



## **Final Status Survey Report**

for

**AFRL Building 104**

at

**Air Force Research Laboratory  
26 Electronics Parkway  
Rome, NY 13441-4514**

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- Attachment 1 – Material Backgrounds**
- Attachment 2 – Instrument Daily Check Sheets**
- Attachment 3 – Final Status Survey Data Sheets**

**LIST OF ACRONYMS AND ABBREVIATIONS**

AFRL	Air Force Research Laboratory
cm <sup>2</sup>	centimeters squared
cpm	counts per minute
DCGL	Derived Concentration Guideline Level
DoD	Department of Defense
dpm	disintegrations per minute
DQO	Data Quality Objectives
EPA	Environmental Protection Agency
FSS	Final Status Survey
FSSR	Final Status Survey Report
MARSAME	Multi-Agency Radiation Survey and Assessment of Materials and Equipment
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
µR/hr	micro-Roentgen per hour
mrem/hr	millirem per hour
NaI	Sodium Iodide
NRC	Nuclear Regulatory Commission
NUREG	Nuclear Regulation
pCi/g	picocuries per gram
pCi/L	picocuries per liter
Ra-226	Radium-226
Reg Guide	Regulatory Guide
RICS	Royal Institution of Chartered Surveyors
ST	Solutient Technologies, LLC

## 1.0 INTRODUCTION

Solutient Technologies, LLC (ST) performed remediation activities of Ra-226 impacted areas in Building 104 at the Air Force Research Laboratory in Rome, NY and a subsequent Final Status Survey (FSS). The following report discusses the details of the remediation and survey and presents the final survey data.

## 2.0 SUMMARY OF REMEDIATION ACTIVITIES

The following subsections describe the work activities performed in each area.

### 2.1 Room 24 (Supply Closet)

1. The drain piping coming through the wall from room 25 was removed and capped. The subsurface pipe will be assessed after removal of the slab.
2. Portions of the floor along the southern and western sides were removed with the floor scabbler.

### 2.2 Room 25

1. All remaining contaminated floor tiles were removed.
2. The sink was removed and placed in the roll off for disposal.
3. Large sections along the walls were removed.
4. The entire floor was decontaminated using a floor scabbler.

### 2.3 Room 26

1. All remaining contaminated floor tiles were removed.
2. The sink was removed and placed in the roll off for disposal.
3. Large sections along the walls were removed.
4. The entire floor was decontaminated using a floor scabbler and abrasive grinder.

### NOTES:

- Solutient personnel removed concrete around the floor drain to the south and noticed one section of the drain turned 180 degrees to the north. This will require additional investigation after removal of the slab.
- The contamination in the drain lines was significant enough to affect the final status survey of the floor in the adjacent area. Therefore an area of the concrete floor approximately 2 meters by 3 meters around the drain was marked off and should be left after removal of the slab.

### 2.4 Room 30 (Janitors Closet)

1. The north wall opposite Room 26 was removed as part of the Room 26 remediation.

### 2.5 Ventilation System

1. The ventilation blower and all associated duct work was dismantled, wrapped in plastic and placed in the roll off container for disposal.

2. The plywood and brick on the exterior was removed and the brick wall and roof below the wall decontaminated as required.
3. A minimal amount of contaminated roofing material was removed.

## 2.6 Floor Drains, Clean-Outs, and Plumbing

The facility drawings indicated there were three (3) separate lines in building 104 associated with the drains and clean-outs. The drain identified in Room 26 was part of a storm sewer line that ran south and then east through the men's and women's bathroom (#1, #2, and #4). The sink drain in Room 25 which taps into a vertical drain line in the supply closet is part of a sanitary sewer line. Clean-outs #5, #6, #7, and #8 are associated with this line. There was an additional clean out (#3) in the men's bathroom associated with another sanitary sewer line. These lines and clean-outs locations are listed below.

- #1 Room 35A – (Women's Bathroom)
- #2 Room 32 – (Men's Bathroom)
- #3 Room 32 – (Men's Bathroom)
- #4 Room 26
- #5 Room 37 (Mechanical Room)
- #6 Room 22 – (Test Room)
- #7 Room 44 – (Office)
- #8 Room 42 – (Office Doorway)

Additional floor drains, previously covered by carpet or floor tiles were identified during the project and all of the floor drains were plugged with a combination of expanding foam and concrete. Each drain will be addressed after the slab is removed.

## 3.0 FINAL STATUS SURVEY DESIGN

ST designed the survey to follow the guidelines in NUREG-1575, MARSSIM. The site DCGL's were further modified in a memorandum dated January 28, 2013 from AFRL/RIOCV "**MEMORANDUM FOR AFRL/RIOCV, justification for the Derived Concentration Guideline Limit (DCGL) for Radium-226 (Ra-226) Activity Levels for Bldg 104, Former Griffiss AFB, Rome NY**". Solutient agreed to utilize the revised DCGL criteria based on this Memorandum. The criteria followed during the survey are listed below: (See Appendix 1).

RICS Proposal - In order to meet NY state restrictions, and "as low as reasonably achievable (ALARA)" the RICS suggests that ST meet the following release criteria:

- 1) Per MARSAME guidance, 500 dpm/100 cm<sup>2</sup> total (fixed plus removable) for alpha particulate radiation;
- 2) Per MARSAME guidance, 1000 dpm/100 cm<sup>2</sup> removable for beta particulate radiation; and
- 3) Per MARSAME guidance, 5000 dpm/100 cm<sup>2</sup> total (fixed plus removable) for beta-gamma radiation.

The DCGL<sub>EMC</sub> limit discussed in Section 4.6.4 below has been modified from 16,800 dpm/100cm<sup>2</sup> to 15,000 dpm/100cm<sup>2</sup>.

### 3.1 Area Classifications

MARSSIM uses a graded approach to surveying and classifying areas of potential contamination. This includes designating three area classifications according to contamination potential, for the purposes of guiding the degree and nature of survey coverage within impacted or potentially impacted areas. Upon the completion of the characterization surveys, areas were given one of three classifications based on the data collected and assigned a preliminary classification based on the definitions used in MARSSIM as shown below.

- Class 1 areas have a potential for contamination that exceeds the DCGL guidelines. This requires one hundred percent of the area be surveyed and sampled. A Class 1 survey unit must be equal to or less than 100 m<sup>2</sup>.
- Class 2 areas have a reasonable potential for contamination above background, but below the DCGL. This requires thirty percent of the area be surveyed and sampled. A Class 2 survey unit must be equal to or less than 1000 m<sup>2</sup>.
- Class 3 areas are not expected to contain residual activity in excess of background, and as such carry no size limitation. This requires ten percent of the area be surveyed and sampled. A Class 3 area has no size restriction.

Based on the findings from surveys described in Section 2.0 ST followed the definitions of MARSSIM to make the initial classifications. These classifications, shown in Table 3-1 are all within the size requirements for each area classification.

**Table 3-1**  
**Area Survey Classifications**

<b>Area Classifications</b>		
<b>Location</b>	<b>Class</b>	<b>% Survey</b>
Room 25	1	100
Room 26	1	100
Mezzanine	1	100
Room 24	2	30
Room 30	2	30
Hallways connecting rooms 24 to 30	3	10

### 3.2 Change of Classification

During the course of remediation, ST modified the area classifications to be more conservative. This was partly based on the traffic flow of waste materials out of Rooms 25 and 26 and additional contamination found on the floor in Room 24. These changes are shown in Table 3-2 below.

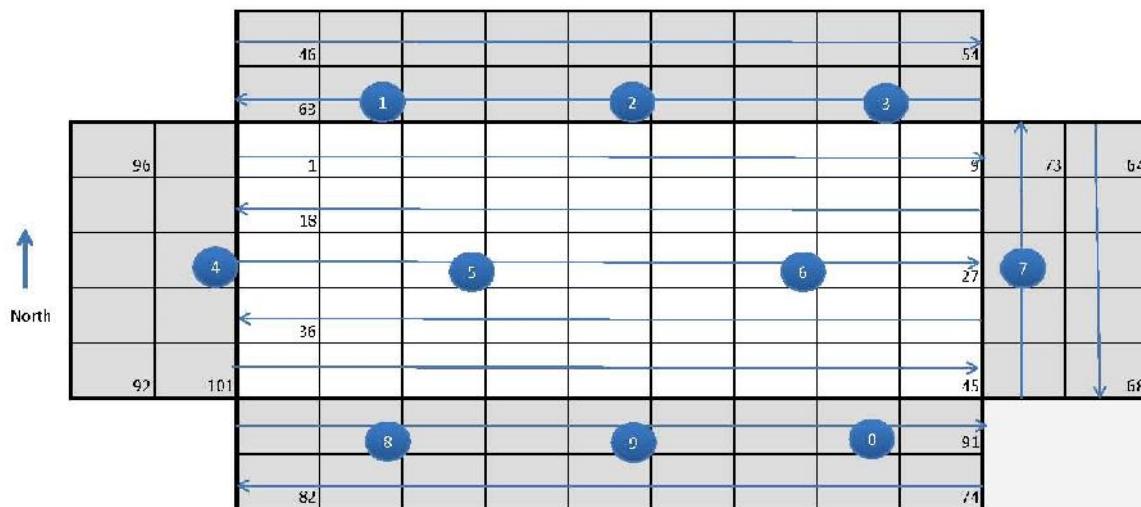
**Table 3-2**  
**Area Survey Classifications**

<b>Area Classifications</b>		
<b>Location</b>	<b>Class</b>	<b>% Survey</b>
Room 24	1	100
Hallways connecting rooms 24 to 30	2	30

### 3.3 Survey Procedure

The scanning, direct measurements, and smears were all performed on the floor area and the lower 2 meters of the walls. The standard scan pattern was to start at the northwest corner of the upper meter grid on the wall and move east and then move west on the lower meter of the wall. This process was repeated around the room on the walls and on the floor.

**Figure 3-1**  
**Room Layout for Survey**



### 3.4 Background Surveys

Part of the data comparison requires a one-to-one comparison of measured survey data with measurements of background. Determining background levels for comparison with the conditions determined in specific survey units entails conducting surveys in one or more reference areas to define the radiological conditions of the site. Solutient collected background measurements on similar materials surveyed during the FSS (See Attachment 1). Table 3-3 below is a summary of the background data.

**Table 3-3**  
**Average Material Background Measurements**

Material Type	Number of Measurements	Gross cpm	
		Alpha	Beta
Block Walls	10	17	344
Sheet Rock Walls	10	15	243
Mastic Floor	10	17	353
Bare Concrete	10	12	336
Mezzanine Walls	10	10	240
Outside Brick	4	6	555
<b>Average</b>	<b>54</b>	<b>13</b>	<b>322</b>

## 4.0 DATA QUALITY OBJECTIVES

The Remediation Team has established acceptable decision errors for this project to enable testing of data relative to guidelines. The Type I (alpha) decision error to be used in data testing is 0.05; this provides a confidence level of 95% that the statistical tests will not incorrectly determine that a surveyed area satisfies criteria when, in fact, it does not satisfy the criteria. The Type II (beta) decision error is also 0.05; this provides a confidence level of 95% that the statistical tests will not incorrectly determine that a surveyed area does not satisfy criteria when, in fact, it does satisfy the criteria.

Data quality indicators for precision, accuracy, representativeness, completeness, and comparability have also been established. These are summarized below:

- *Precision* will be determined by comparison of replicate values from field measurements and sample analysis; the objective will be a relative percent difference of 35% or less for soil samples.
- *Accuracy* is the degree of agreement with the true or known; the objective for this parameter will be +/- 30% at 50% of the criterion value.
- *Representativeness* and comparability do not have numeric values. Performance for these indicators is assured through the selection and proper implementation of systematic sampling and measurement techniques.
- *Completeness* refers to the portion of the data that meets acceptance criteria and is therefore useable for statistical testing. The objective is 90% for this project.

## 5.0 INSTRUMENTATION

The instrumentation used for the Final Status Survey is listed below:

- Ludlum Model 2360 scaler/ratemeter
- Ludlum Model 43-93 alpha/beta scintillation detector
- Protean WPC 9550 low background alpha/beta counter

### 5.1 Specifications and Uses

#### *Ludlum Model 2360*

- This meter is an alpha / beta ratemeter / scaler and data logger and can hold up to 550 data points.

#### *Ludlum Model 43-93*

- This probe is an alpha / beta sensitive scintillation detector with a 100cm<sup>2</sup> active area. The background is typically 3 cpm or less for alpha and 300 cpm or less for beta.

#### *Protean WPC 9550*

- This is a gas proportional low background alpha / beta counting system used to count smears. The typical background is .10 cpm alpha and 0.80 cpm beta.

## 5.2 Quality Control for All Instruments

All instrumentation had a current calibration (within the past 12 months). Daily performance checks were conducted in accordance with individual instrument use procedures (See Attachment 2). The backgrounds were obtained at the start and end of each shift. The source checks were performed at the start of each shift. The calibration certificates are included in Attachment 2.

## 6.0 FINAL STATUS SURVEY IMPLEMENTATION

The following sub-sections describe the activities involved in the measurement and data collection phase of the Final Status Survey. These activities include beta/gamma scans, direct (fixed) measurements, and removable (smear) measurements and analysis.

### 6.1 Sequence of Field Activities

The following sequence of activities outline the general Final Status Survey approach used by Solutient:

1. Determine ambient background levels for the instrumentation and establish action levels to correspond to instrument responses (detectable above these ambient background levels)
2. Selected reference areas for obtaining “Like Materials” background values similar in nature to the areas in Building 104 and not impacted by radiological contamination
3. Perform scan surveys based on the required percentage by classification
4. Establish random-start sampling location patterns and extend the sampling location to determine the 10 sampling locations in each survey unit
5. Collect required data, both fixed and removable at each of the sampling locations

### 6.2 Beta/Gamma Scans

Alpha/beta scans were performed over 100% of surfaces of Class 1 survey units, 30% of the Class 2 survey units and 10% of Class 3 survey units. The surveyor advanced the detector at a rate that ensured the detector saw the area under the probe for 2 seconds. Areas that appeared elevated were rechecked following the scan by keeping the probe over the suspect area similar to a static measurement.

### 6.3 Direct Measurements

Direct measurements were performed at the ten (10) systematic data point locations per survey unit using a Ludlum Model 2360 meter (data-logger) with a Ludlum Model 43-93 gamma scintillation detector.

### 6.4 Removable Measurements (Smears)

Smears were obtained at the exact location as the direct instrument measurements by swiping a 100cm<sup>2</sup> area using the standard “S” swipe. The smears were counted using a protean low-background counter.

## 6.5 Quality Control Measurements

A minimum of 10% replicate measurements, both fixed and removable were performed for field quality control purposes.

## 7.0 FSS PRESENTATION AND EVALUATION OF SURVEY RESULTS

The survey data is shown in detail in Attachment 3 on the Final Status Survey Data Sheets. The removable measurements and the direct measurements are shown in cpm and dpm/100cm<sup>2</sup> for comparison to the approved DCGL. As a conservative measure in calculating the net dpm/100cm<sup>2</sup> for the direct measurements Solutient used the lowest instrument background value which was taken from the average daily instrument checks; 8 cpm alpha and 240 cpm beta.

### 7.1 Summary Tables

The following sections include summary tables of the detailed data for ease of reviewing. In Table 7-1 below, the net removable and fixed contamination levels are well below the DCGL of 500 dpm/100cm<sup>2</sup> fixed plus removable for alpha and 1,000 dpm/100cm<sup>2</sup> removable and 5,000 dpm/100cm<sup>2</sup> fixed for beta. The values are at background levels.

