

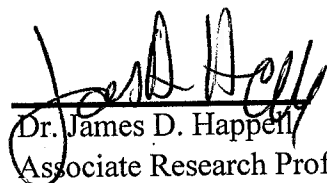
Tritium Laboratory  
12 March 2010



SWAB REPORT # 541

SWAB DATE: 25 February 2010

Oregon State Radioisotope Van - Polar Programs



Dr. James D. Happell  
Associate Research Professor

Distribution:  
SWAB Committee  
Peter Zerr  
David Forcucci  
Jeffrey Wenciker

Rosenstiel School of Marine and Atmospheric Science  
Tritium Laboratory  
4600 Rickenbacker Causeway • Miami, Florida 33149-1098  
Phone: 305-421-4100 • Fax: 305-421-4112  
E-mail: [tritium@rsmas.miami.edu](mailto:tritium@rsmas.miami.edu)  
[www.rsmas.miami.edu/groups/tritium/](http://www.rsmas.miami.edu/groups/tritium/)

COMMENTS TO SWAB REPORTS

30 December 2008

Technical data below applies unless otherwise indicated.

Typical instrument background for tritium and C14: 7 and 15 cpm, respectively.

All data are means of at least three runs and are expressed in dpm/m<sup>2</sup> extracted; machine and wash solution blanks have been subtracted.

Typical error: 10% or 50 dpm/m<sup>2</sup>, whichever is larger, for both tritium and C14.

Criteria for SWAB Results

Category	Tritium (dpm/m <sup>2</sup> )	C14 (dpm/m <sup>2</sup> )	Recommendations
A	< 500	< 50	No action
B *	500-10,000	50-10,000	Needs cleaning before <u>natural tracer</u> work. No health hazard. Does not apply to Radiation Vans.
C **	10,000-100,000	10,000-50,000	Must be cleaned before any use. Includes Radiation Vans
D ***	>100,000	>50,000	May be a health hazard. Notify local Radiation Safety Official

Note: C14 and S35 have peak energies of 156 and 167 KeV, respectively; thus S35 will be registered as C14 by our counting techniques.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

Tritium: Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml or 1/4 cup COUNT-OFF to 1 gallon of water), using sponges to distribute solution and reabsorb it.

C14: Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing <sup>14</sup>CO<sub>2</sub>). Follow up with wash as if for tritium.

Disposal of Cleaning Materials (gloves, sponges, etc.)

Categories A and B: Dispose as ordinary garbage.  
C and D: Dispose in radiation waste system.

Note: In case Category C or D is encountered, we try to notify the institution promptly by telephone.

REPORT FOR SWAB # 541

LOCATION: Seattle, WA  
 TECHNICIAN: D. Higgins  
 VESSEL/LAB: Radioisotope Van

DATE: 25 February 2010  
 STATUS: See Comments

SAMPLE #	SAMPLE IDENTIFICATION	NET ACTIVITY EXTRACTED	
		<sup>3</sup> H dpm/m <sup>2</sup>	<sup>14</sup> C dpm/m <sup>2</sup>
1	1st Machine blank	0	0
2	Initial bucket blank	0	5
3	Deck, center of van	1104 *	413 *
4	Inside refrigerator	545 *	251 *
5	Benchtop, left of sink	142	240 *
6	Fume hood, inside areas	0	860 *

Comments

This van was swabbed December 2009, SWAB #535. At that time contamination was detected at levels that required cleaning. The samples analyzed in this Courtesy Swab were taken after van cleaning. Results still show minor contamination, but at this low level no further action is necessary for a radioisotope van.

It should be noted that both 35S and 14C had been used before SWAB #535. Samples from SWAB #535 were rerun after 90 days to determine which isotope was responsible for the observed 14C contamination. The 90 days results show that all observed van contamination does appear to be 35S rather than 14 C. Therefore contamination in this report is likely to be 35S.

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