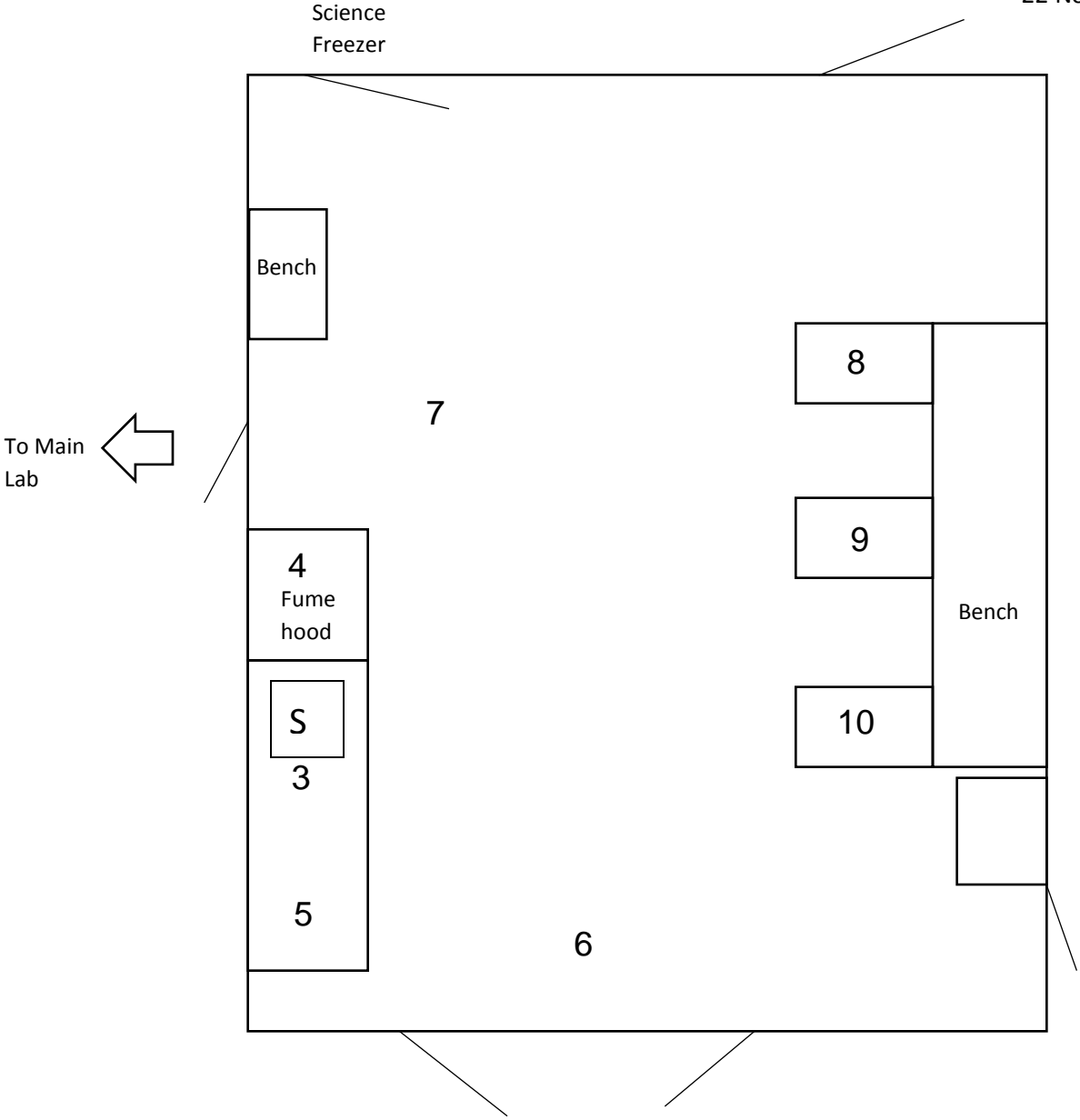
Sample #	Sample Identification	³ H dpm/m ²			¹⁴ C dpm/m ²		
		activity	±	error	activity	±	error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	33	±	49	9	±	45
	<u>Wet Lab (Figure 1)</u>						
3	Sink area	-5	±	25	10	±	37
4	Inside fume hood	6	±	20	18	±	36
5	Benchtop aft of sink	15	±	46	-1	±	0
6	Deck inside aft entrance	9	±	26	15	±	35
7	Deck inside port entrance	32	±	45	3	±	24
8	Wood benchtop, forward section	34	±	50	-4	±	33
9	Wood benchtop, middle section	39	±	51	-8	±	20
10	Wood benchtop, aft section	28	±	40	11	±	32
	<u>Main Lab (Figure 2)</u>						
11	Starboard sink area	22	±	49	-2	±	19
12	Deck inside starboard entrance to Staging Bay	2	±	7	30	±	37
13	Deck inside aft port entrance	4	±	23	9	±	35
14	Inside starboard fume hood	5	±	19	15	±	36
15	Inside port fume hood	-10	±	33	21	±	38
16	Port benchtop, forward section	6	±	26	10	±	35
17	Port benchtop, aft section	-5	±	60	10	±	37
18	Middle benchtop, forward section	13	±	32	12	±	34
19	Middle benchtop, aft section	18	±	42	4	±	29
20	Starboard benchtop, forward section	3	±	21	6	±	35
21	Starboard benchtop, aft section	-5	±	66	17	±	37
22	Benchtop aft of starboard sink	-7	±	28	40	±	38
23	Benchtop aft of Science Freezer	-17	±	48	1	±	26
24	Deck in front of computer bench	32	±	50	-3	±	35
	<u>Miscellaneous Areas of Main Deck (Figure 3)</u>						
25	Deck in front of forward bench of Computer Lab	14	±	33	12	±	34
26	Deck in center of ET Shop	16	±	26	28	±	36
27	Deck inside Laundry Room	20	±	40	7	±	31
28	Deck of Staging Bay inside starboard opening	56	±	50	3	±	17
29	Deck outside port aft entrance to Main Lab	-13	±	0	17	±	38