**Table 7-1**  
**Average Removable and Fixed Measurements**

Survey Unit	Net Removable dpm/100cm2)		Net Fixed (dpm/100cm2)	
	Alpha	Beta	Alpha	Beta
Mezzanine	1.5	12	0	243
Room 25	0	4	22	464
North Hallway	0	4	10	289
NE Hallway / Room 30	1.5	2	5	245
Room 24	1.5	12	6	725
Room 26	1.0	4	3	414
<b>Average</b>	1.1	7.5	7.5	397

In Table 7-2 below, the average 1-minute scan values are at background levels.

**Table 7-2**  
**Average 1-Minute Scan Measurements**

Survey Unit	Number of 1-minute scans	Gross cpm	
		Alpha	Beta
Mezzanine	91	6	297
Room 25	70	6	352
North Hallway	50	6	319
NE Hallway / Room 30	67	8	317
Room 24	40	9	451
Room 26	101	8	399
<b>Average</b>	NA	7.2	356

Tables 7-3 and 7-4 below highlight the average removable and fixed cpm averages and the 1-sigma error (Standard Deviation) for each Survey Unit class.

**Table 7-3****Average cpm and Standard Deviation per Survey Unit Class (Removable)**

Survey Type	Removable Alpha (cpm/100cm <sup>2</sup> )		Removable Beta (cpm/100cm <sup>2</sup> )	
	Average	St. Dev	Average	St. Dev
Class 1 Survey Units	0.2	0.4	3	4.5
Class 2 Survey Unit	0.3	0.5	1.6	1.1
Class 3 Survey Unit	0.1	0.3	2.0	1.6
All Survey Units	0.2	0.4	2.9	3.8

**Table 7-4****Average cpm and Standard Deviation per Survey Unit Class (Fixed)**

Survey Type	Fixed Alpha (cpm/100cm <sup>2</sup> )		Fixed Beta (cpm/100cm <sup>2</sup> )	
	Average	St. Dev	Average	St. Dev
Class 1 Survey Units	6	4.4	336	91
Class 2 Survey Unit	7.4	4.2	282	65.1
Class 3 Survey Unit	10.1	3.7	302.9	43.1
All Survey Units	6.8	4.5	321.3	82.9

## 7.2 Data Quality Objectives

Overall, project results were compared with Data Quality Objectives established during the design phases of the project. All data quality objectives were met.

- The boundaries of the survey units were clearly established so that no area was left unsurveyed.
- The number of measurements was properly determined to demonstrate compliance.
- The documentation supports the decision that the site meets the release criterion established prior to the remediation process.

## 7.3 Results of the Data Quality Indicators

The data quality indicators are calculated for the Solutient field gamma measurements. A summary of the Data Quality Indicators is discussed and presented in the following subsections.

### 7.3.1 Precision (*Direct Measurements*)

Precision was measured by collecting a duplicate direct measurement at specified locations in the survey units. These measurements, shown in Table 6-4 were compared to the original measurement and shown as the delta between the two values for alpha and as % precision for beta. The average for all survey units (alpha) is 2.5 cpm and the average for all survey units (beta) is 5.8%. All QA/QC data were recorded on the summary sheets shown in Attachment 3.

**Table 7-5**  
**Average Precision of Field Direct Measurements**

<b>Survey Unit Identification</b>	<b>Direct Alpha Measurement (cpm/100cm<sup>2</sup>)</b>		<b>Delta</b>	<b>Direct Beta Measurement (cpm/100cm<sup>2</sup>)</b>		<b>% Precision</b>
	<b>Initial</b>	<b>QC</b>		<b>Initial</b>	<b>QC</b>	
<b>Mezzanine</b>	3	2	1	206	228	10.1
<b>Room 25</b>	1	5	4	325	316	2.8
<b>North Hallway</b>	7	9	2	228	226	0.9
<b>NE Hallway / Room 30</b>	5	5	0	184	201	8.8
<b>Room 24</b>	13	17	4	568	548	3.6
<b>Room 26</b>	6	2	4	354	324	8.8
<b>Average</b>	<b>NA</b>	<b>NA</b>	<b>2.5</b>	<b>NA</b>	<b>NA</b>	<b>5.8</b>

### **7.3.2 Precision (Smears)**

Precision was measured by collecting a duplicate removable measurement (smear) at specified locations in the survey units. These measurements shown in Table 6-5 were compared to the original measurement and due to the small values; the precision is shown as the delta between the two values. The average for all survey units (alpha) is 0.32 cpm and the average for all survey units (beta) is 0.82 cpm All QA/QC data were recorded on the summary sheets shown in Attachment 3.

**Table 7-6**  
**Average Precision of Field Removable Measurements**

<b>Survey Unit Identification</b>	<b>Removable Alpha Measurement (cpm/100cm<sup>2</sup>)</b>		<b>Delta</b>	<b>Removable Beta Measurement (cpm/100cm<sup>2</sup>)</b>		<b>Delta</b>
	<b>Initial</b>	<b>QC</b>		<b>Initial</b>	<b>QC</b>	
<b>Mezzanine</b>	0	0	0	3	2	1
<b>Room 25</b>	0	1.9	1.9	3	4	1
<b>North Hallway</b>	0	0	0	3.9	3	0.9
<b>NE Hallway / Room 30</b>	0	0	0	1	1	0
<b>Room 24</b>	0	0	0	6	7	1
<b>Room 26</b>	0	0	0	1	2	1
<b>Average</b>	<b>NA</b>	<b>NA</b>	<b>0.32</b>	<b>NA</b>	<b>NA</b>	<b>0.82</b>

### **7.3.3 Accuracy**

Accuracy of the field instrumentation was measured by comparing the daily source checks with the average established at the start of the project. The calculated average accuracy for each instrument is well within the objective of +/- 30% at 50% of the criterion value. The check source standard was used each morning prior to data

collection in the field as well as backgrounds. The accuracy results are shown in Table 6-6 below.

**Table 7-7**  
**Accuracy of Field Instrumentation**

Instrument Model / Type / SN	Type	% Accuracy Daily Source Check Results	% Accuracy Daily Background Results
Ludlum / 2360 / 276991	Alpha	3.3%	13.3%
Ludlum / 2360 / 276991	Beta	0.8%	2.9%

#### **7.3.4 Representativeness and Comparability**

All survey and sampling followed the MARSSIM protocols. Analysis of samples (smears) followed accepted standards for the onsite laboratory. The protocols for all survey units were consistent with each other and the procedures outlined in the sampling plan. Sample collection and analysis followed the same stringent controls throughout the conduct of the FSS.

#### **7.3.5 Completeness**

The percentage of measurements judged to be valid during the project well exceeded the goal of 90 percent.

### **7.4 Data Evaluation**

Over the course of the FSS, 435 1-minute instrument scans were collected, as well as 60 1-minute direct measurements and 60 smears. The data has been reviewed and assessed by comparing the DCGL's for both fixed and removable alpha/beta contamination. Each survey unit was passed.

### **7.5 Data Assessment**

All data was reviewed for conformance with indicated procedures and plans. Results have been converted to appropriate units for comparison with the release criteria.

### **7.6 Data Interpretation**

Application of the Wilcoxon Rank Sum (WRS) Test was not required, because there were no values above the DCGL for alpha, beta or the combined total of each in any survey unit.

### **7.7 Comparison with Project Objectives**

The project results met the Data Quality Objectives (DQO's), established during the design phase of the project.

## **8.0 FINAL STATUS SURVEY FINDINGS**

Building 104 at the Air Force research Laboratory in Rome NY meets the radiological criteria established for this project. The data presented in this report verifies the radiological condition are near or below site background levels.

## 9.0 REFERENCES

DoD 1997. *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, NUREG-1575, EPA 402-R-97-016, Department of Defense et. al., December 1997.

NRC 1998a *Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions*, NUREG-1507, Nuclear Regulatory Commission, June 1998.

Ra-226 Characterization of AFRL Building 104, Solutient technologies, LLC, April 19, 2011

## Attachment 1

### Material Backgrounds

Background Measurements - Variety of Building Materials							
Sample #	Date	Time	Alpha	Beta	S/R	Count Time	Location
						Minutes	
1	5/15/2013	11:18:10 AM	18	332	S	1	Block Walls
2	5/15/2013	11:19:19 AM	22	342	S	1	
3	5/15/2013	11:20:24 AM	20	348	S	1	
4	5/15/2013	11:21:35 AM	21	367	S	1	
5	5/15/2013	11:22:41 AM	15	336	S	1	
6	5/15/2013	11:23:47 AM	13	366	S	1	
7	5/15/2013	11:24:53 AM	9	340	S	1	
8	5/15/2013	11:25:58 AM	13	357	S	1	
9	5/15/2013	11:27:03 AM	14	335	S	1	
10	5/15/2013	11:28:10 AM	23	315	S	1	
Average			17	344			
11	5/15/2013	11:30:26 AM	19	252	S	1	Sheet Rock Walls
12	5/15/2013	11:31:31 AM	21	241	S	1	
13	5/15/2013	11:32:51 AM	13	263	S	1	
14	5/15/2013	11:34:37 AM	10	244	S	1	
15	5/15/2013	11:35:57 AM	15	209	S	1	
16	5/15/2013	11:37:14 AM	14	235	S	1	
17	5/15/2013	11:38:25 AM	11	235	S	1	
18	5/15/2013	11:39:42 AM	16	226	S	1	
19	5/15/2013	11:40:54 AM	20	264	S	1	
20	5/15/2013	11:42:04 AM	9	260	S	1	
Average			15	243			
21	5/15/2013	11:44:03 AM	17	337	S	1	Mastic Floor
22	5/15/2013	11:45:21 AM	19	370	S	1	
23	5/15/2013	11:46:39 AM	16	401	S	1	
24	5/15/2013	11:48:08 AM	14	304	S	1	
25	5/15/2013	11:49:47 AM	19	353	S	1	
26	5/15/2013	11:51:01 AM	20	336	S	1	
27	5/15/2013	11:52:21 AM	14	371	S	1	
28	5/15/2013	11:53:31 AM	19	385	S	1	
29	5/15/2013	11:55:22 AM	11	346	S	1	
30	5/15/2013	11:56:37 AM	19	323	S	1	
Average			17	353			
31	5/15/2013	11:59:21 AM	5	331	S	1	Bare Concrete
32	5/15/2013	12:00:30 PM	6	341	S	1	
33	5/15/2013	12:01:40 PM	24	384	S	1	
34	5/15/2013	12:03:02 PM	19	329	S	1	
35	5/15/2013	12:04:15 PM	12	313	S	1	
36	5/15/2013	12:05:29 PM	9	341	S	1	
37	5/15/2013	12:06:47 PM	12	336	S	1	
38	5/15/2013	12:07:59 PM	14	319	S	1	
39	5/15/2013	12:09:30 PM	8	346	S	1	
40	5/15/2013	12:10:46 PM	10	316	S	1	
Average			12	336			
41	5/15/2013	12:11:59 PM	11	246	S	1	Mezzanine Walls
42	5/15/2013	12:13:04 PM	10	231	S	1	
43	5/15/2013	12:14:17 PM	11	237	S	1	
44	5/15/2013	12:15:22 PM	10	235	S	1	
45	5/15/2013	12:16:53 PM	6	209	S	1	
46	5/15/2013	12:17:58 PM	7	242	S	1	
47	5/15/2013	12:19:04 PM	11	267	S	1	
48	5/15/2013	12:20:11 PM	14	266	S	1	
49	5/15/2013	12:21:22 PM	8	206	S	1	
50	5/15/2013	12:22:32 PM	11	264	S	1	
Average			10	240			
1	5/9/2013		7	560	S	1	Outside Brick
2	5/9/2013		5	542	S	1	
3	5/9/2013		5	536	S	1	
4	5/9/2013		6	580	S	1	
Average			6	555			

Attachment 2  
Instrument Daily Check Sheets

Model	Serial Number	Calibration Due
<b>2360</b>	<b>276991</b>	<b>8/4/2013</b>

Source Check Location: Bldg 104 Office / Lab

Background Location: Bldg 104 Office / Lab

MDA (1 min readings)= $3+4.65*(\text{SQRT}(\text{BKGD}))/(E^*\text{A}/100)$

A= Probe Area Factor (Area/100 cm<sup>2</sup>)

