DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
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2007 FEB -7 AM 10:47
RECEIVED REGION 1

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U.S. Nuclear Regulatory Commission
Region 1, Nuclear Materials Safety Branch
Division of Nuclear Materials Safety
ATTN: Ms Betsy Ullrich
475 Allendale Road
King of Prussia, PA 19406-1415

Re: License STC-133

SUBJECT: Request for additional information (RAI) concerning application for amendment to license Control No. 139901, Docket No. 04000341

Dear Ms. Ullrich:

This letter is in response to your letter dated January 17, 2007, subject as above. Information is provided or described in the sequence of your letter:

1. All reference area and material data are now provided in the "Analysis Parameters" section of Appendix B, Revision 1.

2. The reference area static survey measurements are now provided for detector SHP380AB serial number 00176 in Appendix B, Revision 1.

3. The instrument background, efficiency, and standard deviation information is now provided for all instruments used in the survey in Appendix B, Revision 1.

To support the changes and additions described above, a revision to Appendix B was required. Further, Appendices D and E were also updated to account for editorial changes. The main report page 47 and page F-3 of Appendix F were also revised to account for these corrections and changes. These revisions are identified with "RAI Rev. 1" in the lower right footer on all pages. The main report page 47 also has a vertical line in the right margin to show the location of the changes. Please replace the main report page 47, page F-3 of Appendix F, and the previously submitted Appendices B, D, and E with those attached.

Printed on Recycled Paper

139901

NMSS/RGN1 MATERIALS-002

Should you have any questions regarding this letter, please contact me. You may also call Mr. Claude Wiblin, CHP, at (410) 923-4653. Mr. Wiblin is a representative of our contracted decommissioning firm, Chesapeake Nuclear Services, Inc.

Sincerely

Michael J. Pecullan
Radiation Safety Officer

Attachment

7.4 Results of Miscellaneous Bias and Duplicate Measurements

The FSSP required that survey technicians be afforded the opportunity to perform judgmental measurements in areas of highest potential (e.g., corners, seams between concrete pours, or base of support poles) based on professional judgment. This provides a qualitative level of confidence that no areas of elevated activity were missed by the random measurements and that there were no errors in area classification. The results are summarized in the tables below. Drawings and coordinates are provided in Appendix A. As all duplicate measurements have results with very low values and most below the MDC; comparison with measurements used for evaluating the survey unit is that they are the same value or small magnitude.

Table 23. SU Bias Static Measurements*

Survey Unit	N	Activity (αpm/100cm^2)				MDC (αpm/100cm^2)
		Avg.	Min.	Max.	Sigma	
DTFL1	15	-2	-17	20	12	37

* Reference Unit material background averages have been subtracted.

Table 24. SU Duplicate Static Measurements*

Survey Unit	N	Activity (αpm/100cm^2)				MDC (αpm/100cm^2)
		Avg.	Min.	Max.	Sigma	
1CFL1	15	-12	-44	42	22	37

* Reference Unit material background averages have been subtracted.

Table 25. SU Duplicate Smear Measurements*

Survey Unit	N	Net Activity (αpm/100cm^2)				MDC (αpm/100cm^2)
		Avg.	Min.	Max.	Sigma	
1CFL1	15	0	-2	3	2	17
3AFL1	15	1	-4	7	3	17
3EFL1	15	0	-2	3	1	17
3EFL4	15	1	-2	5	2	17
4CFL1	15	1	-2	5	2	17

*Only instrument background has been subtracted.

Table 26. SU Bias Smear Measurements*

Survey Unit	N	Net Activity (αpm/100cm^2)				MDC (αpm/100cm^2)
		Avg.	Min.	Max.	Sigma	
DTFL1	15	0	-2	3	2	17

*Only instrument background has been subtracted.

