RICHEMONT NORTH AMERICA

Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Materials
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

August 6, 2009
License # 31-23806-01E

To whom it may concern,

We are writing to acknowledge between both parties that license #31-23806-01E is terminated immediately. Last year on October 28th, 2008 a request through a letter was sent for a license Amendment to the Nuclear Regulatory Commission. As far as Richemont North America was concerned the license was cancelled and considered terminated at that point in time. The facility at 111 Eighth Avenue Suite 500 New York, NY 10011, has not been used for operation or leased by our company since October 28th, 2008. Since Richemont has not conducted operations in the previously licensed facility, no report of Tritium movement activity will be submitted for 2009. Along with this letter please find enclosed a decontamination report provided by Co-Physics Corporation, as well as the letter which was sent to the NRC back in October. We appreciate your time in looking over this information and providing us with a letter of termination, at your earliest convenience. If you have any questions pertaining to this request, I can be contacted via mobile at (203)257-5811 or through manny.guivas@richemont.com.

Sincerely,

Jesus M. Guivas
Radiation Safety Officer

Richemont North America
645 5th Avenue E-wing 5th Flr. New York, NY 10011
Phone 203-257-5811

FSME03

CoPhysics CORPORATION

FINAL STATUS SURVEY REPORT

RICHEMONT NORTH AMERICA
111 8TH AVENUE, NEW YORK, NY

OCTOBER 2008

Prepared by:

CoPhysics Corporation
1242 Route 208
Monroe, NY 10950

Survey Manager: Theodore E Rahon Date: 10/14/08

Theodore E. Rahon, Ph.D.
Certified Health Physicist

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1 Introduction

1.1 Purpose

Richemont North America wishes to terminate its New York State radioactive materials license, #C2997, and has removed all licensed radioactive materials from its facility. The objective of this Final Status Survey (FSS), performed in October, 2008, is to demonstrate that no levels of radioactivity exist at the facility in excess of specified limits.

1.2 Planning

Richemont engaged CoPhysics Corporation as a contractor to perform a final status survey of the facility. No specific decommissioning plan was prepared for this project due to its small size. The contractor's generic survey procedures were used in accordance with guidance found in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). MARSSIM provides standardized and consistent approaches for planning, conducting, evaluating, and documenting environmental radiological surveys, with a specific focus on the final status surveys that are carried out to demonstrate compliance with cleanup regulations.

1.3 Background

Richemont rented space on the 5th floor of 111 8th Ave. in Manhattan. The building is a large commercial structure which has office and light assembly space. It once served as the original Port Authority Transit Building. From the 5th floor space, Richemont distributed watches containing tritium (H-3) to the public as exempt products since the early 1980's. Malfunctioning watches returned from customers were also repaired at the facility, using parts containing tritium. The facility comprised approximately 18,000 square feet, about 1/3 of which was used for watch repair.

The tritium operations were conducted under a radiation safety program which included monthly wipe tests. A review of the results of the monthly wipes showed the vast majority of results were well within 1000 dpm/100 cm^2 with an occasional wipe reaching 10,000 dpm/100 cm^2.

2 Remedial Operations Summary

Tritium-containing parts: Before the final survey, Richemont had packaged tritium-containing watch parts for shipment back to their point of manufacture in Switzerland.

Elevated Residual Surface Activity: As a result of field sampling, CoPhysics found 5 wipes out of 287 collected that had tritium levels exceeding the guideline release level.

These spots were cleaned with detergent and then were re-sampled. The subsequent results were acceptable.

3 Final Status Survey

3.1 Identity of Contaminants

The main radionuclide of concern is tritium. Richemont was licensed for possession of up to 1 Curie of H-3.

Table 1: Radionuclide of Concern (ROC)

Radionuclide	Name	Half Life	Principal Modes of Decay
H-3	Tritium	12.4 yr	β (0.018 MeV max.)

3.2 Data Quality Objectives

3.2.1 Step 1: State the Problem

Residual radioactivity may reside on surfaces used for handling and storage of watch parts. The objective of the FSS is to obtain data of sufficient quality and quantity to support unrestricted release of the facility from license controls by the NYS Department of Health

3.2.2 Step 2: Identify the Decision

Principal Study Question

Do the radionuclides of concern (ROC) concentrations at the facility exceed applicable levels for unrestricted release?

Decision Statements

If ROC concentrations in the survey units do not exceed the derived concentration guideline limit ($DCGL_w$) and the specific contamination criteria of the regulatory authority, then the survey units will satisfy the release criterion. These criteria are described later in this FSS Report. The decision statements follow:

a. Determine whether survey unit (SU) ROC concentrations exceed background concentrations by more than the applicable release criteria.

b. If survey unit ROC concentrations exceed background by more than the applicable release criteria, then affected survey units must be remediated to levels satisfying the release criteria.

3.2.3 Step 3: Identify Inputs to the Decision

This section lists the data needed to resolve the applicable decision statements, including the means of obtaining the required data.

The main data inputs are:

1. Information regarding the locations of radionuclide use provided by the license; and
2. Results of measurements of residual radioactivity in the survey units by means of:
   - Direct surface radioactivity measurements for beta radiation
   - Removable activity concentration measurements, analyzed for beta activity

3.2.4 Step 4: Define the Study Boundaries

The key area of interest is the concentrations of ROCs on building surfaces and on components (e.g., benches, shelves, etc.). The study is limited to impacted areas located inside the space, namely the radioluminous parts storage areas and the repair shops with ancillary rooms.