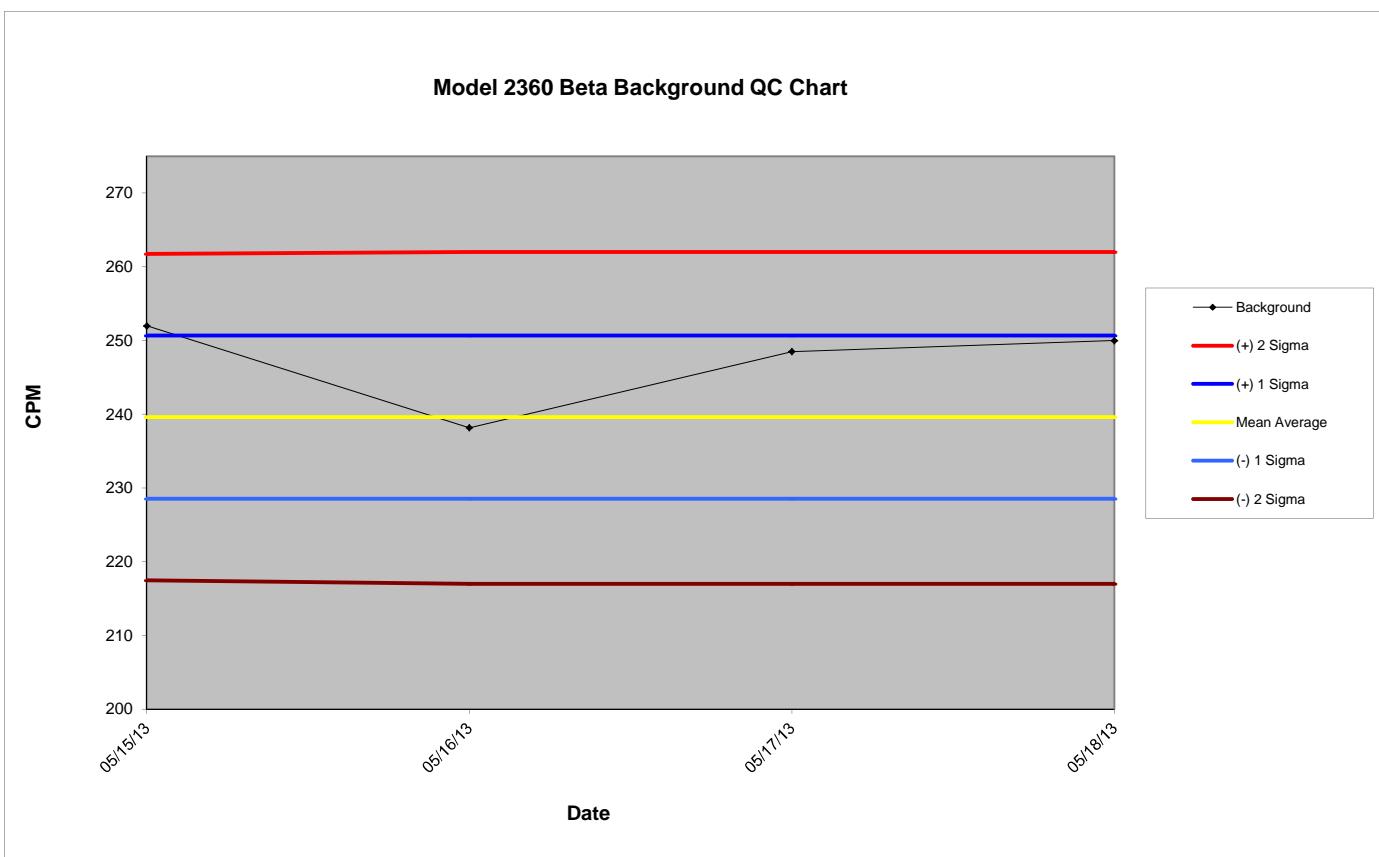
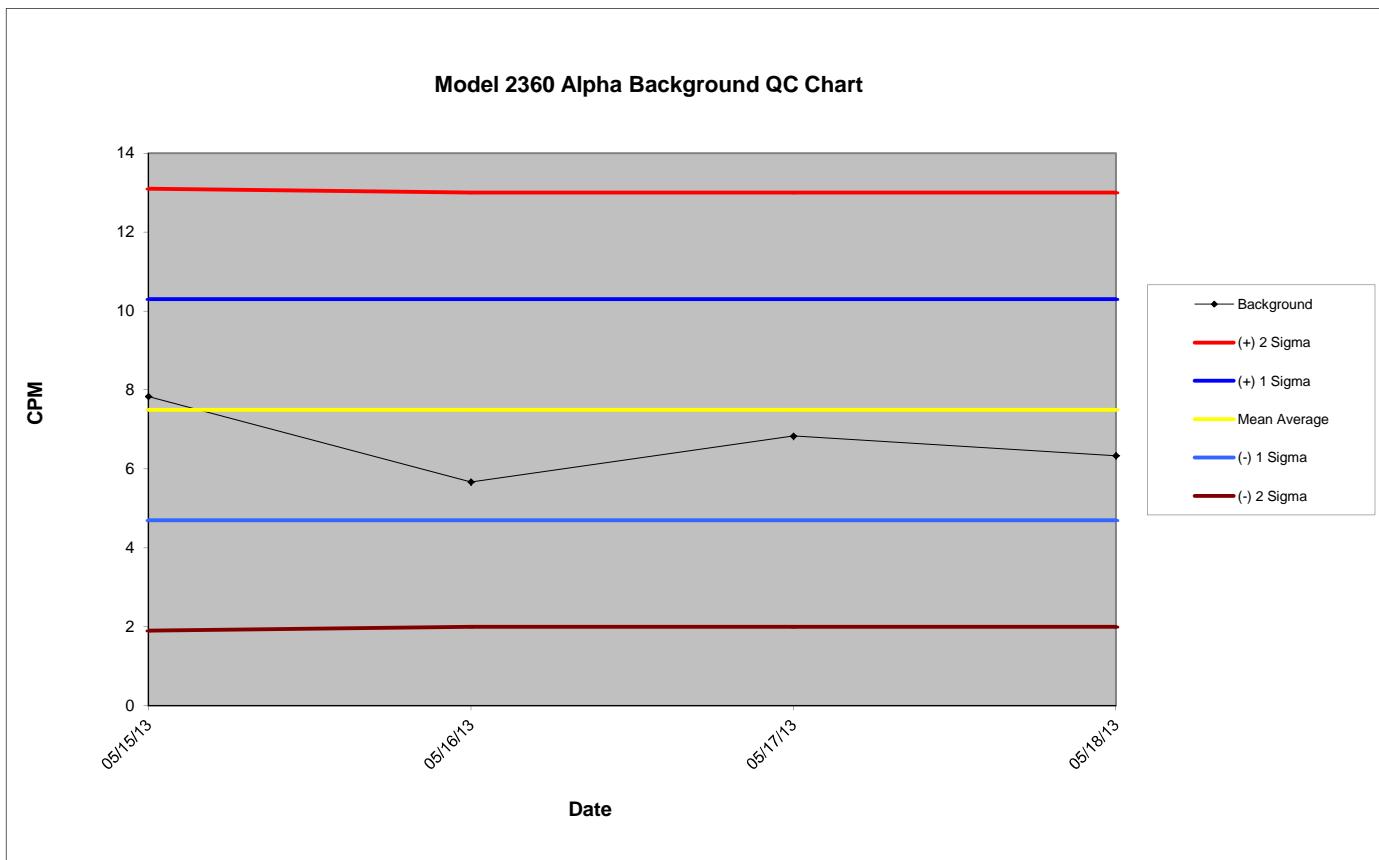
Probe Model #:	43-93	Serial #:	245583	Cal Due:	8/4/2013
<b>Probe Description:</b>					
Threshold	HV		Response Switch		
<b>Area Correction Factor: (A= cm<sup>2</sup>/100 cm<sup>2</sup>); A =</b>					
Type of Source	Serial #	Isotope	Source Date	<b>Activity in dpm</b>	
a Source ID #	LH556	Th230	1/31/03		11,100
g Source ID #					
b , g Source ID #	LH558	Tc99	1/31/03		20,420

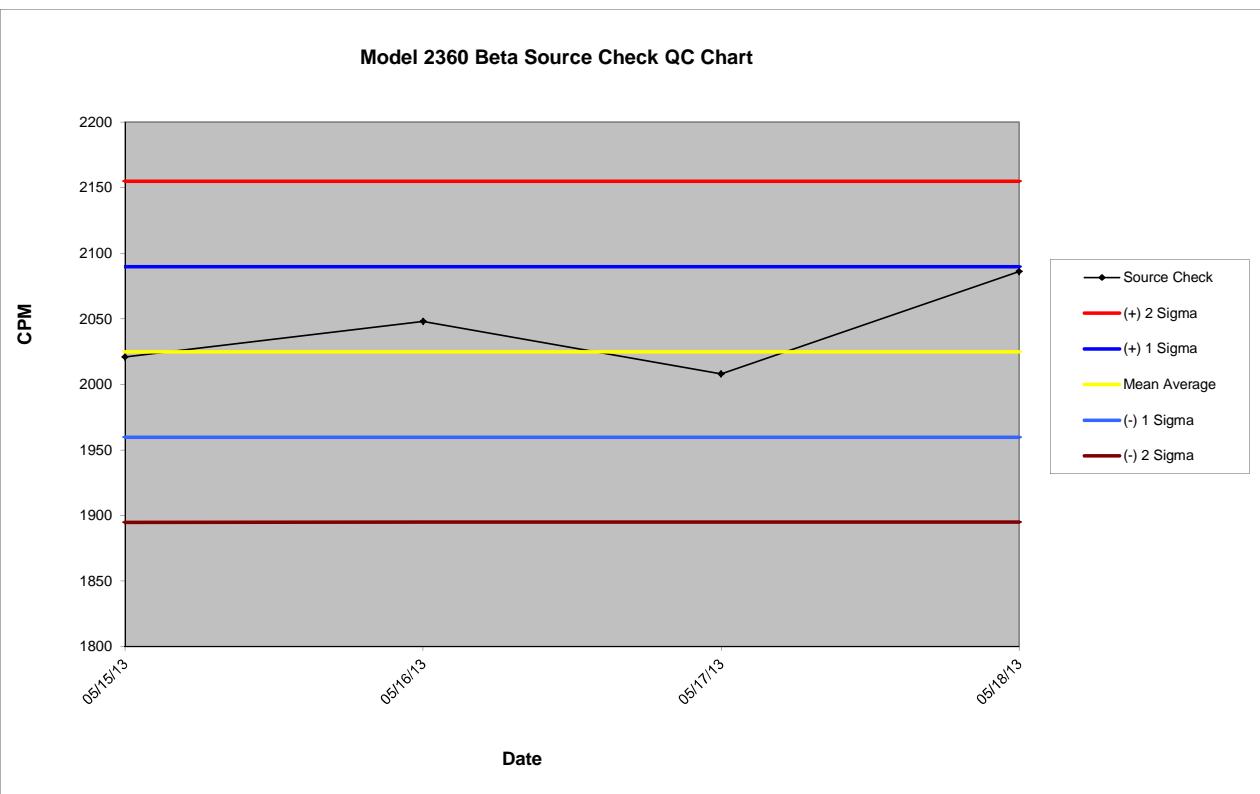
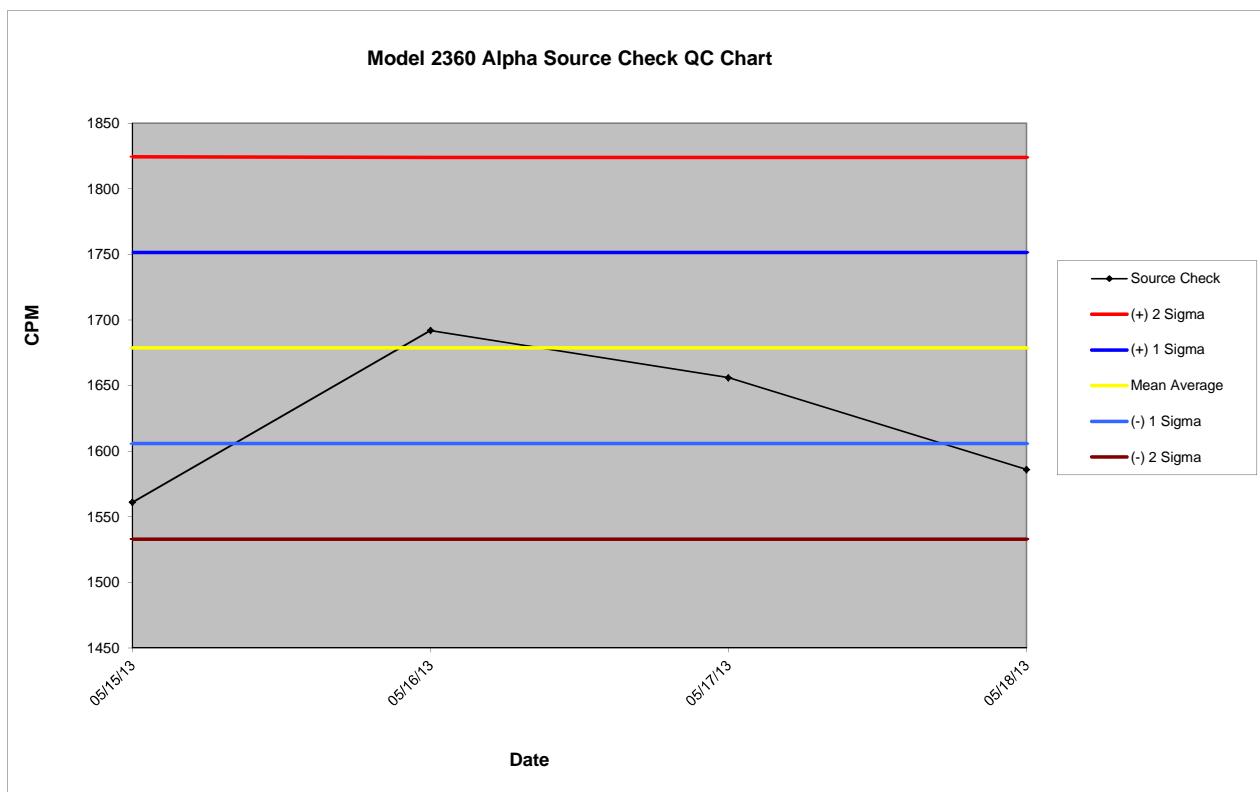
Date	Battery (Voltage)	Background Measurements (cpm)						Source Counts		a eff	b , eff	Operation Checks				Average Bkgd		Daily Bkgd	
		Start of Shift (SoS)		End of Shift (EoS)				a cpm	b , cpm			a Source	b , Source	a Bkgd	b , Bkgd	SoS	EoS	Average	
05/15/13	ok	10	7	6	7	7	10	1561		14%		TRUE		TRUE		8	8	8	
05/16/13	ok	6	7	9	5	4	3	1692		15%		TRUE		TRUE		7	4	6	
05/17/13	ok	3	4	4	9	11	10	1656		15%		TRUE		TRUE		4	10	7	
05/18/13	ok	4	7	5	5	8	9	1586		14%		TRUE		TRUE		5	7	6	
05/15/13	ok	249	252	265	229	252	265		2021		9%		TRUE		TRUE		255	249	252
05/16/13	ok	235	220	229	261	258	226		2048		9%		TRUE		TRUE		228	248	238
05/17/13	ok	267	254	235	258	237	240		2008		9%		TRUE		TRUE		252	245	249
05/18/13	ok	257	240	240	260	248	255		2086		9%		TRUE		TRUE		246	254	250
Alpha		1642	1633	1687	1642	1617	1619	1638	1692	1804	1813	1679							
Beta / Gamma		2067	2089	1967	1955	2000	2103	2052	1955	2106	1954	2025							
10 Bkgd Measurements																			
Alpha		10	7	4	5	11	4	10	7	6	11	8							
Beta / Gamma		235	230	229	248	252	249	237	252	244	220	240							

Radiation Type	Alpha	Average	St. Dev.	2 s	3 s
Source		1679	73	146	219
Bkgd		8	3	6	8
Source Range +/- 25%	1259	to	2098		
Source Range +/- 1 s	1606	to	1752		
Source Range +/- 2 s	1533	to	1824		
Bkgd Range +/- 25%	6	to	9		
Bkgd Range +/- 1 s	5	to	10		
Bkgd Range +/- 2 s	2	to	13		

	Beta	Average	St. Dev.	2 s	3 s
Source		2025	65	130	195
Bkgd		240	11	22	33
Source Range +/- 25%	1519	to	2531		
Source Range +/- 1 s	1960	to	2090		
Source Range +/- 2 s	1895	to	2155		
Bkgd Range +/- 25%	180	to	300		
Bkgd Range +/- 1 s	229	to	251		
Bkgd Range +/- 2 s	217	to	262		

Date	Bkgd	Mean	(-) 1 Sigma	(+) 1 Sigma	(-) 2 Sigma	(+) 2 Sigma	Source	Mean	(-) 1 Sigma	(+) 1 Sigma	(-) 2 Sigma	(+) 2 Sigma
05/15/13	8	8	5	10	2	13	1561	1679	1606	1752	1533	1824
05/16/13	6	8	5	10	2	13	1692	1679	1606	1752	1533	1824
05/17/13	7	8	5	10	2	13	1656	1679	1606	1752	1533	1824
05/18/13	6	8	5	10	2	13	1586	1679	1606	1752	1533	1824
05/15/13	252	240	229	251	217	262	2021	2025	1960	2090	1895	2155
05/16/13	238	240	229	251	217	262	2048	2025	1960	2090	1895	2155
05/17/13	249	240	229	251	217	262	2008	2025	1960	2090	1895	2155
05/18/13	250	240	229	251	217	262	2086	2025	1960	2090	1895	2155







## GRIFFIN INSTRUMENTS



PROBE #: PR245583

Date: 08/04/12

## PLATEAU AND SET POINT DATA

HV / Vernier:	Tc-99 Source Response SS (CPM):			Pu-239 Source Response (CPM):			Background (CPM):		Net A to B Xtalk: <10%	B to A Xtalk: <1%
	A ch.	B ch.	Net Eff.	A ch.	B ch.	Net Eff.	A ch.	B ch.		
700	16	1474	8.1%	3184	409	17.2%	0	80	9.4%	1.09%
725	22	2251	12.3%	3596	491	19.4%	0	121	9.3%	<1%
750	22	2633	14.4%	3724	586	20.1%	0	137	10.8%	<1%
775	41	2980	16.1%	3952	761	21.4%	1	199	12.5%	<1%
800				4094	1282	22.1%	1	226	20.5%	

HV / Vernier	Alpha / Beta Bkg (cpm)		Pu-239	Tc-99 Ni	Tc-99 SS	Th-230	C-14	Sr-90
	1	111						
725 / N.A	CPM:	3668			2180	2894		2713
4 pi AL Efficiencies:		<b>19.82%</b>			<b>11.96%</b>	<b>17.32%</b>		<b>28.76%</b>
2 pi AL Efficiencies:		<b>39.14%</b>			<b>19.16%</b>	<b>35.41%</b>		<b>41.13%</b>

REMARKS: Meter repaired.

