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24 February 2012

SWAB REPORT # 616

SWAB DATE: 17 February 2012

R/V New Horizon and CalCOFI Van

James Happell

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Distribution:
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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 # 616

LOCATION: Point Loma, CA
VESSEL: *R/V New Horizon* & CalCOFI van

DATE: 17 February 2012
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	0	±	0
	Main Lab - See Figure 1						
3	Deck inside forward entrance	46	±	66	0	±	0
4	Inside Kenmore freezer	1	±	0	0	±	0
5	Inside Kenmore refrigerator	0	±	0	0	±	0
6	Port sink area	0	±	0	0	±	0
7	Bench top across sink	0	±	0	0	±	0
8	Port bench top aft of sink	35	±	117	0	±	0
9	Forward bench top	0	±	0	0	±	0
10	Aft port bench top	0	±	0	0	±	0
11	Deck in front of Chest freezer	0	±	0	0	±	0
12	Deck at entrance to wetlab	7	±	0	0	±	0
13	Port bench top below aft port hole	0	±	0	0	±	0
14	Deck in front of aft port bench top	14	±	275	0	±	0
	Ocean Lab - See Figure 1						
15	Aft sink area	19	±	68	0	±	0
16	Inside fume hood	4	±	0	0	±	0
17	Port forward sink area	11	±	69	0	±	0
18	Bench top aft of port forward sink	16	±	133	0	±	0
19	Benchtop starboard of aft sink	0	±	0	0	±	0
20	Bench top middle of lab	27	±	71	0	±	0
21	Aft port sink next to fume hood	13	±	39	4	±	31
22	Deck in front of fume hood	7	±	56	0	±	0
	Wet Lab - See Figure 1						
23	Sink area	0	±	0	0	±	0
24	Forward port bench top	46	±	58	0	±	0
25	Foward starboard bench top	18	±	79	0	±	0
26	Bench port starboard of sink	0	±	0	0	±	0
27	Deck inside mess hall	16	±	87	0	±	0
28	Whirlpool freezer bench top	15	±	32	0	±	0
29	Whirlpool freezer deck at entrance	49	±	76	0	±	0

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Miscellaneous Areas - See Figure 1						
30	Mess deck outside lounge entrance	14	±	101	0	±	0
31	Mess deck outside laundry entrance	0	±	0	0	±	0
	01 Deck - See Figure 1						
32	Fwd bench top	47	±	72	0	±	0
33	Deck under sink	23	±	92	0	±	0
34	Deck inside fwd entrance	0	±	0	0	±	0
35	Intermediate bucket blank	0	±	0	0	±	0
	CalCOFI Van - See Figure 2						
36	Bench top across sink	6	±	60	0	±	0
37	Bench top right of sink	21	±	76	0	±	0
38	Drawer inside fridge	3	±	4	*76	±	39
39	Bench top right of fridge	30	±	66	0	±	0
40	Sink area	23	±	118	0	±	0
41	Deck at entrance	10	±	168	0	±	0
42	Final bucket blank	48	±	55	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 spills. Samples taken in the CalCOFI Van were also free from radioisotope contamination, except sample taken inside the refrigerator. This sample had very minor ^{14}C contamination, no action required at this time.

Figure 1
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R/V NEW HORIZON

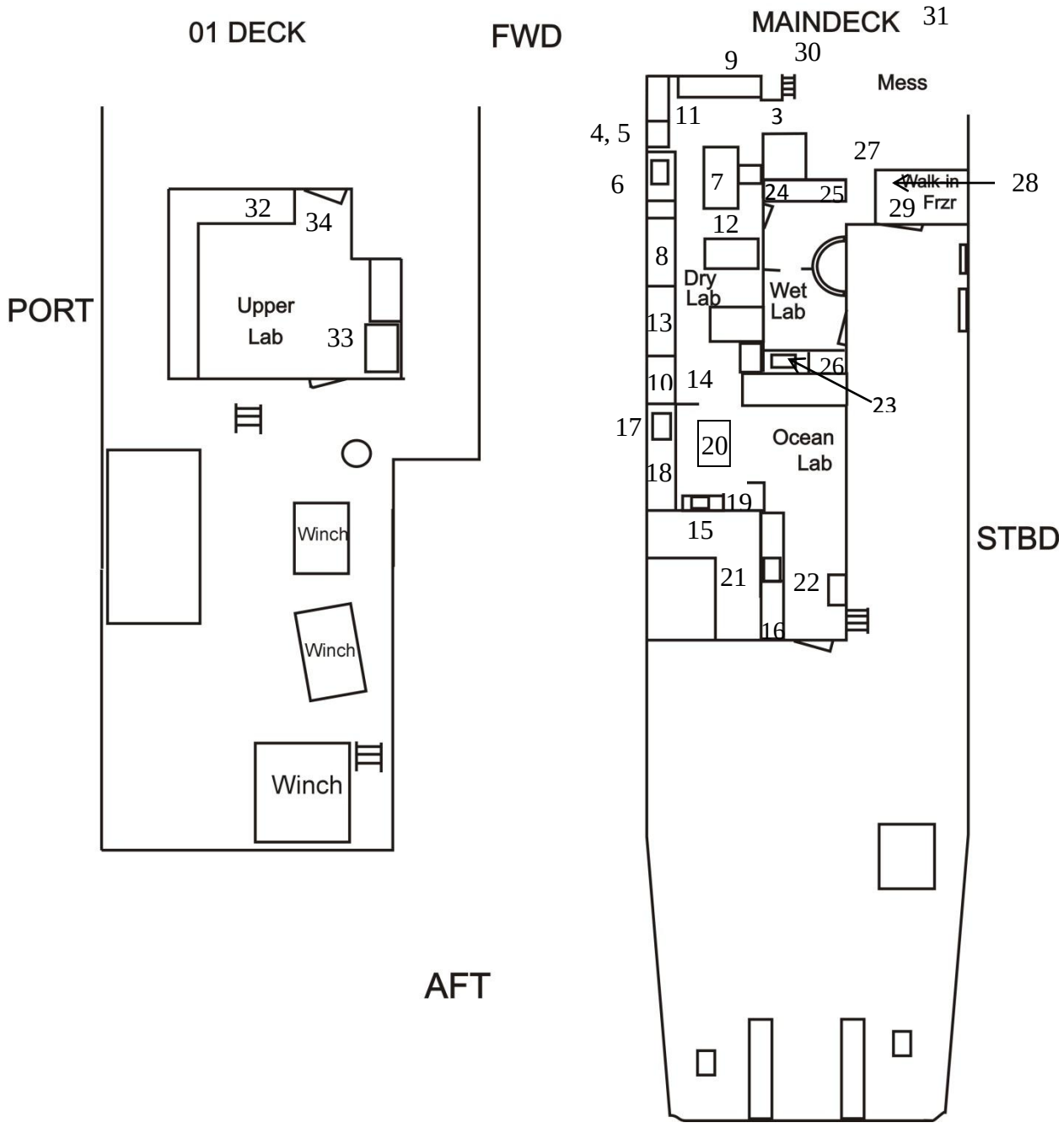

Figure 2
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CalCOFI Van