3.2.5 Step 5: State the Decision Rules

Surface Radioactivity Scan Surveys
If areas of elevated radioactivity are identified during removable contamination surveys (smears), identified areas will be decontaminated as appropriate and re-surveyed.

Residual Radioactivity
If residual radioactivity is found in an isolated area of elevated activity, in addition to residual radioactivity distributed relatively uniformly across the survey unit, the unity rule, also called the Sum of the Ratios (SOR), will be used to ensure that the total dose is within the decommissioning guidance (NRC 2002).

3.2.6 Step 6: Define Acceptable Decision Errors

NRC guidance provides a discussion regarding decision errors (NRC 2000). This discussion includes the concept that acceptable error rates, which balance the need to make appropriate decisions with the financial costs of achieving high degrees of certainty.

Errors can be made when making site remediation decisions. The use of statistical methods allows for controlling the probability of making decision errors. In setting error

rates, it is important to balance the consequences of making a decision error against the cost of achieving greater certainty.

Acceptability decisions are often made based on acceptance criteria. If the mean and median concentrations of a contaminant are less than the associated acceptance criteria, for example, the results can usually be accepted. In cases where data results are not so clear, statistically based decisions are necessary. Statistical acceptability decisions, however, are always subject to error. Two possible error types are associated with such decisions.

The first type of decision error, called a Type I error, occurs when the null hypothesis is rejected when it is actually true. The probability of a Type I error is usually denoted by α. Considered in light of the null hypothesis used for this investigation, this error could result in higher potential doses to future site occupants than prescribed by the dose-based criterion. The maximum Type I error rate is 0.05.

The second type of decision error, called a Type II error, occurs when the null hypothesis is not rejected when it is actually false. The probability of a Type II error is usually denoted by β. The power of a statistical test is defined as the probability of rejecting the null hypothesis when it is false. It is numerically equal to $1-\beta$ where β is the Type II error rate. Consequences of Type II errors include unnecessary remediation expense and project delays.

For the purposes of this Final Status Survey, the acceptable error rate for both Type I and Type II errors is five percent (i.e., $\alpha = \beta = 0.05$).

3.3 Survey Design and Methodology

The survey design follows the guidance of the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM) (NRC 2000). A summary of this design is provided in the following subsections.

3.3.1 Determine Impacted or Non-Impacted

Based on licensee knowledge, only the repair areas and the parts storage closet were impacted. All outdoor areas, offices and bulk warehouse areas were considered to be non-impacted. These designations were subject to change if high tritium levels had been found in the impacted areas or evidence of tracking of contamination had been found. However, no such circumstances were found during the survey.

3.3.2 Survey Unit Breakdown

Table 2 lists descriptions of survey units.

Table 2: Survey Units

Survey Area	Class	Description
1. Administration, Material Room, Vault, & Rad. Store Closet	1	Floor / walls of former repair bench area & parts storage
2. Main Workshop	1	Floor / walls of former repair bench area
3. Rear Workshop & QC Room	1	Floor / walls of former repair bench area
4. Misc. Areas - Rear Shipping, Stock Room, Front Entry, Lab Areas	3 or non-impacted	Misc. benches, floors, vac.pump, hoods, sinks

3.3.3 Background Area

Because no appreciable tritium exists in the background, no background reference area was specified for this survey.

3.3.4 Smear Sample Collection and Analysis

Selected surfaces were sampled using wipe tests to assess the presence of removable contamination. Wipes were taken at fixed-points on a grid (systematic samples) and at other locations deemed necessary based on professional judgment (biased).

3.3.5 Number of Fixed Survey Points and Grid Point Determination

Appendix C describes the results of MARSSIM-based calculations to determine the number of survey points. For this survey, the minimum number of points per survey unit is 20. However, to provide more in-depth detail and greater coverage of removable contamination assessment, the actual number of survey points was greatly increased per the professional judgment of the survey manager.

The location of each measurement or sample was specified by a square measurement grid which was overlaid onto the floor plan. The maximum spacing, L, of the measurement grid was determined by the procedure shown in Appendix C and was calculated to be 10

feet. The intersections of the measurement grid (i.e., sample locations) were situated on the survey drawings using a random start point, its X and Y coordinates obtained from a random number generator. The survey diagrams are shown in Appendix A.

3.4 Regulatory Requirements – Release Criteria

The survey areas were tested to comply with the 25 mrem/yr prospective dose limits set forth in NRC decommissioning guidance and also the radioactive surface contamination limits in New York State Code Rule 38 Table 5.

Release guidelines (DCGL's) for building surfaces and fixtures for non-controlled use were conservatively chosen as shown below:

Table 3 - Release Guideline (DCGL)

1000 dpm/100 sq.cm - Removable tritium contamination

3.5 Instrumentation

Instrumentation used is shown below:

Table 4: Specific Instrumentation used in the Final Status Survey

Manufacturer	Meter Model	Meter Serial No.	Detector or Meter Type
Wallac*	1415	4150043	Alpha/Beta Liquid Scintillation Counter

* located at the CoPhysics Corp. laboratory in Florida, NY

3.6 Survey Results

The results of fixed point and biased wipe tests are shown in Appendix B. The assessment was successful to the extent that there were no final measurement results in any survey unit above the release criteria. No MARSSIM statistical tests were necessary to prove that the total activity in each survey area was also within the DCGL.