Does Instrument Meet Final Acceptance Criteria?:  Yes  NoCalibration Sticker Attached?:  Yes  No

Date Instrument is Due For Next Calibration: 08/04/13

INSTRUMENT MARRIED WITH 2360 # 276991

Performed/Reviewed by: Joanne Glenn Date: 8/4/2012 Entered by: JP initials

2 pi efficiencies denoted in italics.

Calibrations performed to ANSI N323A-1997 standards.



## GRIFFIN INSTRUMENTS



## CALIBRATION CERTIFICATE FOR

2360

SERIAL# 276991

Owner: SOLVENT TECHNOLOGIES

DATE: 08/04/12

LOCATION:

Griffin Inst

TECH: Joanne Glenn

DATE LAST CAL EXPIRES:

03/16/12

Reason For Calibration:

 Due For Calibration Repair (See Remarks) Other (See Remarks) Due and Repair (See Remarks)NIST TRACEABLE EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2

SERIAL #: 284951

CAL. DUE: 12/28/12

 Audio Response Geotropism

CABLE LENGTH: 39"

CONDITION: Sat

AF MECHANICAL ZERO: 0

AL MECHANICAL ZERO: 0

NEW BATTERIES:

 Yes  No

BATTERY CHECK: Sat

HV (+/-10%)	AS FOUND HV	AS LEFT HV	WINDOW SETTINGS:	A.F.	A.L.
500 V:	500	A.F.	BT (3.5 mV +/- 1 mV):	3.5	A.F.
1000 V:	1000	A.F.	BW (30 mV +/- 3 mV):	30	A.F.
1500 V:	1500	A.F.	AT (120 mV +/- 10 mV):	120	A.F.

## RATE METER

## SCALER

SCALE RATE CPM AS FOUND % ERROR AS LEFT % ERROR AS FOUND % ERROR AS LEFT % ERROR

x1 or x1	100	100	0.0%	A.F.	250	0.0%	A.F.
	250	250	0.0%	A.F.			
	400	400	0.0%	A.F.			
x1 or x10	1000	1000	0.0%	A.F.			
	2500	2500	0.0%	A.F.			
	4000	4000	0.0%	A.F.			
x10 or x100	10K	10 K	0.0%	A.F.			
	25K	25 K	0.0%	A.F.			
	40K	40 K	0.0%	A.F.			
x100 or x1000	100K	100 K	0.0%	A.F.			
	250K	250 K	0.0%	A.F.			
	400K	400 K	0.0%	A.F.			

Is the As Found Data Within 20% of the Set Point?:

 Yes  NoOverload Light:  Adjusted  Not Adj.

REMARKS: Meter erratic when probe hooked up. Replaced C311 capacitor.

Does Instrument Meet Final Acceptance Criteria?:  Yes  NoCalibration Sticker Attached?:  Yes  No

Date Instrument is Due For Next Calibration: 08/04/13

INSTRUMENT MARRIED WITH

43-93

# PR245583

Performed/Reviewed by:

Joanne Glenn

Date: 8/4/2012

Entered by:  Initials



## GRIFFIN INSTRUMENTS



## CALIBRATION CERTIFICATE FOR 43-93 PROBE # PR245583

Owner: SOLVENT TECHNOL

1937

DATE: 08/04/12  
TECH: Joanne GlennLOCATION: Griffin Inst  
DATE LAST CAL EXPIRES: 03/16/12

Due For Calibration  Repair (See Remarks)  Other (See Remarks)  Due and Repair

CABLE LENGTH: 39"

INPUT SENSITIVITY: dual

NIST TRACEABLE EQUIPMENT AND STANDARDS USED DURING CALIBRATION

MODEL: 2360 SERIAL #: 276991 CAL. DUE: 08/04/13

NIST TRACEABLE SOURCES USED

Source Number	Isotope	4 pi Activity	Assay Date	2 pi Activity
00TC470-0654	Tc99 SS	17,300 dpm	06/15/09	10,800 cpm
94TH470-1593	Th230	16,700 dpm	06/16/09	8,170 cpm
2696-00	Pu239	18,500 dpm	12/02/09	9,370 cpm
2697-00	Sr90	12,200 dpm	03/01/00	8,530 cpm

## Efficiencies from last cal.:

Condition:  Sat  Unsat Pu: [ ] Th: 19.75% Sr: [ ]  
 Tc ss: 11.39% C14: [ ] Tc Ni: [ ]

## As Found (AF) Efficiencies:

HV / Vernier:	Tc-99 Source Response Nickel (CPM):			Pu-239 Source Response (CPM):			Background (CPM):			Tc-99 Source Response Stainless Steel (CPM):		
	A ch.	B ch.	Net Eff.	A ch.	B ch.	Net Eff.	A ch.	B ch.	A ch.	B ch.	Net Eff.	
875 / N/A												

Net A to B Xtalk: <10%	B to A Xtalk: <1%
[ ]	[ ]

Pu239      Tc99 Ni      Tc99 ss      Th-230      Sr90      C-14

AF CPM:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
AF 4 pi eff:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
AF 2 pi eff:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

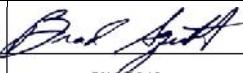
Is as found efficiency within 20% of the efficiency from the last cal?  Yes  No (See Remarks)

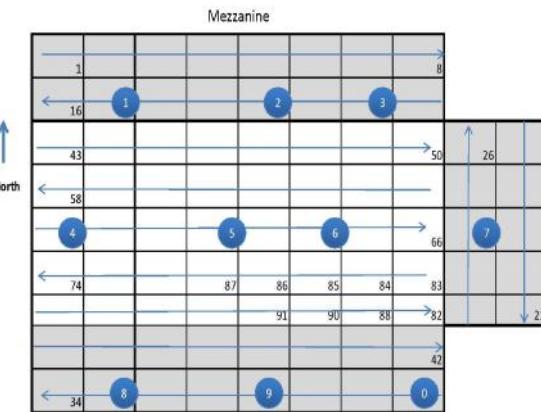
Note: If the as found data is within 10% of the last calibration and the B-A Xtalk is &lt;1% and the A-B Xtalk is &lt;1%, then the technician may N/A the plateau section and go directly to remarks.

Solutient Technologies, LLC

Building 104, AFRL Rome, NY  
Final Status Survey Report

Attachment 3  
Final Status Survey Data Sheets

Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument				Survey Instrument					
Reviewed by :		Location	Mezzanine	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93		
Date	5/15/2013	Survey Unit ID	Class 1	Serial #	1136			Serial #	276991	Serial #	245583		
				Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013		
Diagram				a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240		
				a Efficiency	20%	b/g Efficiency	35%	a Efficiency	27%	b/g Efficiency	22%		
				Removable Measurements (Smears)				Direct Measurements					
Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria	
	alpha	beta	alpha	beta	( <sup>(1)</sup> ) 100	1,000		alpha	beta	alpha	beta	500	5,000
1	0	15.74	0	43	Go	Go	1	3	186	0	0	Go	Go
2	0.98	4.92	5	12	Go	Go	2	4	197	0	0	Go	Go
3	0	2.95	0	6	Go	Go	3	3	206	0	0	Go	Go
4	0	8.85	0	23	Go	Go	4	2	304	0	288	Go	Go
5	0	4.92	0	12	Go	Go	5	2	308	0	306	Go	Go
6	0.98	2.95	5	6	Go	Go	6	1	218	0	0	Go	Go
7	0	3.93	0	9	Go	Go	7	2	375	0	608	Go	Go
8	0.98	2.95	5	6	Go	Go	8	3	353	0	509	Go	Go
9	0	0	0	0	Go	Go	9	2	220	0	0	Go	Go
10	0	0	0	0	Go	Go	10	2	399	0	716	Go	Go
3 (QC)	0	2	0	3	Go	Go	3 (QC)	2	228	0	0	Go	Go
Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. <sup>(1)</sup> Limit set at 20% for removable. 1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.												Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. 5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation. (QC) = Quality Control Sample	



Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	10	α Eff.	27%		
β Bkg	240	β Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count Time	Location
1	5/15/2013	2:28:34 PM	10	237	S	1	Mezzanine
2	5/15/2013	2:29:41 PM	10	245	S	1	Mezzanine
3	5/15/2013	2:30:47 PM	10	280	S	1	Mezzanine
4	5/15/2013	2:31:52 PM	9	300	S	1	Mezzanine
5	5/15/2013	2:33:48 PM	7	255	S	1	Mezzanine
6	5/15/2013	2:34:52 PM	7	281	S	1	Mezzanine
7	5/15/2013	2:35:59 PM	6	236	S	1	Mezzanine
8	5/15/2013	2:37:03 PM	7	250	S	1	Mezzanine
9	5/15/2013	2:38:10 PM	9	217	S	1	Mezzanine
10	5/15/2013	2:39:16 PM	6	272	S	1	Mezzanine
11	5/15/2013	2:40:23 PM	6	248	S	1	Mezzanine
12	5/15/2013	2:41:28 PM	8	226	S	1	Mezzanine
13	5/15/2013	2:42:33 PM	9	262	S	1	Mezzanine
14	5/15/2013	2:43:39 PM	7	245	S	1	Mezzanine
15	5/15/2013	2:44:45 PM	8	253	S	1	Mezzanine
16	5/15/2013	2:45:49 PM	6	239	S	1	Mezzanine
17	5/15/2013	2:46:54 PM	8	245	S	1	Mezzanine
18	5/15/2013	2:47:59 PM	11	250	S	1	Mezzanine
19	5/15/2013	2:49:19 PM	3	272	S	1	Mezzanine
20	5/15/2013	2:50:25 PM	10	268	S	1	Mezzanine
21	5/15/2013	2:51:31 PM	10	272	S	1	Mezzanine
22	5/15/2013	2:52:37 PM	13	234	S	1	Mezzanine
23	5/15/2013	2:53:44 PM	14	294	S	1	Mezzanine
24	5/15/2013	2:54:49 PM	13	282	S	1	Mezzanine
25	5/15/2013	2:55:58 PM	2	274	S	1	Mezzanine
26	5/15/2013	2:57:03 PM	7	245	S	1	Mezzanine
27	5/15/2013	2:58:09 PM	8	277	S	1	Mezzanine
28	5/15/2013	2:59:15 PM	10	239	S	1	Mezzanine
29	5/15/2013	3:00:20 PM	7	276	S	1	Mezzanine
30	5/15/2013	3:01:26 PM	1	252	S	1	Mezzanine
31	5/15/2013	3:02:32 PM	7	232	S	1	Mezzanine
32	5/15/2013	3:03:43 PM	6	402	S	1	Mezzanine
33	5/15/2013	3:04:49 PM	15	401	S	1	Mezzanine
34	5/15/2013	3:05:55 PM	6	419	S	1	Mezzanine
35	5/15/2013	3:07:02 PM	7	419	S	1	Mezzanine
36	5/15/2013	3:08:09 PM	6	392	S	1	Mezzanine

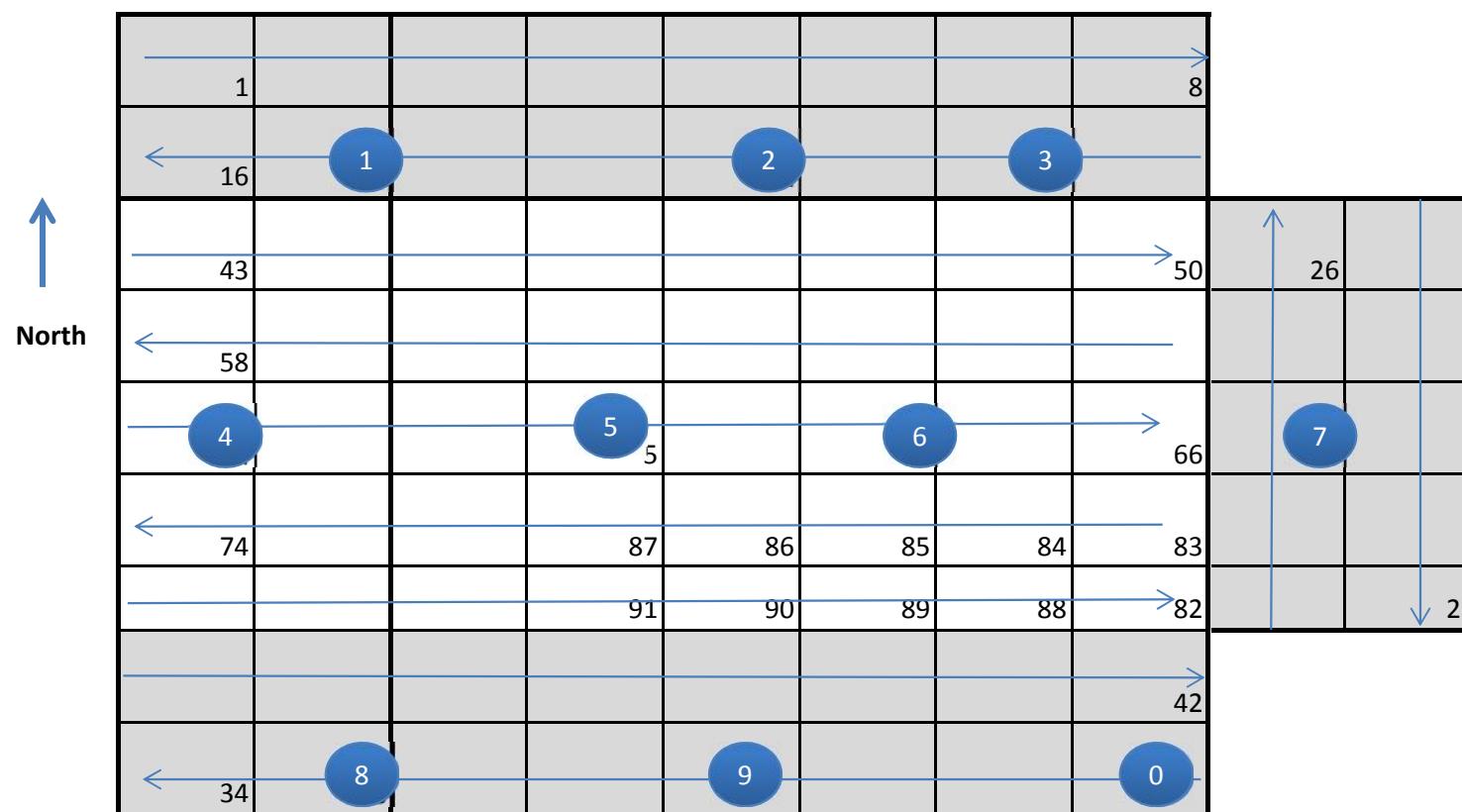
Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	10	α Eff.	27%		
β Bkg	240	β Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count Time	Location
37	5/15/2013	3:09:16 PM	8	350	S	1	Mezzanine
38	5/15/2013	3:10:21 PM	5	337	S	1	Mezzanine
39	5/15/2013	3:11:27 PM	5	362	S	1	Mezzanine
40	5/15/2013	3:12:31 PM	5	374	S	1	Mezzanine
41	5/15/2013	3:13:39 PM	10	284	S	1	Mezzanine
42	5/15/2013	3:14:48 PM	2	249	S	1	Mezzanine
43	5/15/2013	3:16:53 PM	3	268	S	1	Mezzanine
44	5/15/2013	3:18:00 PM	9	251	S	1	Mezzanine
45	5/15/2013	3:19:06 PM	6	350	S	1	Mezzanine
46	5/15/2013	3:20:11 PM	6	344	S	1	Mezzanine
47	5/15/2013	3:21:17 PM	4	340	S	1	Mezzanine
48	5/15/2013	3:22:23 PM	3	369	S	1	Mezzanine
49	5/15/2013	3:23:28 PM	4	341	S	1	Mezzanine
50	5/15/2013	3:24:34 PM	4	364	S	1	Mezzanine
51	5/15/2013	3:44:31 PM	10	285	S	1	Mezzanine
52	5/15/2013	3:45:37 PM	7	263	S	1	Mezzanine
53	5/15/2013	3:46:46 PM	4	326	S	1	Mezzanine
54	5/15/2013	3:47:52 PM	7	277	S	1	Mezzanine
55	5/15/2013	3:48:58 PM	9	297	S	1	Mezzanine
56	5/15/2013	3:50:03 PM	10	306	S	1	Mezzanine
57	5/15/2013	3:51:09 PM	5	269	S	1	Mezzanine
58	5/15/2013	3:52:17 PM	3	278	S	1	Mezzanine
59	5/15/2013	3:53:24 PM	2	310	S	1	Mezzanine
60	5/15/2013	3:54:31 PM	6	314	S	1	Mezzanine
61	5/15/2013	3:55:37 PM	5	308	S	1	Mezzanine
62	5/15/2013	3:56:43 PM	4	328	S	1	Mezzanine
63	5/15/2013	3:57:49 PM	5	277	S	1	Mezzanine
64	5/15/2013	3:58:55 PM	4	287	S	1	Mezzanine
65	5/15/2013	4:00:03 PM	6	310	S	1	Mezzanine
66	5/15/2013	4:01:10 PM	4	295	S	1	Mezzanine
67	5/15/2013	4:02:16 PM	4	295	S	1	Mezzanine
68	5/15/2013	4:03:22 PM	5	316	S	1	Mezzanine
69	5/15/2013	4:04:29 PM	4	349	S	1	Mezzanine