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
30	Deck outside starboard aft entrance to Main Lab <u>Focsle Deck (Figure 3)</u>	21	± 36	15	± 34
31	Deck outside passage forward of Haz Mat Locker <u>01 Deck (Figure 3)</u>	10	± 26	18	± 36
32	Deck of Library/Conference Room <u>CalCOFI Rad Van (Figure 4)</u>	-9	± 48	5	± 21
33	Intermediate bucket sample	29	± 61	-16	± 53
34	Inside refrigerator	22	± 44	3	± 25
35	Benchtop adjacent to refrigerator	51	± 60	-20	± 44
36	Bechtop across from sink	43	± 53	-9	± 11
37	Sink area	-9	± 9	*121	± 41
38	Benchtop adjacent to sink area	25	± 31	34	± 36
39	Deck in center of van	17	± 53	-2	± 18
40	Final bucket sample	13	± 26	23	± 36

Comments

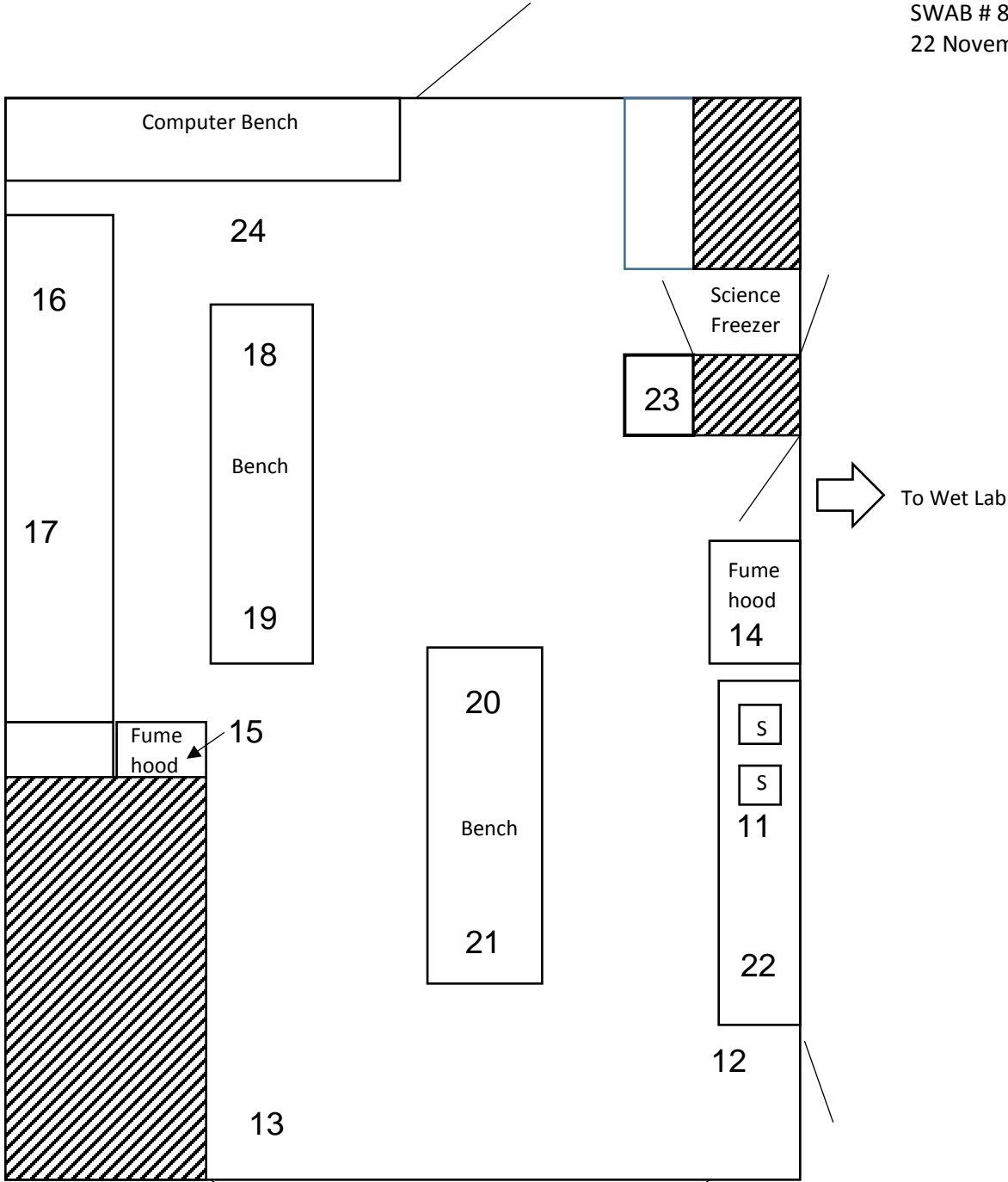
Please note that the error reported for each isotope is the two-standard deviation counting error. The reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded 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 were free from any isotope contamination that requires cleaning. The CalCOFI Radioisotope Van requires no cleaning.