Table 5: Measurement Results Summary

Survey Unit	Removable Surface Activity				
				dpm/100 cm^2	
	# Systematic Points	# Biased Points	# Points > DCGL	Average	Max.
1	63	28	0	31	452
2	52	9	0	111	864
3	78	15	0	80	814
4	0	42	0	32	422

* DCGL (Guideline): 1000 dpm/100 cm^2

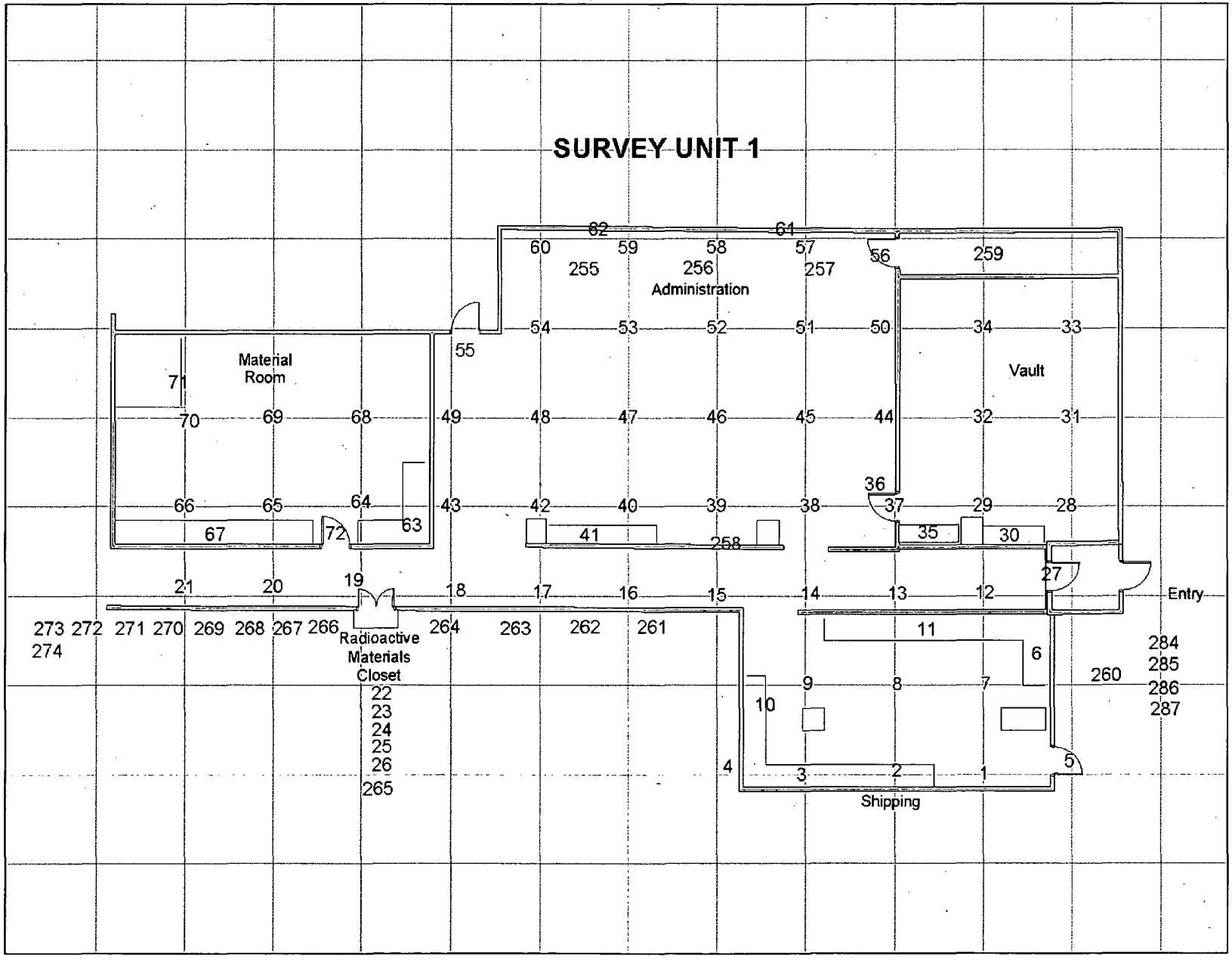
4 Conclusions

A Final Status Survey was conducted at the Richemont North America facility at 111 8th Avenue, New York City, NY per the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The licensee has ended the use of radioactive materials contained in replacement watch parts and has scheduled shipment of all tritium-containing parts to the manufacturing facility in Switzerland.

Three survey units comprising the watch repair areas and one additional survey unit comprised of ancillary rooms were assessed via wipe testing for removable contamination. All readings in the survey units were below the criteria for removable contamination as listed in NYS Code Rule 38.

Based on the findings of this Final Status Survey, residual radioactivity in the building is far less than the New York State release guidelines and would not cause a dose greater than 25 millirem per year to present and future occupants. The survey manager therefore recommends that the site be cleared for unrestricted use.