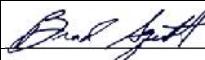
Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	10	α Eff.	27%		
β Bkg	240	β Eff.	22%		

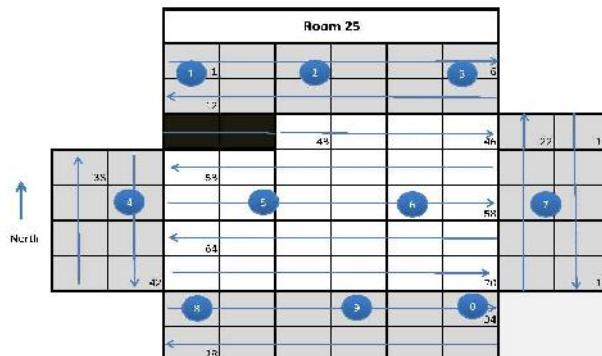
Sample	Date	Time	Alpha	Beta	SR	Count Time	Location
70	5/15/2013	4:05:34 PM	6	301	S	1	Mezzanine
71	5/15/2013	4:06:40 PM	9	310	S	1	Mezzanine
72	5/15/2013	4:07:46 PM	5	303	S	1	Mezzanine
73	5/15/2013	4:08:51 PM	3	271	S	1	Mezzanine
74	5/15/2013	4:09:56 PM	10	279	S	1	Mezzanine
75	5/15/2013	4:11:02 PM	2	284	S	1	Mezzanine
76	5/15/2013	4:12:09 PM	6	316	S	1	Mezzanine
77	5/15/2013	4:13:15 PM	5	320	S	1	Mezzanine
78	5/15/2013	4:14:20 PM	6	271	S	1	Mezzanine
79	5/15/2013	4:15:26 PM	6	317	S	1	Mezzanine
80	5/15/2013	4:16:32 PM	2	314	S	1	Mezzanine
81	5/15/2013	4:17:37 PM	8	337	S	1	Mezzanine
82	5/15/2013	4:18:45 PM	3	300	S	1	Mezzanine
83	5/15/2013	4:19:51 PM	5	338	S	1	Mezzanine
84	5/15/2013	4:20:59 PM	6	308	S	1	Mezzanine
85	5/15/2013	4:22:12 PM	4	307	S	1	Mezzanine
86	5/15/2013	4:23:18 PM	4	337	S	1	Mezzanine
87	5/15/2013	4:24:23 PM	2	298	S	1	Mezzanine
88	5/15/2013	4:25:30 PM	2	304	S	1	Mezzanine
89	5/15/2013	4:26:36 PM	6	294	S	1	Mezzanine
90	5/15/2013	4:27:41 PM	3	337	S	1	Mezzanine
91	5/15/2013	4:28:47 PM	8	344	S	1	Mezzanine
Average			6	297			

Mezzanine



Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument					Survey Instrument							
Reviewed by :		Location	Mezzanine - Outside Wall	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93					
Date	5/15/2013	Survey Unit ID	N/A <th>Serial #</th> <td>1136</td> <th data-cs="3" data-kind="parent"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th>Serial #</th> <td>276991</td> <th>Serial #</th> <td>245583</td>	Serial #	1136				Serial #	276991	Serial #	245583				
<b>Diagram</b>				Cal. Due	9/25/2013				Cal. Due	8/4/2013	Cal. Due	8/4/2013				
				a bkg.	0	b/gbkg.	0.8	a bkg.	8	b/gbkg.	240					
<td>a Efficiency</td> <td>20%</td> <td>b/g</td> <td>35%</td> <td>a Efficiency</td> <td>27%</td> <td>b/g</td> <td>22%</td>	a Efficiency	20%	b/g	35%	a Efficiency	27%	b/g	22%								
<b>Removable Measurements (Smears)</b>										<b>Direct Measurements</b>						
Location ID	<b>cpm/100cm<sup>2</sup></b>				<b>dpm/100cm<sup>2</sup></b>			<b>Criteria</b>		Location ID	<b>cpm/100cm<sup>2</sup></b>				<b>Criteria</b>	
	alpha	beta	alpha	beta	α	β		( <sup>1</sup> )100	1,000		alpha	beta	alpha	beta	500	5,000
1	0	4.92	0	12	Go	Go		1	5	414	0	784	Go	Go		
2	0.98	2.95	5	6	Go	Go		2	7	369	0	581	Go	Go		
3	0	3.93	0	9	Go	Go		3	6	390	0	676	Go	Go		
4	0.98	2.95	5	6	Go	Go		4	5	330	0	405	Go	Go		
Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. ( <sup>1</sup> ) Limit set at 20% for removable. 1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.										Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. 5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation.						

Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument				Survey Instrument					
Reviewed by :		Location	Room 25	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93		
Date	5/16 - 5/17/2013	Survey Unit ID	Class 1	Serial #	1136			Serial #	276991	Serial #	245583		
				Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013		
Diagram				a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240		
				a Efficiency	20%	b/g Efficiency	35%	a Efficiency	27%	b/g Efficiency	22%		
				Removable Measurements (Smears)				Direct Measurements					
Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria	
	alpha	beta	alpha	beta	α	β		alpha	beta	alpha	beta	α	β
1	0	0.98	0	1	Go	Go	1	7	218	18	0	Go	Go
2	0.98	3.93	5	9	Go	Go	2	14	232	44	0	Go	Go
3	0	2.95	0	6	Go	Go	3	1	325	0	405	Go	Go
4	0	2.95	0	6	Go	Go	4	8	441	22	928	Go	Go
5	0	0.98	0	1	Go	Go	5	13	408	40	779	Go	Go
6	0	3.93	0	9	Go	Go	6	11	350	33	518	Go	Go
7	0	0.98	0	1	Go	Go	7	8	210	22	0	Go	Go
8	0	2.95	0	6	Go	Go	8	3	341	4	477	Go	Go
9	0	0	0	0	Go	Go	9	3	436	4	905	Go	Go
10	0	0	0	0	Go	Go	10	11	374	33	626	Go	Go
3 (QC)	1.9	4	9	9	Go	Go	3 (QC)	5	316	11	365	Go	Go
				Limits:				Limits:					
				500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation.				500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation.					
				(1) Limit set at 20% for removable.				5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation.					
				1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.				(QC) = Quality Control Sample					



Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	17	α Eff.	27%		
β,γ Bkg	344	β,γ Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count Time	Location
1	5/17/2013	6:47:55 PM	3	310	S	1	Room 25
2	5/17/2013	6:49:00 PM	1	382	S	1	Room 25
3	5/17/2013	6:50:11 PM	7	341	S	1	Room 25
4	5/17/2013	6:51:55 PM	3	321	S	1	Room 25
5	5/17/2013	6:53:01 PM	4	272	S	1	Room 25
6	5/17/2013	6:54:07 PM	7	293	S	1	Room 25
7	5/17/2013	6:56:12 PM	3	352	S	1	Room 25
8	5/17/2013	6:57:20 PM	4	345	S	1	Room 25
9	5/17/2013	6:58:26 PM	6	343	S	1	Room 25
10	5/17/2013	6:59:32 PM	2	349	S	1	Room 25
11	5/17/2013	7:00:37 PM	4	337	S	1	Room 25
12	5/17/2013	7:01:43 PM	1	401	S	1	Room 25
13	5/17/2013	7:02:49 PM	5	391	S	1	Room 25
14	5/17/2013	7:03:54 PM	2	360	S	1	Room 25
15	5/17/2013	7:05:00 PM	3	408	S	1	Room 25
16	5/17/2013	7:06:36 PM	3	377	S	1	Room 25
17	5/17/2013	7:08:03 PM	1	357	S	1	Room 25
18	5/17/2013	7:09:08 PM	3	367	S	1	Room 25
19	5/17/2013	7:11:22 PM	2	366	S	1	Room 25
20	5/17/2013	7:12:28 PM	1	325	S	1	Room 25
21	5/17/2013	7:13:34 PM	3	360	S	1	Room 25
22	5/17/2013	7:14:41 PM	4	332	S	1	Room 25
23	5/17/2013	7:17:30 PM	5	361	S	1	Room 25
24	5/17/2013	7:18:36 PM	3	407	S	1	Room 25
25	5/17/2013	7:24:22 PM	2	243	S	1	Room 25
26	5/17/2013	7:25:28 PM	7	248	S	1	Room 25
27	5/17/2013	7:26:33 PM	1	207	S	1	Room 25
28	5/17/2013	7:27:39 PM	1	197	S	1	Room 25
29	5/17/2013	7:29:29 PM	4	270	S	1	Room 25
30	5/17/2013	7:30:35 PM	6	256	S	1	Room 25
31	5/17/2013	7:31:41 PM	3	287	S	1	Room 25
32	5/17/2013	7:32:47 PM	6	555	S	1	Room 25
33	5/17/2013	7:33:52 PM	3	567	S	1	Room 25
34	5/17/2013	7:43:20 PM	4	333	S	1	Room 25
35	5/17/2013	7:44:26 PM	2	309	S	1	Room 25
36	5/17/2013	7:45:33 PM	5	316	S	1	Room 25
37	5/17/2013	7:46:42 PM	3	216	S	1	Room 25
38	5/17/2013	7:47:48 PM	4	219	S	1	Room 25

# Final Status Survey

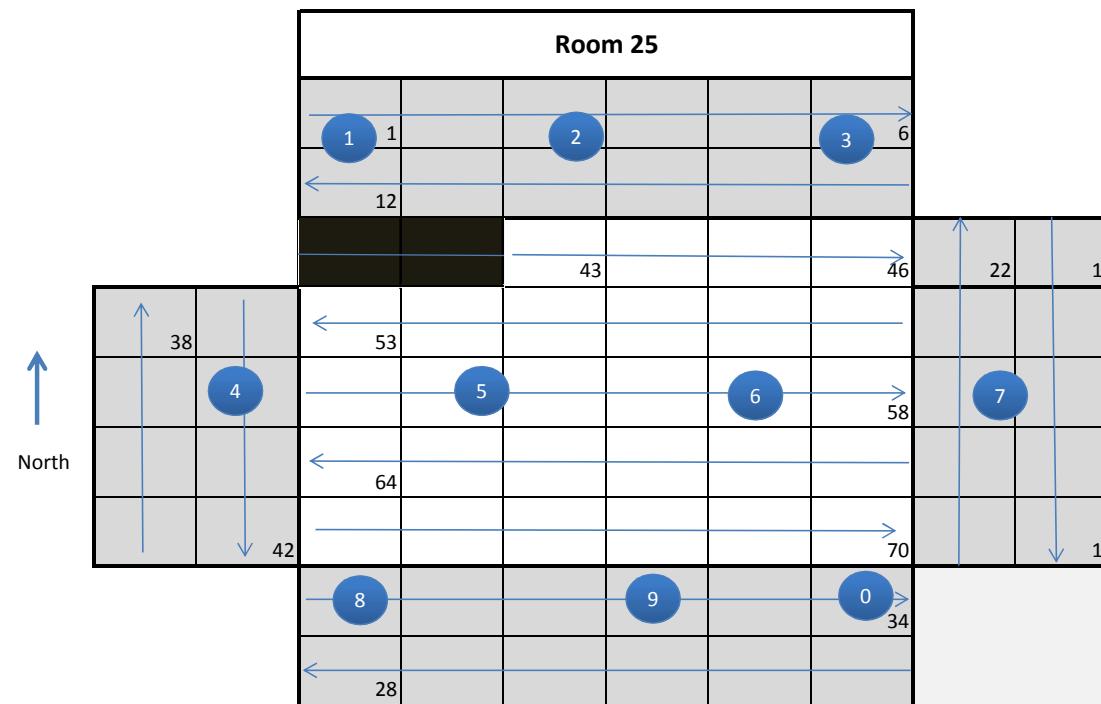
## Building 104

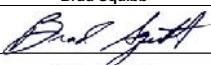
# Solutient Technologies, LLC

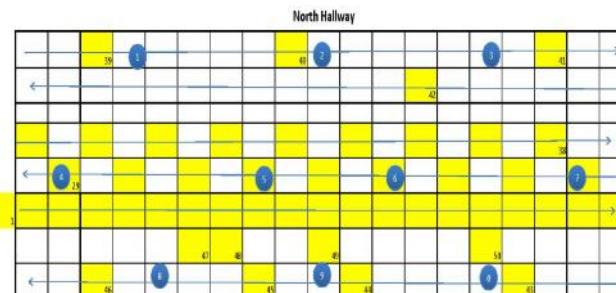
Rome, NY

39	5/17/2013	7:48:54 PM	4	233	S	1	Room 25
40	5/17/2013	7:50:01 PM	5	211	S	1	Room 25
41	5/17/2013	7:51:08 PM	6	180	S	1	Room 25
42	5/17/2013	7:52:14 PM	4	205	S	1	Room 25
43	5/16/2013	3:00:38 PM	10	353	S	1	Room 25
44	5/16/2013	3:01:46 PM	4	359	S	1	Room 25
45	5/16/2013	3:02:51 PM	5	375	S	1	Room 25
46	5/16/2013	3:03:56 PM	4	338	S	1	Room 25
47	5/16/2013	3:05:03 PM	9	408	S	1	Room 25
48	5/16/2013	3:06:08 PM	3	374	S	1	Room 25
49	5/16/2013	3:07:14 PM	4	351	S	1	Room 25
50	5/16/2013	3:08:20 PM	6	312	S	1	Room 25
51	5/16/2013	3:09:26 PM	7	335	S	1	Room 25
52	5/16/2013	3:11:03 PM	3	346	S	1	Room 25
53	5/16/2013	3:12:12 PM	4	351	S	1	Room 25
54	5/16/2013	3:13:18 PM	4	357	S	1	Room 25
55	5/16/2013	3:14:24 PM	4	356	S	1	Room 25
56	5/16/2013	3:15:29 PM	5	384	S	1	Room 25
57	5/16/2013	3:16:35 PM	5	372	S	1	Room 25
58	5/16/2013	3:17:41 PM	14	507	S	1	Room 25
59	5/16/2013	3:18:56 PM	13	499	S	1	Room 25
60	5/16/2013	3:20:01 PM	6	360	S	1	Room 25
61	5/16/2013	3:21:06 PM	2	353	S	1	Room 25
62	5/16/2013	3:22:13 PM	5	391	S	1	Room 25
63	5/16/2013	3:23:18 PM	51	654	S	1	Room 25
64	5/16/2013	3:24:45 PM	3	365	S	1	Room 25
65	5/16/2013	3:25:50 PM	5	355	S	1	Room 25
66	5/16/2013	3:26:56 PM	6	369	S	1	Room 25
67	5/16/2013	3:28:02 PM	11	403	S	1	Room 25
68	5/16/2013	3:29:07 PM	12	417	S	1	Room 25
69	5/16/2013	3:30:13 PM	22	542	S	1	Room 25
70	5/16/2013	3:31:34 PM	14	532	S	1	Room 25