Figure 1
SWAB # 839
22 November 2016



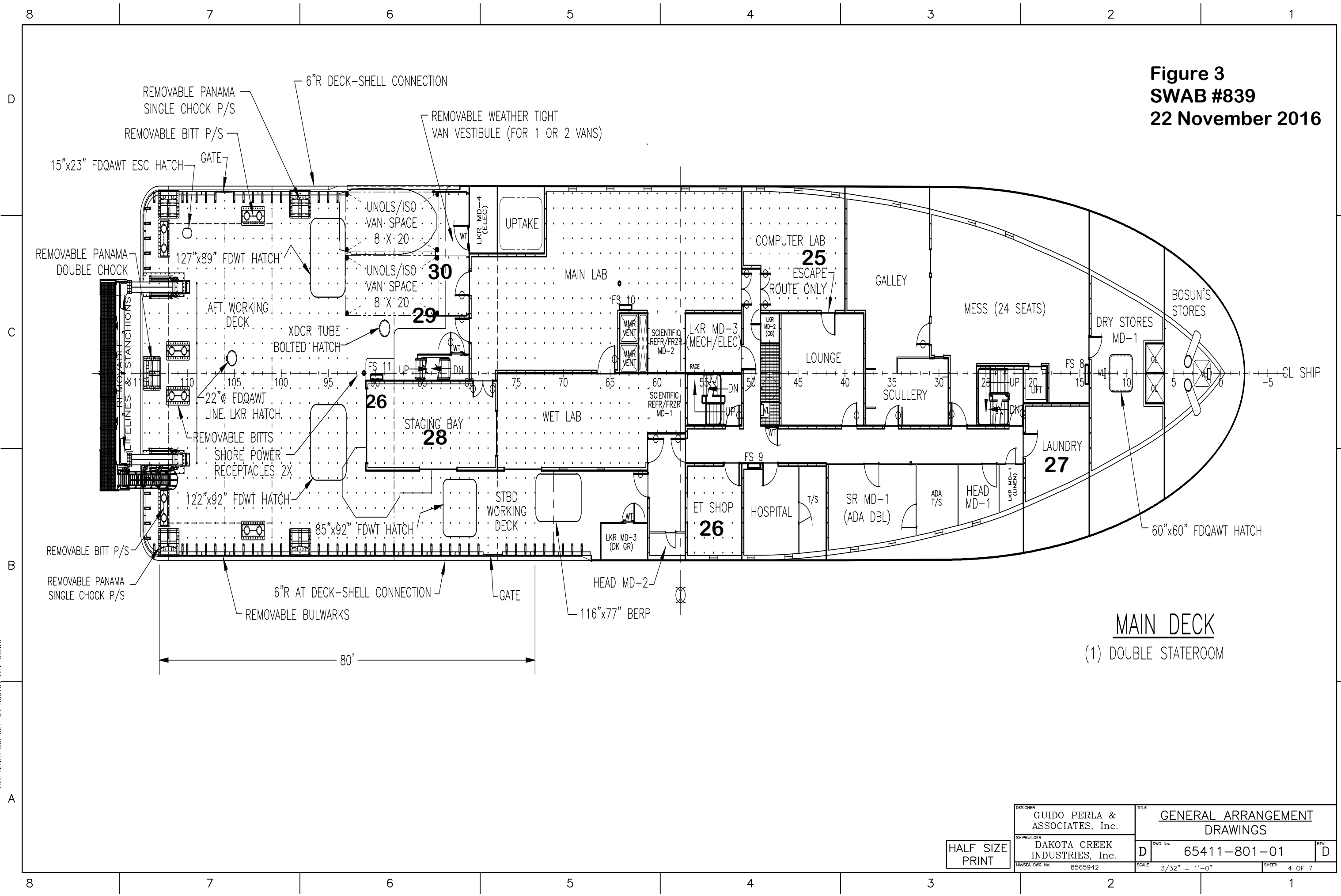
R/V Sally Ride
WET LAB

Figure 2
SWAB # 839
22 November 2016



R/V Sally Ride
MAIN LAB

Figure 3
SWAB #839
22 November 2016



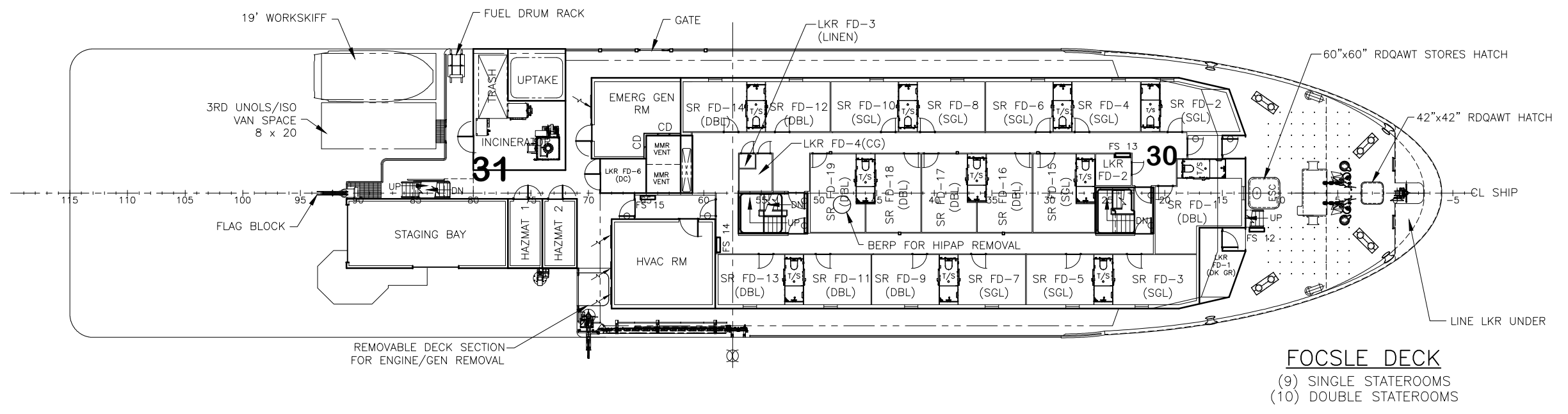
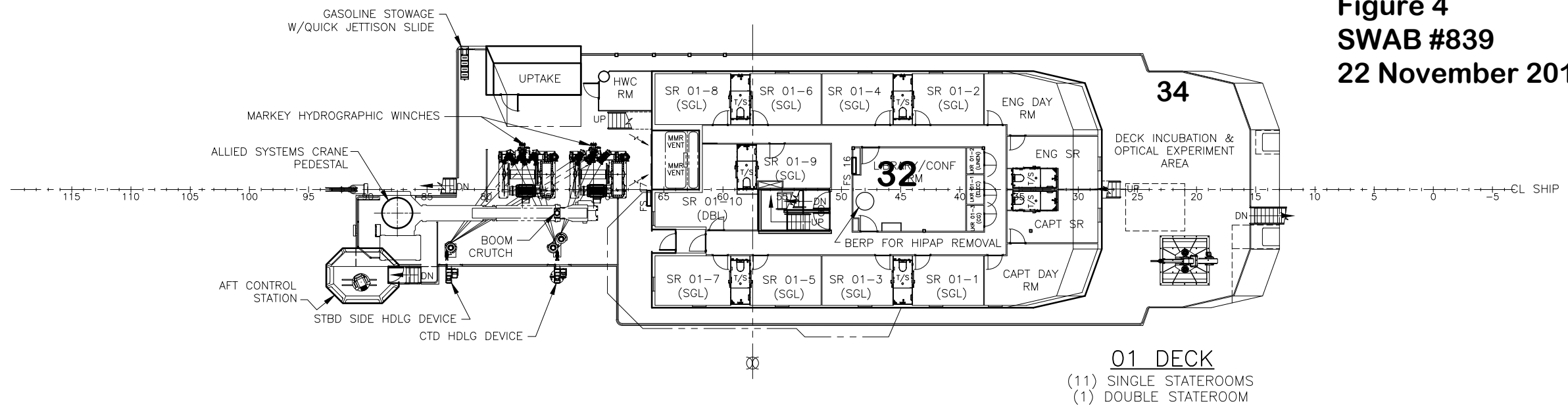
MAIN DECK
(1) DOUBLE STATEROOM

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 PLOT TIME: 11:29:35 am
 PLOT DR: 65111_C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
 FILE NAME: DCI 027-04-R80101-REV-D.DWG

HALF SIZE
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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
SWAB #839
22 November 2016



PLOT DATE: Thursday, November 14, 2013
 PLOT TIME: 11:29:38 am
 PLOT DR: 65111
 FILE NAME: C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
 FILE NAME: DCI 027-04-R80101-REV-D.DWG

HALF SIZE
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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: 5 OF 7

CalCOFI Van