Appendix A – Survey Area Diagrams


SURVEY UNIT 1
Material Room
Administration
Vault
Radioactive Materials Closet
Shipping
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255
256
257
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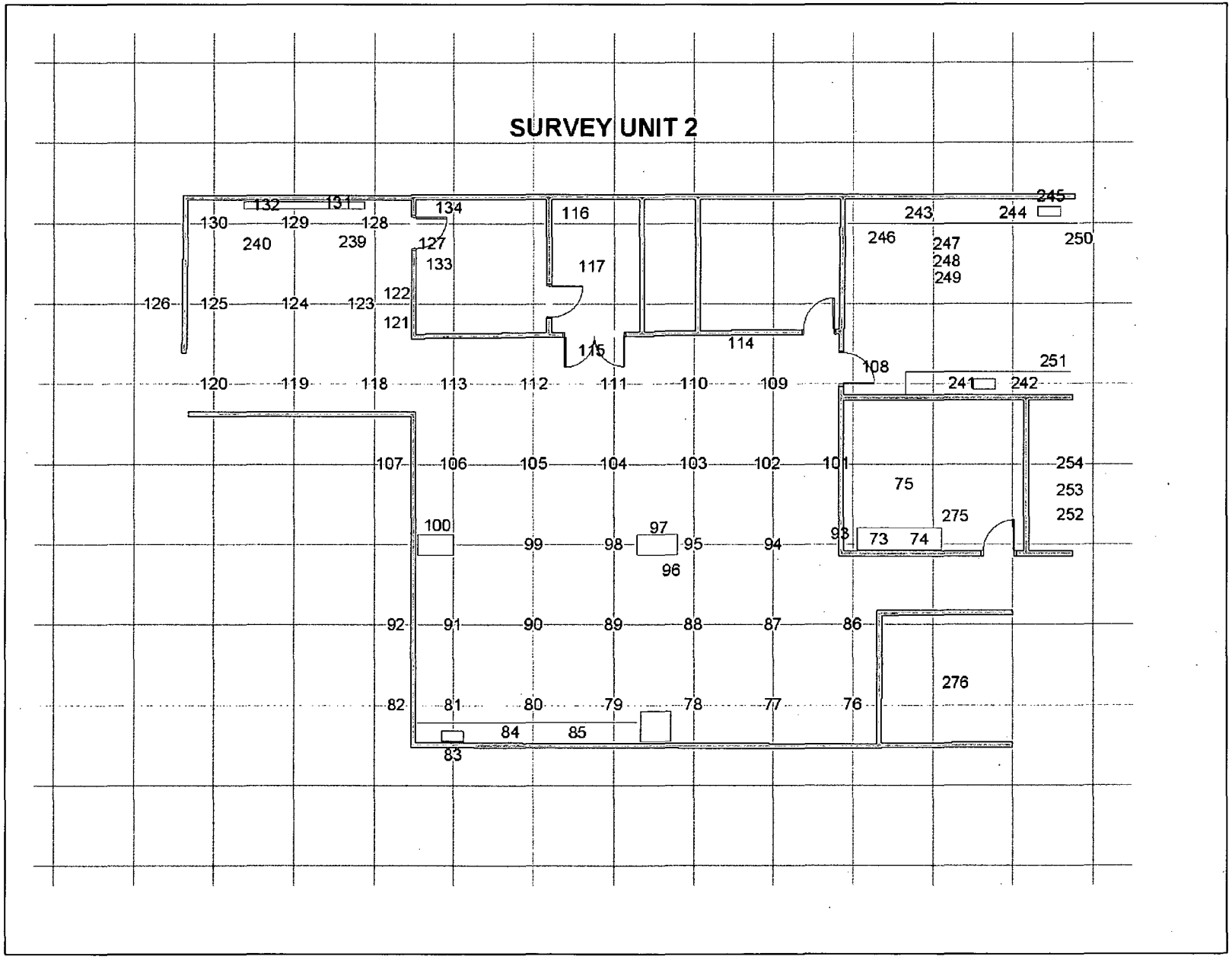
SURVEY UNIT 2
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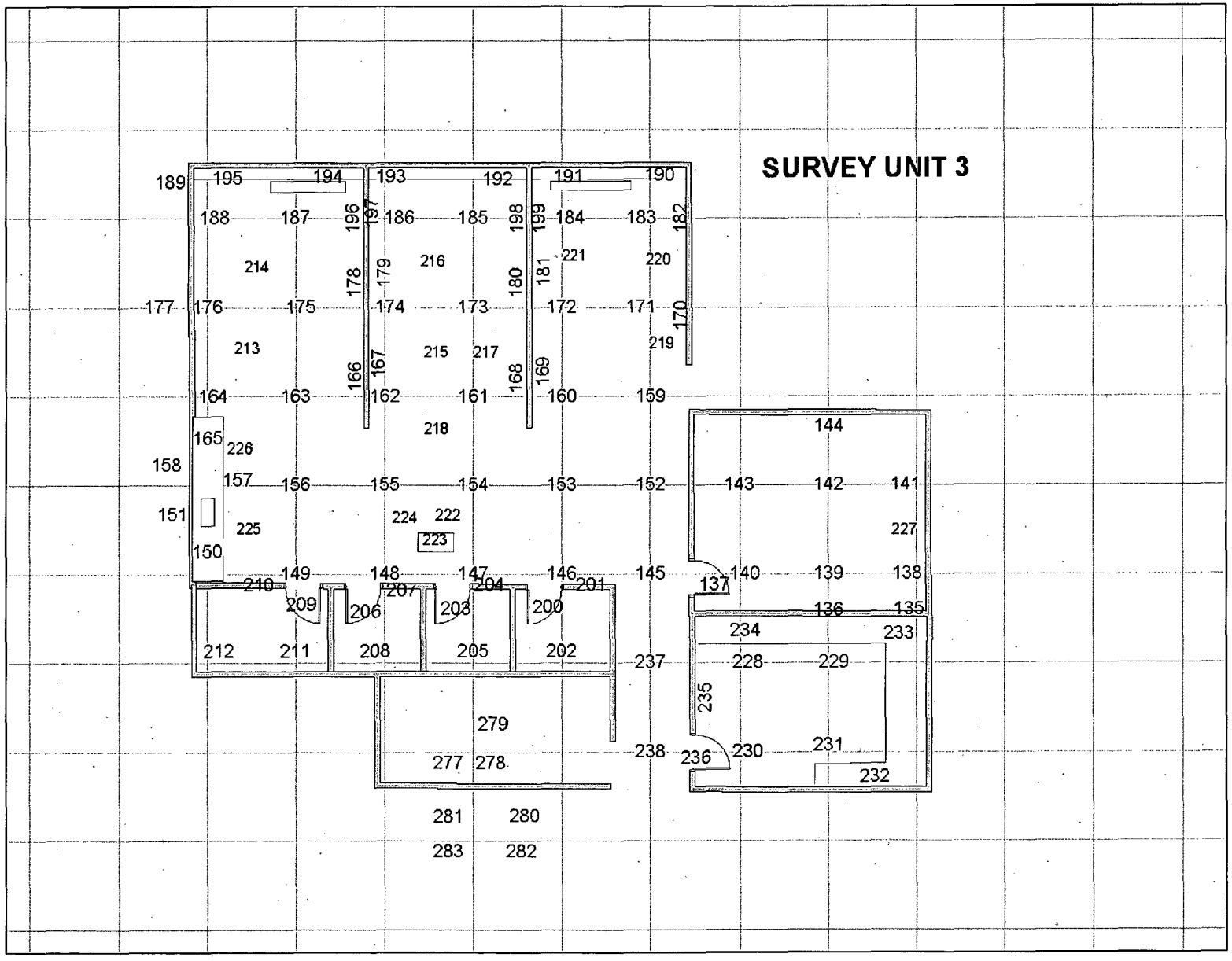
SURVEY UNIT 3
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Appendix B – Surface Activity Survey Results