**Average** 6 352



Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument				Survey Instrument					
Reviewed by :		Location	North Hallway	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93		
Date	5/16 - 5/17/2013	Survey Unit ID	Class 2	Serial #	1136			Serial #	276991	Serial #	245583		
				Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013		
Diagram				a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240		
North Hallway				a Efficiency	20%	b/g Efficiency	35%	a Efficiency	27%	b/g Efficiency	22%		
Removable Measurements (Smears)								Direct Measurements					
Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria	
	alpha	beta	alpha	beta	( <sup>(1)</sup> )100	1,000		alpha	beta	alpha	beta	500	5,000
1	0	0.98	0	1	Go	Go	1	14	331	22	410	Go	Go
2	0	2.95	0	6	Go	Go	2	7	328	0	396	Go	Go
3	0	3.93	0	9	Go	Go	3	7	228	0	0	Go	Go
4	0	0.98	0	1	Go	Go	4	6	256	0	72	Go	Go
5	0	4.92	0	12	Go	Go	5	14	342	22	459	Go	Go
6	0	0.98	0	1	Go	Go	6	7	353	0	509	Go	Go
7	0.98	2.95	5	6	Go	Go	7	15	334	26	423	Go	Go
8	0	0.98	0	1	Go	Go	8	9	316	4	342	Go	Go
9	0	0.98	0	1	Go	Go	9	14	280	22	180	Go	Go
10	0	0	0	0	Go	Go	10	8	261	0	95	Go	Go
3 (QC)	0	3	0	5	Go	Go	3 (QC)	9	226	4	0	Go	Go
Limits:								Limits:					
500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation.								500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation.					
(1) Limit set at 20% for removable.								5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation.					
1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.								(QC) = Quality Control Sample					



Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	17	α Eff.	27%		
β.γ Bkg	344	β,γ Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count	Time	Location
1	5/17/2013	8:13:34 AM	7	327	S	1		North Hallway
2	5/17/2013	8:15:06 AM	7	325	S	1		North Hallway
3	5/17/2013	8:16:17 AM	8	278	S	1		North Hallway
4	5/17/2013	8:17:21 AM	3	306	S	1		North Hallway
5	5/17/2013	8:18:27 AM	6	362	S	1		North Hallway
6	5/17/2013	8:20:20 AM	8	317	S	1		North Hallway
7	5/17/2013	8:21:47 AM	10	334	S	1		North Hallway
8	5/17/2013	8:22:53 AM	11	313	S	1		North Hallway
9	5/17/2013	8:23:59 AM	12	541	S	1		North Hallway
10	5/17/2013	8:25:05 AM	12	370	S	1		North Hallway
11	5/17/2013	8:26:11 AM	9	323	S	1		North Hallway
12	5/17/2013	8:27:16 AM	7	365	S	1		North Hallway
13	5/17/2013	8:28:21 AM	6	331	S	1		North Hallway
14	5/17/2013	8:29:26 AM	6	337	S	1		North Hallway
15	5/17/2013	8:30:40 AM	8	402	S	1		North Hallway
16	5/17/2013	8:31:47 AM	10	359	S	1		North Hallway
17	5/17/2013	8:34:25 AM	4	329	S	1		North Hallway
18	5/17/2013	8:35:34 AM	5	291	S	1		North Hallway
19	5/17/2013	8:36:44 AM	4	331	S	1		North Hallway
20	5/17/2013	8:37:50 AM	4	327	S	1		North Hallway
21	5/17/2013	8:39:13 AM	1	318	S	1		North Hallway
22	5/17/2013	10:12:39 AM	5	304	S	1		North Hallway
23	5/17/2013	10:14:15 AM	3	314	S	1		North Hallway
24	5/17/2013	10:16:36 AM	6	296	S	1		North Hallway
25	5/17/2013	10:17:42 AM	5	332	S	1		North Hallway
26	5/17/2013	10:18:58 AM	4	297	S	1		North Hallway
27	5/17/2013	2:37:12 PM	6	317	S	1		North Hallway
28	5/17/2013	2:38:19 PM	1	309	S	1		North Hallway
29	5/17/2013	2:39:25 PM	3	327	S	1		North Hallway
30	5/17/2013	2:40:31 PM	2	319	S	1		North Hallway
31	5/17/2013	2:41:39 PM	3	309	S	1		North Hallway
32	5/17/2013	2:42:45 PM	4	325	S	1		North Hallway
33	5/17/2013	2:43:50 PM	3	334	S	1		North Hallway
34	5/17/2013	2:44:56 PM	1	327	S	1		North Hallway
35	5/17/2013	2:46:01 PM	6	313	S	1		North Hallway
36	5/17/2013	2:49:02 PM	2	314	S	1		North Hallway
37	5/17/2013	2:50:13 PM	3	340	S	1		North Hallway
38	5/17/2013	2:51:39 PM	0	379	S	1		North Hallway

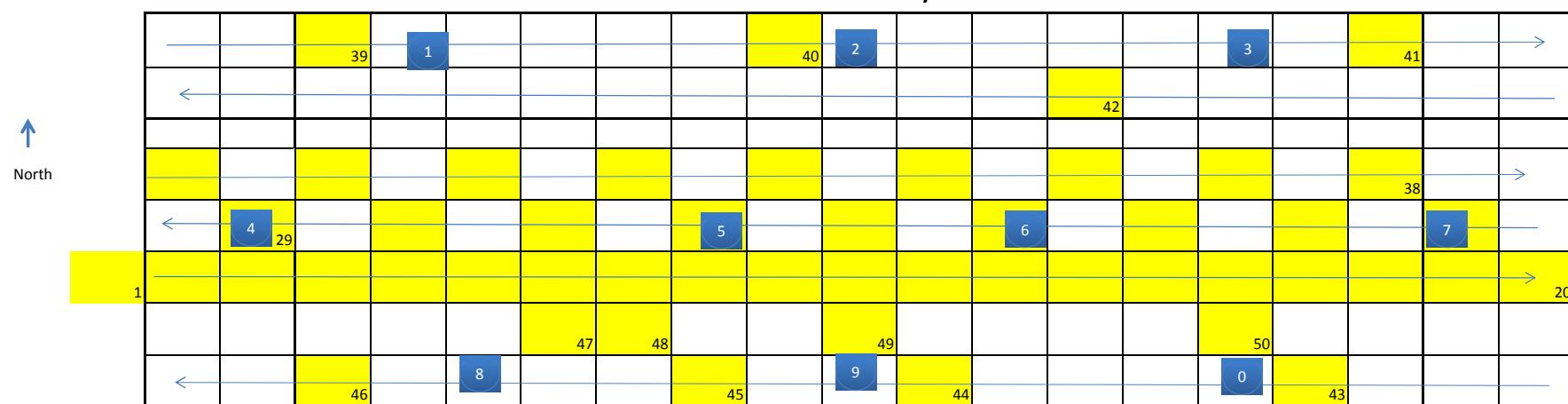
Final Status Survey  
Building 104

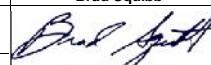
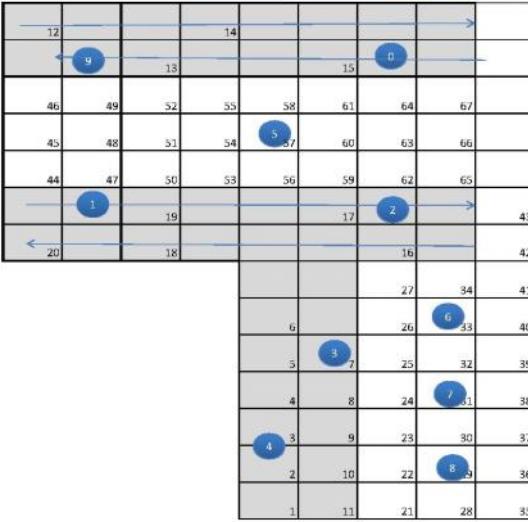
Solutient Technologies, LLC

Rome, NY

39	5/18/2013	11:52:17 AM	10	200	S	1	North Hallway
40	5/18/2013	11:53:27 AM	8	187	S	1	North Hallway
41	5/18/2013	11:54:33 AM	7	207	S	1	North Hallway
42	5/18/2013	11:55:39 AM	5	189	S	1	North Hallway
43	5/18/2013	11:56:45 AM	10	345	S	1	North Hallway
44	5/18/2013	11:57:52 AM	6	358	S	1	North Hallway
45	5/18/2013	11:59:04 AM	5	287	S	1	North Hallway
46	5/18/2013	12:00:14 PM	6	335	S	1	North Hallway
47	5/18/2013	12:01:31 PM	4	284	S	1	North Hallway
48	5/18/2013	12:02:36 PM	6	296	S	1	North Hallway
49	5/18/2013	12:03:48 PM	3	297	S	1	North Hallway
50	5/18/2013	12:04:54 PM	8	306	S	1	North Hallway
<b>Average</b>			<b>6</b>	<b>319</b>			

North Hallway



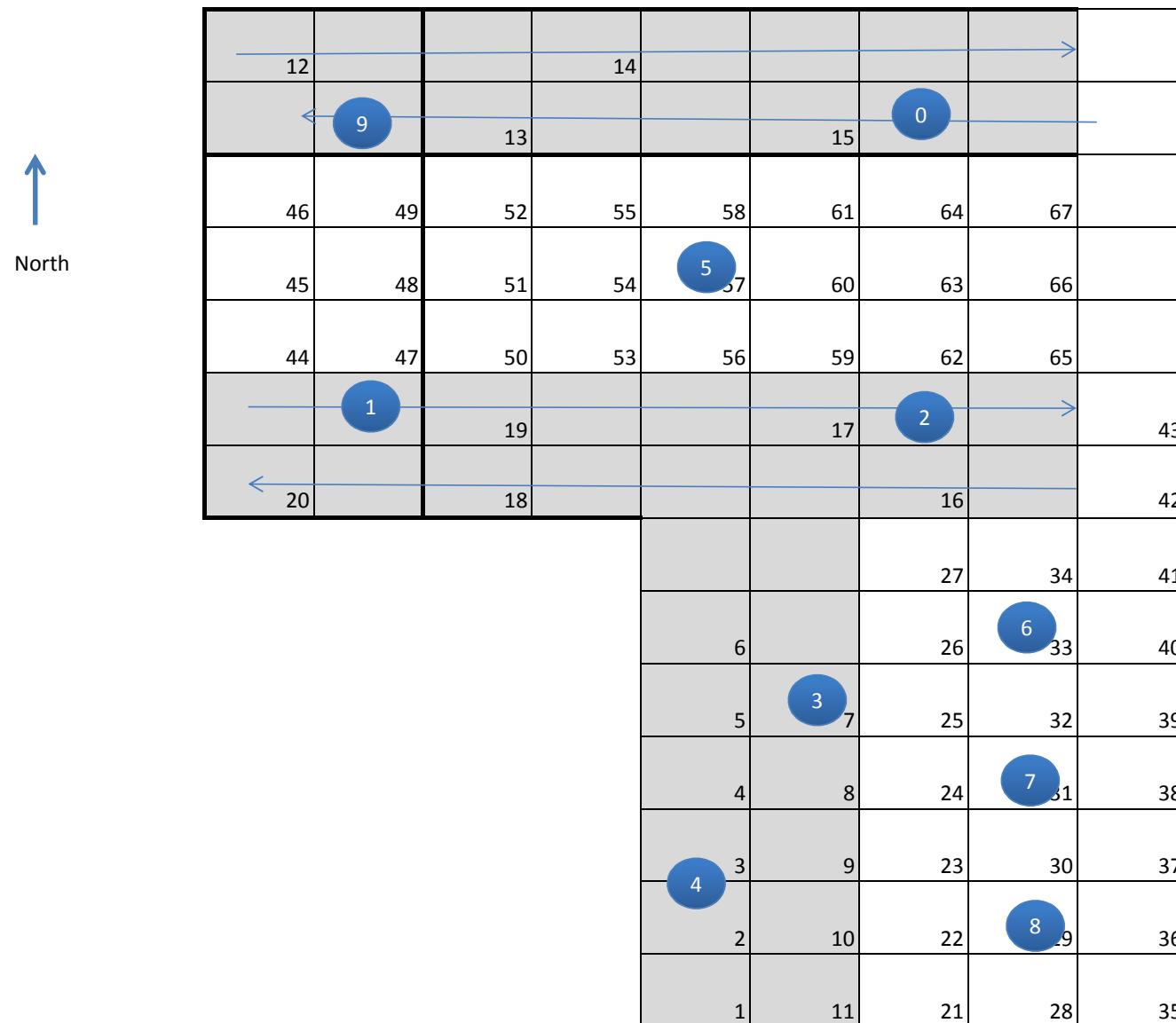
Name	Brad Squibb	Project	Rome, NY - Bldg 104		Lab Counting Instrument				Survey Instrument				
Reviewed by :		Location	NE Hallway- Room 30		Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93	
Date	5/16 - 5/17/2013	Survey Unit ID	Class 2		Serial #	1136			Serial #	276991	Serial #	245583	
					Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013	
			a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240			
			a Efficiency	20%	b/g Efficiency	35%	a Efficiency	27%	b/g Efficiency	22%			
Diagram										Removable Measurements (Smears)			
Northeast Hallway and Room 30										Direct Measurements			
 North													
	Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria
alpha		beta	alpha	beta	( <sup>(1)</sup> )100	1,000	alpha		beta	alpha	beta	500	5,000
1	0	1.97	0	3	Go	Go	1	1	221	0	0	Go	Go
2	0	1.97	0	3	Go	Go	2	8	212	0	0	Go	Go
3	0	0.98	0	1	Go	Go	3	5	184	0	0	Go	Go
4	0.98	0	5	0	Go	Go	4	7	303	0	284	Go	Go
5	0	0.98	0	1	Go	Go	5	10	340	7	450	Go	Go
6	0.98	0.98	5	1	Go	Go	6	14	331	22	410	Go	Go
7	0.98	0.98	5	1	Go	Go	7	13	354	18	514	Go	Go
8	0	1.97	0	3	Go	Go	8	2	219	0	0	Go	Go
9	0	1.97	0	3	Go	Go	9	8	315	0	338	Go	Go
10	0	3.93	0	9	Go	Go	10	6	341	0	455	Go	Go
3 (QC)	0	1	0	1	Go	Go	3 (QC)	5	201	0	0	Go	Go
<b>Limits:</b> 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. <sup>(1)</sup> Limit set at 20% for removable. 1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.										<b>Limits:</b> 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. 5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation. (QC) = Quality Control Sample			

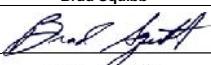
Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	17	α Eff.	27%		
β Bkg	344	β Eff.	22%		

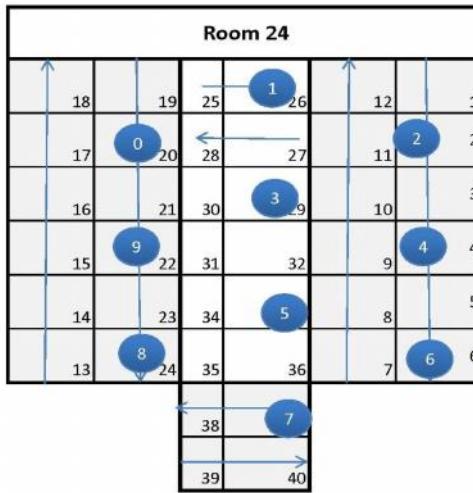
Sample	Date	Time	Alpha	Beta	SR	Count	Time	Location
1	5/18/2013	8:05:15 AM	7	235	S	1		NE Hallway / Rm 30
2	5/18/2013	8:06:27 AM	8	230	S	1		NE Hallway / Rm 30
3	5/18/2013	8:07:33 AM	5	237	S	1		NE Hallway / Rm 30
4	5/18/2013	8:08:39 AM	6	236	S	1		NE Hallway / Rm 30
5	5/18/2013	8:09:55 AM	7	227	S	1		NE Hallway / Rm 30
6	5/18/2013	8:11:03 AM	6	222	S	1		NE Hallway / Rm 30
7	5/18/2013	8:12:08 AM	5	230	S	1		NE Hallway / Rm 30
8	5/18/2013	8:13:37 AM	6	253	S	1		NE Hallway / Rm 30
9	5/18/2013	8:14:44 AM	2	259	S	1		NE Hallway / Rm 30
10	5/18/2013	8:15:49 AM	7	257	S	1		NE Hallway / Rm 30
11	5/18/2013	8:16:55 AM	5	229	S	1		NE Hallway / Rm 30
12	5/18/2013	8:19:55 AM	6	288	S	1		NE Hallway / Rm 30
13	5/18/2013	8:21:03 AM	6	250	S	1		NE Hallway / Rm 30
14	5/18/2013	8:22:11 AM	12	337	S	1		NE Hallway / Rm 30
15	5/18/2013	8:23:18 AM	7	247	S	1		NE Hallway / Rm 30
16	5/18/2013	8:24:31 AM	6	340	S	1		NE Hallway / Rm 30
17	5/18/2013	8:25:38 AM	9	367	S	1		NE Hallway / Rm 30
18	5/18/2013	8:26:45 AM	9	338	S	1		NE Hallway / Rm 30
19	5/18/2013	8:27:51 AM	13	327	S	1		NE Hallway / Rm 30
20	5/18/2013	8:28:56 AM	8	352	S	1		NE Hallway / Rm 30
21	5/18/2013	9:01:48 AM	6	318	S	1		NE Hallway / Rm 30
22	5/18/2013	9:02:53 AM	7	335	S	1		NE Hallway / Rm 30
23	5/18/2013	9:03:59 AM	11	333	S	1		NE Hallway / Rm 30
24	5/18/2013	9:05:05 AM	13	323	S	1		NE Hallway / Rm 30
25	5/18/2013	9:06:10 AM	5	369	S	1		NE Hallway / Rm 30
26	5/18/2013	9:07:16 AM	7	308	S	1		NE Hallway / Rm 30
27	5/18/2013	9:08:21 AM	10	344	S	1		NE Hallway / Rm 30
28	5/18/2013	9:09:32 AM	8	364	S	1		NE Hallway / Rm 30
29	5/18/2013	9:10:37 AM	11	303	S	1		NE Hallway / Rm 30
30	5/18/2013	9:11:42 AM	11	338	S	1		NE Hallway / Rm 30
31	5/18/2013	9:12:48 AM	3	347	S	1		NE Hallway / Rm 30
32	5/18/2013	9:13:54 AM	4	325	S	1		NE Hallway / Rm 30
33	5/18/2013	9:14:59 AM	4	338	S	1		NE Hallway / Rm 30
34	5/18/2013	9:16:07 AM	6	339	S	1		NE Hallway / Rm 30
35	5/18/2013	9:23:34 AM	4	376	S	1		NE Hallway / Rm 30
36	5/18/2013	9:25:07 AM	6	332	S	1		NE Hallway / Rm 30
37	5/18/2013	9:26:12 AM	5	354	S	1		NE Hallway / Rm 30
38	5/18/2013	9:28:03 AM	9	360	S	1		NE Hallway / Rm 30
39	5/18/2013	9:29:09 AM	11	376	S	1		NE Hallway / Rm 30
40	5/18/2013	9:30:15 AM	8	333	S	1		NE Hallway / Rm 30
41	5/18/2013	9:31:20 AM	8	323	S	1		NE Hallway / Rm 30
42	5/18/2013	9:32:26 AM	6	349	S	1		NE Hallway / Rm 30
43	5/18/2013	9:33:31 AM	4	336	S	1		NE Hallway / Rm 30
44	5/18/2013	9:45:28 AM	14	309	S	1		NE Hallway / Rm 30
45	5/18/2013	9:47:11 AM	16	308	S	1		NE Hallway / Rm 30
46	5/18/2013	9:48:16 AM	10	315	S	1		NE Hallway / Rm 30
47	5/18/2013	9:49:32 AM	12	347	S	1		NE Hallway / Rm 30
48	5/18/2013	9:50:40 AM	18	342	S	1		NE Hallway / Rm 30
49	5/18/2013	9:51:55 AM	13	322	S	1		NE Hallway / Rm 30

50	5/18/2013	9:53:04 AM	13	366	S	1	NE Hallway / Rm 30
51	5/18/2013	9:54:21 AM	6	367	S	1	NE Hallway / Rm 30
52	5/18/2013	9:55:38 AM	12	373	S	1	NE Hallway / Rm 30
53	5/18/2013	11:20:19 AM	7	340	S	1	NE Hallway / Rm 30
54	5/18/2013	11:21:46 AM	9	320	S	1	NE Hallway / Rm 30
55	5/18/2013	11:22:54 AM	13	334	S	1	NE Hallway / Rm 30
56	5/18/2013	11:23:58 AM	9	316	S	1	NE Hallway / Rm 30
57	5/18/2013	11:25:05 AM	15	354	S	1	NE Hallway / Rm 30
58	5/18/2013	11:26:10 AM	9	311	S	1	NE Hallway / Rm 30
59	5/18/2013	11:32:22 AM	8	314	S	1	NE Hallway / Rm 30
60	5/18/2013	11:33:30 AM	8	334	S	1	NE Hallway / Rm 30
61	5/18/2013	11:34:36 AM	7	324	S	1	NE Hallway / Rm 30
62	5/18/2013	11:35:41 AM	9	350	S	1	NE Hallway / Rm 30
63	5/18/2013	11:36:56 AM	9	343	S	1	NE Hallway / Rm 30
64	5/18/2013	11:38:31 AM	8	323	S	1	NE Hallway / Rm 30
65	5/18/2013	11:39:42 AM	9	344	S	1	NE Hallway / Rm 30
66	5/18/2013	11:40:48 AM	9	328	S	1	NE Hallway / Rm 30
67	5/18/2013	11:41:52 AM	10	304	S	1	NE Hallway / Rm 30
<b>Average</b>			<b>8</b>	<b>317</b>			

**Northeast Hallway and Room 30**



Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument				Survey Instrument				
Reviewed by :		Location	Room 24	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93	
Date	5/16 - 5/17/2013	Survey Unit ID	Class 1	Serial #	1136			Serial #	276991	Serial #	245583	
				Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013	
Diagram				a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240	
				a Efficiency	20%	b/g Efficiency	35%	a Efficiency	27%	b/g Efficiency	22%	
Removable Measurements (Smears)								Direct Measurements				
Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria
	alpha	beta	alpha	beta	( <sup>(1)</sup> ) 100	1,000		alpha	beta	alpha	beta	
1	0	22.62	0	62	Go	Go	1	19	621	40	1716	Go Go
2	0.98	4.92	5	12	Go	Go	2	1	368	0	577	Go Go
3	0	5.9	0	15	Go	Go	3	13	568	18	1477	Go Go
4	0	9.84	0	26	Go	Go	4	4	363	0	554	Go Go
5	0	0.98	0	1	Go	Go	5	5	353	0	509	Go Go
6	0	0	0	0	Go	Go	6	2	297	0	257	Go Go
7	0	1.97	0	3	Go	Go	7	4	386	0	658	Go Go
8	0	0	0	0	Go	Go	8	3	391	0	680	Go Go
9	0.98	0	5	0	Go	Go	9	3	334	0	423	Go Go
10	0.98	0.98	5	1	Go	Go	10	8	329	0	401	Go Go
3 (QC)	0	7	0	18	Go	Go	3 (QC)	17	548	33	1387	Go Go
Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. <sup>(1)</sup> Limit set at 20% for removable. 1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.								Limits: 500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation. 5,000 dpm/100cm <sup>2</sup> (fixed plus removable) for beta particulate radiation. (QC) = Quality Control Sample				



Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	17	α Eff.	27%		
β.γ Bkg	344	β,γ Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count	Time	Location
1	5/17/2013	6:47:55 PM	3	310	S	1		Room 24
2	5/17/2013	6:49:00 PM	1	382	S	1		Room 24
3	5/17/2013	6:50:11 PM	7	341	S	1		Room 24
4	5/17/2013	6:51:55 PM	3	321	S	1		Room 24
5	5/17/2013	6:53:01 PM	4	272	S	1		Room 24
6	5/17/2013	6:54:07 PM	7	293	S	1		Room 24
7	5/17/2013	6:56:12 PM	3	352	S	1		Room 24
8	5/17/2013	6:57:20 PM	4	345	S	1		Room 24
9	5/17/2013	6:58:26 PM	6	343	S	1		Room 24
10	5/17/2013	6:59:32 PM	2	349	S	1		Room 24
11	5/17/2013	7:00:37 PM	4	337	S	1		Room 24
12	5/17/2013	7:01:43 PM	1	401	S	1		Room 24
13	5/17/2013	7:02:49 PM	5	391	S	1		Room 24
14	5/17/2013	7:03:54 PM	2	360	S	1		Room 24
15	5/17/2013	7:05:00 PM	3	408	S	1		Room 24
16	5/17/2013	7:06:36 PM	3	377	S	1		Room 24
17	5/17/2013	7:08:03 PM	1	357	S	1		Room 24
18	5/17/2013	7:09:08 PM	3	367	S	1		Room 24
19	5/17/2013	7:11:22 PM	2	366	S	1		Room 24
20	5/17/2013	7:12:28 PM	1	325	S	1		Room 24
21	5/17/2013	7:13:34 PM	3	360	S	1		Room 24
22	5/17/2013	7:14:41 PM	4	332	S	1		Room 24
23	5/17/2013	7:17:30 PM	5	361	S	1		Room 24
24	5/17/2013	7:18:36 PM	3	407	S	1		Room 24
25	5/17/2013	3:18:53 PM	5	393	S	1		Room 24
26	5/17/2013	3:19:58 PM	8	538	S	1		Room 24
27	5/17/2013	3:21:05 PM	5	522	S	1		Room 24
28	5/17/2013	3:22:50 PM	9	414	S	1		Room 24
29	5/17/2013	3:23:55 PM	16	588	S	1		Room 24
30	5/17/2013	3:25:00 PM	48	807	S	1		Room 24
31	5/17/2013	3:28:10 PM	11	449	S	1		Room 24
32	5/17/2013	3:29:18 PM	8	500	S	1		Room 24
33	5/17/2013	3:30:23 PM	11	487	S	1		Room 24
34	5/17/2013	3:31:29 PM	5	500	S	1		Room 24
35	5/17/2013	4:13:42 PM	11	519	S	1		Room 24
36	5/17/2013	4:14:52 PM	14	485	S	1		Room 24
37	5/17/2013	4:16:01 PM	11	493	S	1		Room 24

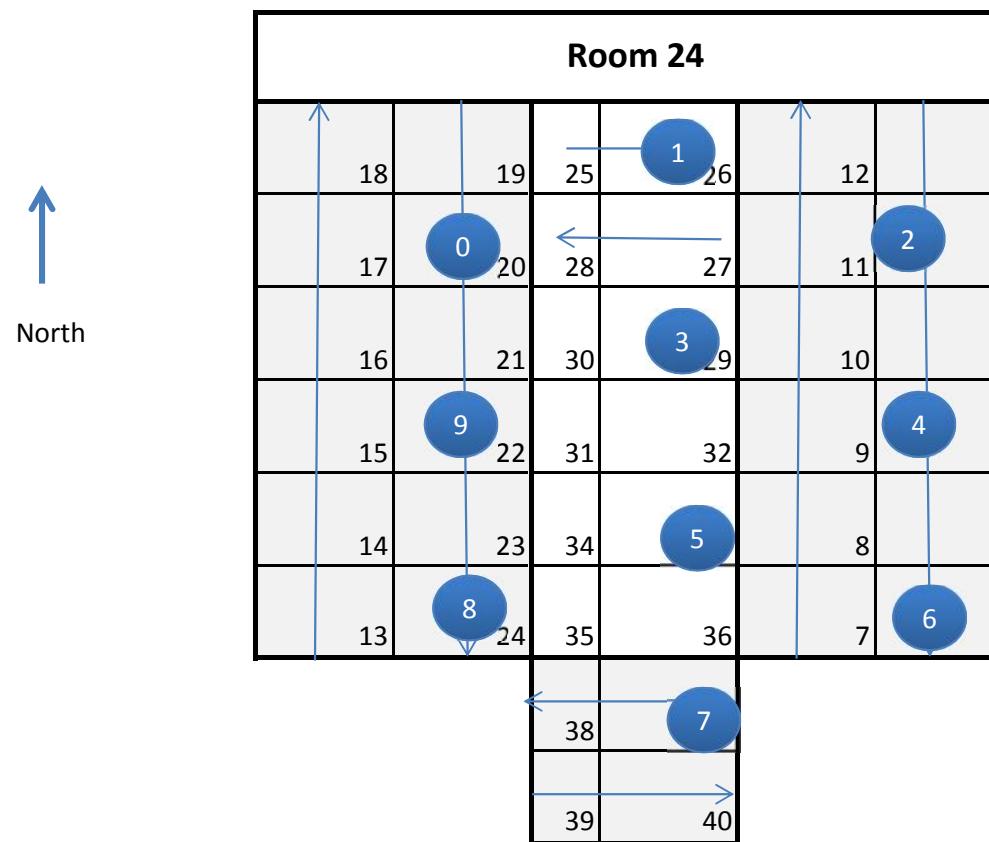
Final Status Survey  
Building 104

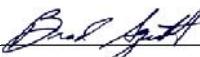
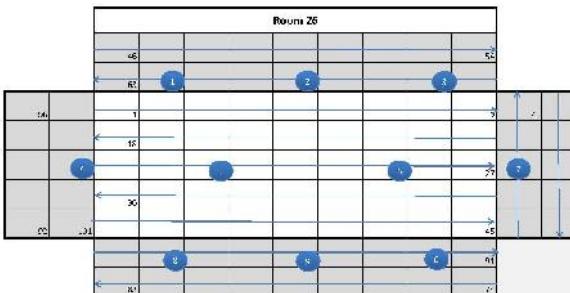
Solutient Technologies, LLC