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
1	S	floor	1	56 ± 20
2	S	floor	1	-1 ± 2
3	S	counter top	1	24 ± 12
4	S	shelves	1	5 ± 6
5	S	door	1	-1 ± 2
6	S	counter top	1	5 ± 5
7	S	floor	1	-1 ± 2
8	S	floor	1	26 ± 13
9	S	floor	1	-1 ± 2
10	S	counter top	1	-1 ± 2
11	S	counter top	1	28 ± 15
12	S	floor	1	-1 ± 2
13	S	floor	1	74 ± 26
14	S	floor	1	19 ± 11
15	S	floor	1	6 ± 6
16	S	floor	1	25 ± 13
17	S	floor	1	24 ± 11
18	S	floor	1	38 ± 15
19	S	floor	1	23 ± 12
20	S	floor	1	21 ± 11
21	S	floor	1	4 ± 5
22	B	door	1	6 ± 6
23	B	shelves	1	4 ± 5
24-rec	B	shelves	1	66 ± 21
25-rec	B	floor	1	9 ± 7
26	B	misc old parts	1	452 ± 72
27	B	door	1	1 ± 3
28	S	floor	1	56 ± 22
29	S	floor	1	5 ± 6
30	S	counter top	1	-1 ± 2
31	S	floor	1	-1 ± 2
32	S	floor	1	7 ± 6
33	S	floor	1	8 ± 7
34	S	floor	1	121 ± 36
35	S	shelves	1	121 ± 31
36	B	door	1	6 ± 6
37	B	floor	1	14 ± 9
38	S	floor	1	20 ± 12
39	S	floor	1	1 ± 3
40	S	floor	1	-1 ± 2
41	S	counter top	1	5 ± 6
42-rec	S	floor	1	3 ± 4
43	S	floor	1	6 ± 6
44	S	floor	1	10 ± 7
45	S	floor	1	43 ± 18
46	S	floor	1	11 ± 8
47	S	floor	1	-1 ± 2
48	S	floor	1	36 ± 15
49	S	wall	1	-1 ± 2
50	S	floor	1	21 ± 12

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
51	S	floor	1	-1 ± 2
52	S	floor	1	128 ± 35
53	S	floor	1	6 ± 6
54	S	floor	1	-1 ± 2
55	S	wall	1	-1 ± 2
56	S	floor	1	18 ± 10
57	S	floor	1	-1 ± 2
58	S	floor	1	17 ± 13
59	S	floor	1	6 ± 6
60	S	floor	1	-1 ± 2
61	S	window sill, radiator	1	-1 ± 2
62	S	window sill, radiator	1	24 ± 14
63	S	counter top	1	228 ± 57
64	S	floor	1	61 ± 21
65	S	floor	1	42 ± 18
66	S	floor	1	3 ± 5
67	S	counter top	1	10 ± 9
68	S	floor	1	181 ± 52
69	S	floor	1	122 ± 36
70	S	floor	1	150 ± 38
71	S	shelves	1	27 ± 13
72	B	door	1	35 ± 15
255	B	ceiling ledge	1	-1 ± 2
256	B	ceiling ledge	1	-1 ± 2
257	B	ceiling ledge	1	21 ± 12
258	B	shelves	1	90 ± 27
259	B	floor - utility room	1	15 ± 10
261	B	interior of closet 1	1	4 ± 5
262	B	interior of closet 2	1	-1 ± 2
263	B	interior of closet 3	1	39 ± 16
264	B	interior of closet 4	1	113 ± 36
265-rec	B	interior of closet 5	1	9 ± 7
266-rec	B	interior of closet 6	1	25 ± 11
267	B	interior of closet 7	1	8 ± 7
268	B	interior of closet 8	1	30 ± 14
269	B	interior of closet 9	1	4 ± 5
270	B	interior of closet 10	1	-1 ± 2
271	B	interior of closet 11	1	0 ± 3
272	B	interior of closet 12	1	-1 ± 2
273	B	interior of closet 13	1	10 ± 7
274	B	interior of closet 14	1	-1 ± 2