Rome, NY

38	5/17/2013	4:17:14 PM	17	594	S	1	Room 24
39	5/17/2013	4:19:05 PM	19	598	S	1	Room 24
40	5/17/2013	4:20:10 PM	5	513	S	1	Room 24
25	5/17/2013	3:18:53 PM	5	393	S	1	Room 24
26	5/17/2013	3:19:58 PM	8	538	S	1	Room 24
27	5/17/2013	3:21:05 PM	5	522	S	1	Room 24
28	5/17/2013	3:22:50 PM	9	414	S	1	Room 24
29	5/17/2013	3:23:55 PM	16	588	S	1	Room 24
30	5/17/2013	3:25:00 PM	48	807	S	1	Room 24
31	5/17/2013	3:28:10 PM	11	449	S	1	Room 24
32	5/17/2013	3:29:18 PM	8	500	S	1	Room 24
33	5/17/2013	3:30:23 PM	11	487	S	1	Room 24
34	5/17/2013	3:31:29 PM	5	500	S	1	Room 24
35	5/17/2013	4:13:42 PM	11	519	S	1	Room 24
36	5/17/2013	4:14:52 PM	14	485	S	1	Room 24
37	5/17/2013	4:16:01 PM	11	493	S	1	Room 24
38	5/17/2013	4:17:14 PM	17	594	S	1	Room 24
39	5/17/2013	4:19:05 PM	19	598	S	1	Room 24
40	5/17/2013	4:20:10 PM	5	513	S	1	Room 24

Average                           **9**                           **451**



Name	Brad Squibb	Project	Rome, NY - Bldg 104	Lab Counting Instrument				Survey Instrument																																																																																																																																																																																																																																																			
Reviewed by :		Location	Room 26	Meter	Protean	Model #	WPC 9550	Meter	2360	Probe	43-93																																																																																																																																																																																																																																																
Date	5/16 - 5/17/2013	Survey Unit ID	Class 1	Serial #	1136			Serial #	276991	Serial #	245583																																																																																																																																																																																																																																																
				Cal. Due	9/25/2013			Cal. Due	8/4/2013	Cal. Due	8/4/2013																																																																																																																																																																																																																																																
		a bkg.	0	b/g bkg.	0.8	a bkg.	8	b/g bkg.	240																																																																																																																																																																																																																																																		
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				<table border="1"> <thead> <tr> <th rowspan="2">Location ID</th> <th colspan="2">cpm/100cm<sup>2</sup></th> <th colspan="2">dpm/100cm<sup>2</sup></th> <th colspan="2">Criteria</th> <th rowspan="2">Location ID</th> <th colspan="2">cpm/100cm<sup>2</sup></th> <th colspan="2">dpm/100cm<sup>2</sup></th> <th colspan="2">Criteria</th> </tr> <tr> <th>alpha</th> <th>beta</th> <th>alpha</th> <th>beta</th> <th>(<sup>(1)</sup>) 100</th> <th>1,000</th> <th>alpha</th> <th>beta</th> <th>alpha</th> <th>beta</th> <th>500</th> <th>5,000</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0</td> <td>7.87</td> <td>0</td> <td>20</td> <td>Go</td> <td>Go</td> <td>1</td> <td>4</td> <td>332</td> <td>0</td> <td>414</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>2</td> <td>0</td> <td>3.93</td> <td>0</td> <td>9</td> <td>Go</td> <td>Go</td> <td>2</td> <td>12</td> <td>264</td> <td>15</td> <td>108</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>3</td> <td>0</td> <td>0.98</td> <td>0</td> <td>1</td> <td>Go</td> <td>Go</td> <td>3</td> <td>6</td> <td>354</td> <td>0</td> <td>514</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>4</td> <td>0</td> <td>0.98</td> <td>0</td> <td>1</td> <td>Go</td> <td>Go</td> <td>4</td> <td>6</td> <td>264</td> <td>0</td> <td>108</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>5</td> <td>0.98</td> <td>2.95</td> <td>5</td> <td>6</td> <td>Go</td> <td>Go</td> <td>5</td> <td>4</td> <td>340</td> <td>0</td> <td>450</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>6</td> <td>0</td> <td>0.98</td> <td>0</td> <td>1</td> <td>Go</td> <td>Go</td> <td>6</td> <td>12</td> <td>384</td> <td>15</td> <td>649</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>7</td> <td>0</td> <td>1.97</td> <td>0</td> <td>3</td> <td>Go</td> <td>Go</td> <td>7</td> <td>2</td> <td>320</td> <td>0</td> <td>360</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>8</td> <td>0</td> <td>0.98</td> <td>0</td> <td>1</td> <td>Go</td> <td>Go</td> <td>8</td> <td>8</td> <td>368</td> <td>0</td> <td>577</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>9</td> <td>0.98</td> <td>1.97</td> <td>5</td> <td>3</td> <td>Go</td> <td>Go</td> <td>9</td> <td>8</td> <td>316</td> <td>0</td> <td>342</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>10</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>Go</td> <td>Go</td> <td>10</td> <td>6</td> <td>378</td> <td>0</td> <td>622</td> <td>Go</td> <td>Go</td> </tr> <tr> <td>3 (QC)</td> <td>0</td> <td>2</td> <td>0</td> <td>3</td> <td>Go</td> <td>Go</td> <td>3 (QC)</td> <td>2</td> <td>324</td> <td>0</td> <td>378</td> <td>Go</td> <td>Go</td> </tr> <tr> <td colspan="12">Limits:</td> </tr> <tr> <td colspan="12">500 dpm/100cm<sup>2</sup> total (fixed plus removable) for alpha particulate radiation.</td> </tr> <tr> <td colspan="12">(1) Limit set at 20% for removable.</td> </tr> <tr> <td colspan="12">1,000 dpm/100cm<sup>2</sup> removable for beta particulate radiation.</td> </tr> <tr> <td colspan="12">(QC) = Quality Control Sample</td> </tr> </tbody> </table>								Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		Location ID	cpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		Criteria		alpha	beta	alpha	beta	( <sup>(1)</sup> ) 100	1,000	alpha	beta	alpha	beta	500	5,000	1	0	7.87	0	20	Go	Go	1	4	332	0	414	Go	Go	2	0	3.93	0	9	Go	Go	2	12	264	15	108	Go	Go	3	0	0.98	0	1	Go	Go	3	6	354	0	514	Go	Go	4	0	0.98	0	1	Go	Go	4	6	264	0	108	Go	Go	5	0.98	2.95	5	6	Go	Go	5	4	340	0	450	Go	Go	6	0	0.98	0	1	Go	Go	6	12	384	15	649	Go	Go	7	0	1.97	0	3	Go	Go	7	2	320	0	360	Go	Go	8	0	0.98	0	1	Go	Go	8	8	368	0	577	Go	Go	9	0.98	1.97	5	3	Go	Go	9	8	316	0	342	Go	Go	10	0	0	0	0	Go	Go	10	6	378	0	622	Go	Go	3 (QC)	0	2	0	3	Go	Go	3 (QC)	2	324	0	378	Go	Go	Limits:												500 dpm/100cm <sup>2</sup> total (fixed plus removable) for alpha particulate radiation.												(1) Limit set at 20% for removable.												1,000 dpm/100cm <sup>2</sup> removable for beta particulate radiation.												(QC) = Quality Control Sample											
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Scan Instrument					
Meter	2360	Serial#	276991	Cal. Due	8/4/2013
Probe	43-93	Serial#	245583	Cal. Due	8/4/2013
α Bkg	17	α Eff.	27%		
β.γ Bkg	344	β,γ Eff.	22%		

Sample	Date	Time	Alpha	Beta	SR	Count	Time	Location
1	5/18/2013	5:39:31 PM	5	408	S	1		Room 26
2	5/18/2013	5:40:38 PM	13	368	S	1		Room 26
3	5/18/2013	5:41:43 PM	19	489	S	1		Room 26
4	5/18/2013	5:42:48 PM	9	437	S	1		Room 26
5	5/18/2013	5:43:55 PM	17	421	S	1		Room 26
6	5/18/2013	5:45:00 PM	7	334	S	1		Room 26
7	5/18/2013	5:46:05 PM	10	383	S	1		Room 26
8	5/18/2013	5:47:10 PM	10	415	S	1		Room 26
9	5/18/2013	5:48:16 PM	10	339	S	1		Room 26
10	5/18/2013	5:49:23 PM	6	313	S	1		Room 26
11	5/18/2013	5:50:29 PM	8	373	S	1		Room 26
12	5/18/2013	5:51:34 PM	10	420	S	1		Room 26
13	5/18/2013	5:52:40 PM	7	365	S	1		Room 26
14	5/18/2013	5:53:46 PM	10	419	S	1		Room 26
15	5/18/2013	5:54:52 PM	16	567	S	1		Room 26
16	5/18/2013	5:55:58 PM	13	468	S	1		Room 26
17	5/18/2013	5:57:04 PM	10	422	S	1		Room 26
18	5/18/2013	5:58:09 PM	4	420	S	1		Room 26
19	5/18/2013	5:59:13 PM	16	457	S	1		Room 26
20	5/18/2013	6:00:19 PM	15	435	S	1		Room 26
21	5/18/2013	6:01:25 PM	7	473	S	1		Room 26
22	5/18/2013	6:02:36 PM	16	483	S	1		Room 26
23	5/18/2013	6:03:40 PM	7	454	S	1		Room 26
24	5/18/2013	6:04:46 PM	6	375	S	1		Room 26
25	5/18/2013	6:05:56 PM	8	407	S	1		Room 26
26	5/18/2013	6:07:02 PM	10	407	S	1		Room 26
27	5/18/2013	6:08:08 PM	11	387	S	1		Room 26
28	5/18/2013	6:09:13 PM	11	372	S	1		Room 26
29	5/18/2013	6:10:19 PM	8	408	S	1		Room 26
30	5/18/2013	6:11:25 PM	13	403	S	1		Room 26
31	5/18/2013	6:12:30 PM	10	380	S	1		Room 26
32	5/18/2013	6:13:36 PM	14	487	S	1		Room 26
33	5/18/2013	6:14:42 PM	12	588	S	1		Room 26
34	5/18/2013	6:15:48 PM	11	443	S	1		Room 26
35	5/18/2013	6:16:53 PM	14	673	S	1		Room 26
36	5/18/2013	6:17:59 PM	32	513	S	1		Room 26
37	5/18/2013	6:19:39 PM	19	472	S	1		Room 26

Final Status Survey  
Building 104

## Solutient Technologies, LLC

Rome, NY

38	5/18/2013	6:20:44 PM	14	508	S	1	Room 26
39	5/18/2013	6:21:50 PM	14	431	S	1	Room 26
40	5/18/2013	6:22:55 PM	10	380	S	1	Room 26
41	5/18/2013	6:24:03 PM	12	432	S	1	Room 26
42	5/18/2013	6:25:11 PM	9	363	S	1	Room 26
43	5/18/2013	6:26:17 PM	6	412	S	1	Room 26
44	5/18/2013	6:27:24 PM	5	343	S	1	Room 26
45	5/18/2013	6:28:31 PM	14	381	S	1	Room 26
46	5/18/2013	6:41:24 PM	4	241	S	1	Room 26
47	5/18/2013	6:42:51 PM	10	298	S	1	Room 26
48	5/18/2013	6:43:25 PM	4	384	S	1	Room 26
49	5/18/2013	6:44:01 PM	6	410	S	1	Room 26
50	5/18/2013	6:44:36 PM	12	326	S	1	Room 26
51	5/18/2013	6:45:10 PM	6	246	S	1	Room 26
52	5/18/2013	6:45:45 PM	4	300	S	1	Room 26
53	5/18/2013	6:46:20 PM	6	372	S	1	Room 26
54	5/18/2013	6:46:55 PM	4	280	S	1	Room 26
55	5/18/2013	6:47:29 PM	4	334	S	1	Room 26
56	5/18/2013	6:48:05 PM	4	350	S	1	Room 26
57	5/18/2013	6:48:41 PM	6	268	S	1	Room 26
58	5/18/2013	6:49:15 PM	8	258	S	1	Room 26
59	5/18/2013	6:49:51 PM	4	568	S	1	Room 26
60	5/18/2013	6:50:26 PM	4	754	S	1	Room 26
61	5/18/2013	6:53:02 PM	4	900	S	1	Room 26
62	5/18/2013	6:54:06 PM	8	374	S	1	Room 26
63	5/18/2013	6:54:42 PM	12	262	S	1	Room 26
64	5/18/2013	6:56:00 PM	2	290	S	1	Room 26
65	5/18/2013	6:56:35 PM	2	318	S	1	Room 26
66	5/18/2013	6:57:10 PM	0	320	S	1	Room 26
67	5/18/2013	6:57:45 PM	4	232	S	1	Room 26
68	5/18/2013	6:59:26 PM	4	314	S	1	Room 26
69	5/18/2013	7:00:01 PM	10	322	S	1	Room 26
70	5/18/2013	7:00:37 PM	8	282	S	1	Room 26
71	5/18/2013	7:01:12 PM	4	342	S	1	Room 26
72	5/18/2013	7:01:46 PM	4	380	S	1	Room 26
73	5/18/2013	7:02:21 PM	2	352	S	1	Room 26
74	5/18/2013	7:04:07 PM	4	322	S	1	Room 26
75	5/18/2013	7:04:42 PM	4	322	S	1	Room 26
76	5/18/2013	7:05:18 PM	6	380	S	1	Room 26
77	5/18/2013	7:05:54 PM	6	362	S	1	Room 26
78	5/18/2013	7:06:31 PM	6	286	S	1	Room 26
79	5/18/2013	7:07:07 PM	0	354	S	1	Room 26
80	5/18/2013	7:07:43 PM	0	370	S	1	Room 26
81	5/18/2013	7:08:22 PM	6	320	S	1	Room 26

# Final Status Survey Building 104

Solutient Technologies, LLC

Rome, NY

82	5/18/2013	7:08:58 PM	4	366	S	1	Room 26
83	5/18/2013	7:09:34 PM	4	960	S	1	Room 26
84	5/18/2013	7:10:39 PM	6	580	S	1	Room 26
85	5/18/2013	7:12:03 PM	12	610	S	1	Room 26
86	5/18/2013	7:12:38 PM	12	992	S	1	Room 26
87	5/18/2013	7:13:26 PM	6	334	S	1	Room 26
88	5/18/2013	7:14:00 PM	0	362	S	1	Room 26
89	5/18/2013	7:14:35 PM	6	362	S	1	Room 26
90	5/18/2013	7:15:10 PM	4	340	S	1	Room 26
91	5/18/2013	7:15:52 PM	6	204	S	1	Room 26
92	5/18/2013	7:16:26 PM	4	196	S	1	Room 26
93	5/18/2013	7:17:01 PM	8	178	S	1	Room 26
94	5/18/2013	7:21:26 PM	2	210	S	1	Room 26
95	5/18/2013	7:22:00 PM	4	222	S	1	Room 26
96	5/18/2013	7:22:35 PM	8	214	S	1	Room 26
97	5/18/2013	7:23:10 PM	6	258	S	1	Room 26
98	5/18/2013	7:23:46 PM	8	248	S	1	Room 26
99	5/18/2013	7:24:21 PM	4	222	S	1	Room 26
100	5/18/2013	7:24:57 PM	4	304	S	1	Room 26
101	5/18/2013	7:25:32 PM	8	1088	S	1	Room 26

↑  
North