Survey Unit 1 Summary		
	Minimum Detectable Activity:	16
	Average	31 ± 62
	Max	452
	N	91 samples

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
76	S	floor	2	270 ± 65
77	S	floor	2	431 ± 94
78-rec	S	floor	2	243 ± 59
79	S	floor	2	5 ± 5
80	S	floor	2	2 ± 4
81	S	floor	2	8 ± 6
82	S	wall	2	139 ± 34
83	S	sink	2	28 ± 12
84	S	counter top	2	323 ± 78
85	S	counter top	2	329 ± 71
86	S	floor	2	-1 ± 2
87-rec	S	floor	2	3 ± 4
88	S	floor	2	282 ± 58
89	S	floor	2	21 ± 11
90	S	floor	2	275 ± 60
91	S	floor	2	8 ± 7
92	S	wall	2	4 ± 4
93	S	wall	2	3 ± 4
94	S	floor	2	-1 ± 2
95	S	floor	2	2 ± 4
96	S	counter top	2	-1 ± 2
97	S	wall	2	638 ± 115
98	S	floor	2	126 ± 36
99	S	floor	2	6 ± 6
100	S	wall	2	4 ± 5
101	S	shelves	2	9 ± 7
102	S	floor	2	170 ± 46
103	S	floor	2	58 ± 23
104-rec	S	floor	2	28 ± 12
105-rec	S	floor	2	11 ± 7
106	S	floor	2	7 ± 7
107	S	wall	2	2 ± 4
108	S	door	2	68 ± 24
109	S	floor	2	5 ± 6
110	S	floor	2	3 ± 4
111	S	floor	2	108 ± 35
112	S	floor	2	28 ± 15
113	S	floor	2	160 ± 43
114	B	wall	2	90 ± 29
115	B	door to tool room	2	563 ± 124
116	B	hood - tool room	2	10 ± 8
117	B	floor - tool room	2	190 ± 49
118	S	floor	2	9 ± 7
119	S	floor	2	163 ± 42
120	S	floor	2	391 ± 82
121	S	wall	2	55 ± 18
122	B	duct	2	10 ± 8
123	S	floor	2	74 ± 27
124	S	floor	2	105 ± 31
125	S	floor	2	-1 ± 2

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
126	S	wall	2	9 ± 7
127	S	door	2	-1 ± 2
128	S	floor	2	109 ± 37
129	S	floor	2	29 ± 13
130	S	floor	2	-1 ± 2
131	S	window sill, radiator	2	169 ± 42
132	S	window sill, radiator	2	4 ± 5
133	B	floor - machine room	2	-1 ± 2
134	B	vac.pump exhaust	2	-1 ± 3
239	B	ceiling ledge	2	130 ± 37
240	B	ceiling ledge	2	864 ± 148

Survey Unit 2 Summary		
Minimum Detectable Activity:	16	
Average	111 ± 174	
Max	864	
N	61	samples

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
135	S	wall	3	16 ± 8
136	S	wall	3	15 ± 9
137	S	door	3	4 ± 5
138	S	floor	3	814 ± 149
139	S	floor	3	2 ± 4
140	S	floor	3	6 ± 6
141	S	floor	3	8 ± 7
142	S	floor	3	7 ± 6
143	S	floor	3	10 ± 8
144	S	wall	3	-1 ± 2
145	S	floor	3	7 ± 6
146	S	floor	3	18 ± 11
147	S	floor	3	143 ± 43
148	S	floor	3	72 ± 25
149	S	floor	3	209 ± 54
150	S	counter top	3	80 ± 28
151	S	sink	3	-1 ± 2
152	S	floor	3	-1 ± 2
153	S	floor	3	87 ± 25
154	S	floor	3	16 ± 9
155	S	floor	3	128 ± 32
156	S	floor	3	3 ± 4
157	S	floor	3	3 ± 4
158	S	wall	3	96 ± 28
159	S	floor	3	-1 ± 2
160	S	floor	3	3 ± 4
161	S	floor	3	221 ± 50
162	S	floor	3	80 ± 23
163	S	floor	3	226 ± 49
164-rec	S	floor	3	321 ± 65
165	S	counter top	3	33 ± 14
166	S	wall	3	100 ± 28
167	S	wall	3	41 ± 15
168	S	wall	3	130 ± 36
169	S	wall	3	69 ± 22
170	S	wall	3	2 ± 4
171	S	floor	3	9 ± 7
172	S	floor	3	742 ± 121
173	S	floor	3	69 ± 21
174	S	floor	3	61 ± 22
175	S	floor	3	202 ± 49
176	S	floor	3	3 ± 4
177	S	wall	3	40 ± 16
178	S	wall	3	9 ± 7
179	S	wall	3	450 ± 86
180	S	wall	3	-1 ± 2
181	S	wall	3	181 ± 47
182	S	wall	3	-1 ± 2
183	S	floor	3	18 ± 10
184	S	floor	3	713 ± 134
185	S	floor	3	128 ± 37

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
186	S	floor	3	517 ± 104
187	S	floor	3	6 ± 6
188	S	floor	3	17 ± 10
189	S	wall	3	19 ± 10
190	S	wall	3	140 ± 43
191	S	window sill, radiator	3	-1 ± 2
192	S	wall	3	61 ± 21
193	S	wall	3	7 ± 7
194	S	window sill, radiator	3	0 ± 3
195	S	wall	3	-1 ± 2
196	S	wall	3	-1 ± 2
197	S	wall	3	229 ± 62
198	S	wall	3	38 ± 16
199	S	wall	3	67 ± 20
200	S	door	3	-1 ± 2
201	S	wall	3	7 ± 6
202	S	floor	3	-1 ± 2
203	S	door	3	-1 ± 2
204	S	wall	3	-1 ± 2
205	S	floor	3	5 ± 6
206	S	door	3	155 ± 35
207	S	wall	3	21 ± 11
208	S	floor	3	237 ± 51
209	S	door	3	12 ± 8
210	S	wall	3	4 ± 5
211	S	floor	3	4 ± 5
212	S	floor	3	-1 ± 2
213	B	ventilation grill	3	-1 ± 2
214	B	ventilation grill	3	-1 ± 2
215	B	ventilation grill	3	43 ± 16
216	B	ventilation grill	3	-1 ± 2
217	B	ventilation grill	3	44 ± 17
218	B	ventilation grill	3	11 ± 9
219	B	ventilation grill	3	-1 ± 2
220	B	ventilation grill	3	27 ± 14
221	B	ventilation grill	3	-1 ± 2
222	B	floor	3	82 ± 24
223	B	wall -column	3	3 ± 4
224	B	duct	3	-1 ± 2
225	B	ventilation grill	3	3 ± 4
226	B	ventilation grill	3	126 ± 33
227	B	ventilation grill	3	5 ± 6

Survey Unit 3 Summary		
	Minimum Detectable Activity:	16
	Average	80 ± 156
	Max	814
	N	93 samples

Location #	Biased or Syst.	Description	Survey Unit	Tritium (dpm/100 sq cm)
73	B	sink	4 - small lab	20 ± 11
74	B	counter top	4 - small lab	78 ± 35
75	B	floor	4 - small lab	-1 ± 3
228	B	floor	4 - rear shipping	6 ± 5
229	B	floor	4 - rear shipping	3 ± 4
230	B	floor	4 - rear shipping	110 ± 32
231	B	floor	4 - rear shipping	37 ± 15
232	B	counter top	4 - rear shipping	-1 ± 3
233	B	counter top	4 - rear shipping	11 ± 8
234	B	counter top	4 - rear shipping	16 ± 10
235	B	wall	4 - rear shipping	17 ± 9
236	B	door	4 - rear shipping	14 ± 9
237	B	floor	4 - rear shipping	6 ± 6
238	B	floor	4 - rear shipping	5 ± 5
241	B	sink	4 - large lab	422 ± 89
242	B	counter top	4 - large lab	23 ± 12
243	B	counter top	4 - large lab	-1 ± 2
244	B	counter top	4 - large lab	-1 ± 3
245	B	sink	4 - large lab	8 ± 7
246	B	oven	4 - large lab	4 ± 5
247	B	blue cart	4 - large lab	145 ± 46
248	B	short brown cart	4 - large lab	61 ± 22
249	B	tall brown cart	4 - large lab	175 ± 48
250	B	hood	4 - large lab	8 ± 7
251	B	hood	4 - large lab	7 ± 7
252	B	sink	4- small lab	3 ± 4
253	B	floor	4- small lab	71 ± 25
254	B	table	4- small lab	-1 ± 2
260	B	security console	4 - front	6 ± 6
275	B	hood	4- small lab	-1 ± 2
276	B	floor	4-office	4 ± 5
277	B	sink&counter top	4-side room rear	-1 ± 3
278	B	duct	4-side room rear	15 ± 9
279	B	floor	4-side room rear	6 ± 6
280	B	floor	4- stock room	-1 ± 2
281	B	floor	4- stock room	21 ± 13
282	B	floor	4- stock room	-1 ± 2
283	B	floor	4- stock room	-1 ± 2
284	B	floor	4- entry near RR	15 ± 10
285	B	floor	4- main entry	-1 ± 2
286	B	floor	4- cafeteria	25 ± 12
287	B	counter top	4- cafeteria	-1 ± 2

Survey Unit 4 Summary		
	Minimum Detectable Activity:	16
	Average	32 ± 73
	Max	422
	N	42 samples

Notes:
Results are net, with instrument background subtracted
Uncertainty is the 2-sigma counting error, or: 2 x sqrt(Rg/t+Rb/t)/Eff MDA=4.65 x sbkg
"rec" - indicates a location that had been re-cleaned

Appendix C - MARSSIM Area Classification and Sample Frequency Calculations

The following is a summary of MARSSIM statistical sampling and scanning recommendations simplified for use in small to medium scale release surveys:

Area Classification: For purposes of establishing the sampling and measurement frequency and pattern, MARSSIM discusses non-impacted and impacted areas in which there are 3 sub-classifications:

> **Impacted Areas** - have potential radioactive contamination (based on facility operating history) or known radioactive contamination (based on past or preliminary radiological surveillance). These include areas where radioactive materials were used or stored, or potential for unusual occurrences which could have resulted in contamination. Areas adjacent to locations where radioactive materials were used or stored are normally included in this classification because of the potential for inadvertent spread of contamination. These areas are further classified as:

- Class 1 Areas: (areas experiencing prior remedial action, spills, waste storage or disposal, relatively large quantities of loose radioactivity)
- Class 2 Areas: (areas handling low concentrations or small quantities of radioactivity in unsealed forms, upper walls and ceilings in airborne radioactivity areas, perimeters of contamination control areas, etc. where no individual measurement result would be expected to exceed guideline values before remediation)
- Class 3 Areas: (areas in which residual radioactivity is expected but at a small fraction of guideline values such as buffer areas to contaminated areas, lab offices, hallways, loading docks used for radioactive shipments, etc.)

Non-impacted areas - All areas not classified as affected. These areas are not expected to contain residual radioactivity, based on knowledge of site history and/or previous survey information. No measurements are required for non-impacted areas.

Sample Frequencies: The frequencies of surface activity or concentration measurements are derived from MARSSIM based on expected standard deviation of measurement results.

The Wilcoxon Rank Sum (WRS) Test is used in MARSSIM equation 5.1 to calculate the minimum number of samples to be collected from the survey and background units (if the contaminant is present in the background):

$$N = \frac{(Z_{1-\alpha} + Z_{1-\beta})^2}{3(P_r - 0.5)^2} \qquad \text{Eq. 5.1}$$

Where,

N = number of samples required for the background and survey area (N should be optionally increased by 20% as a contingency for non-analyzable samples, etc.). N may be divided between the background and survey areas as N/2 each.

Z = standard normal statistic for α and β (both specified to be 0.05 for a 95% confidence level) = 1.645

P_r = a probability statistic based on the ratio of the shift (Δ) to the standard deviation of the impacted or background area measurements

Δ = the shift, a statistical activity parameter usually set equal to 1/2 of the guideline release limit.

The one-sample Sign Test is used in MARSSIM equation 5.2 to calculate the minimum number of samples to be collected from the survey unit (if the contaminant is **not** present in the background):

$$N = \frac{(Z_{1-\alpha} + Z_{1-\beta})^2}{4(Sign\ P - 0.5)^2} \qquad \text{Eq. 5.2}$$

Where,

N = number of samples required for the survey unit (N should be optionally increased by 20% as a contingency for non-analyzable samples, etc.).

Z = standard normal statistic for α and β (both specified to be 0.05 for a 95% confidence level) = 1.645

Sign P = a probability statistic based on the ratio of the shift (Δ) to the standard deviation of the survey area measurements

Δ = the shift, a statistical activity parameter usually set = 1/2 of the guideline release limit.

Determine the Number of Discrete Sample Locations

Relative Shift

The relative shift describes the relationship of site residual radionuclide concentrations to the DCGL, and is calculated using the following equation, found in Section 5.5.2.2 of MARSSIM (NRC 2000):

$$\Delta/\sigma = \frac{DCGL_w - LBGR}{\sigma}$$

Where:

$DCGL_w$ = the derived concentration guideline level (release limit = 5,000 dpm/100 cm^2)

LBGR = concentration at the lower bound of the gray region. The LBGR effectively becomes the survey's action level. The LBGR is set at 2500 dpm/100 cm^2 for this FSS.

σ = An estimate of the standard deviation of the concentration of residual radioactivity in the survey unit (which includes real spatial variability in the concentration as well as the precision of the measurement system). σ is conservatively estimated at 20 dpm/100 cm2, or 1/50 of the $DCGL_W$.

A relative shift for the FSS is calculated as (1000 – 500) / 20 = 25. The Type I error is set at 0.05 (probability of declaring an area clean when it is contaminated), and the Type II error is set at 0.10 (probability of declaring an area contaminated when it is in fact clean). Based on these acceptable decision errors, the minimum number of measurement locations in the survey unit is determined by comparison to the MARSSIM Table 5.5 - "Values of N for a Given Relative Shift when the Contaminant is Not Present in Background". Using Table 5.5, and the errors of $\alpha = 0.05$ and $\beta = 0.10$, the number of survey points per survey unit is 20. The table values have already been increased by 20% to account for missing or unusable data.

Survey Unit Grid Spacing

Grid spacing and placement of fixed-point measurement locations within each Survey Unit was based on a relative coordinate system. The starting point is randomly selected and the data points are located within the survey unit using a square grid for Class 1 and Class 2 areas. For Class 2 survey units, the systematic locations for floor layouts also included the first 2 meters of each wall and additional biased points on the ceiling. The grid areas are calculated as follows:

$$L = \sqrt{A/n}$$

where:

L = grid spacing; A = survey unit area
n = number of data points (20)

For example: Typical Area of survey unit = A = 2000 ft^2 No. of points: n = 20

$$L = \sqrt{A/n} = (2000/20)^{1/2} = 10 \text{ ft}$$

Scan Coverage: Because scanning for tritium is not technically feasible, some additional coverage of potential contaminated areas was performed by the additiona of numerous biased wipe tests per the judgment of the surveyor.

RICHEMONT NORTH AMERICA

Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Materials
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

October 28, 2008
License # 31-23806-01E

To whom it may concern,

This concerns the subject for an Amendment to discontinue our distribution license. Prior to this letter, we had submitted a request and our time frame expired due to delayed move dates. We would like to resubmit our request in terminating our license. The previous information sent will be under Mail Control No. 022698. The location of the facility is 111 Eighth Avenue Suite 500 New York, NY 10011. The new facility will be located at 645 5th Avenue E-wing 5th Flr. New York, NY 10022. We will continue running the same operation of watch repair at our new location, except we will not be using or storing any type of material containing radiation. Therefore this is the reason for Richemont to have the license terminated. We will provide a letter from the New York State Department of Health describing the termination of our State license. Any questions pertaining to this request can be answered via phone at (203)257-5811 or through manny.guivas@richemont.com.

Sincerely,

Jesus M. Guivas
Radiation Safety Officer