SURVEY RESULTS

Survey Unit 1CFL1

Description Concrete Floor

Maps & Drawings

	Appendix A - Page
Building Map:	3
Section Map:	4
Survey Unit Drawing:	5
Reference Building Map:	18
Reference Building Section Map:	36
Reference Unit Drawing:	41

Statics

	N	Net Activity (αpm/100cm²)				MDC (αpm/100cm²)
		Average	Minimum	Maximum	Sigma	
SU Statics:	12	8	-16	61	23	72
Duplicates:	15	-12	-44	42	22	37
Bias Ceiling Area & Walls:	2	2	-16	28	23	72

Scans

	N	Average Activity (αpm/100cm²)	Total Area Scanned (ft²)	Area Scanned per Point (ft²)	Average Residence Time (sec)	Actual scanMDC (αpm/100cm²)	Required scanMDC (αpm/100cm²)
SU Scans:	15	-4	250	17	2.5	607	672
Bias Ceiling Area & Walls:	3	-7	6.8	2.25	3.7	409	672

Smears

	N	Net Activity (αpm/100cm²)				MDC (αpm/100cm²)
		Average	Minimum	Maximum	Sigma	
SU Smears:	15	-1	-6	3	3	17
Duplicates:	15	0	-2	3	2	17
Bias Ceiling Area & Walls:	3	0	-4	2	3	17

Discussion No static or smear measurement result exceeded a small fraction of the $DCGL_w$. No anomalous data was noted; however, 3 static measurements were not recorded due to electronic data corruption but data for these points was available in the duplicate survey. Scans did not indicate any elevated areas. Data reported for "Bias Ceiling Area & Walls" is for the entire Warehouse Section. All DQOs were met.

Conclusion Survey Unit 1CFL1 satisfied the $DCGL_w$.

Appendix B

Statics

APPENDIX B - STATICS
TABLE OF CONTENTS

	Instrument	Probe	Page
Instrument Data	95357	"235487"	3
	142513	"235489	4
	180729	"00176"	5
Survey Data	**Warehouse**	**Survey Unit**	**Page**
	1	1CFL1	6
		1CWL1	7
		1DFL1	8
		1DFL2	9
		1DFL3	10
		1DWL1	11
	3	3AFL0	12
		3AFL1	13
		3AFL2	14
		3AFL3	15
		3AFL4	16
		3AWL1	17
		3AWL2	18
		3AWL3	19
		3EFL1	20
		3EWL1	21
		3EFL2-176 *	22
		3EFL2-487*	23
		3EFL2-489*	24
		3EWL2-487*	25
		3EWL2-489*	26
		3EFL4	27
		3EWL4	28
	4	4AFL1	29
		4CFL1	30
		4CWL1	31
	Trailers	DTFL1	32
		DTWL1	33
		RTFL1-487*	34
		RTWL1-487*	35

* Each probe required a background analysis
The last 3 digits are probe's last 3 digits of serial number

Form RS-9.1-2

CHESAPEAKE NUCLEAR SERVICES, INC.
Instrument Efficiency Calculation
SITE: ____ Somerville

Date:	**06/13/06**	**For Month of:**	June

Instrument Information	
Type/Serial #	2350-1 / 95357
Probe/Serial #:	43-93 / 235487
Calibration Due Date:	2/2/2007

Source Information	
Isotope	Th-230
Serial Number	72992-704
2π Emission rate (epm)	2890

	Source counts	Bkg counts	Eff
1	628	0	0.217
2	629	0	0.218
3	581	0	0.201
4	622	1	0.215
5	620	2	0.214
6	620	1	0.214
7	649	1	0.224
8	632	0	0.219
9	656	1	0.227
10	623	2	0.215
11	612	0	0.212
12	617	1	0.213
13	598	0	0.207
14	650	1	0.225
15	607	2	0.209
16	595	0	0.206
17	595	2	0.205
18	640	1	0.221
19	651	0	0.225
20	591	1	0.204
Average	620.8	0.8	0.215
Std Dev	22	0.8	0.008

Count Time in minutes	1

$$MDC = \frac{3 + 4.65 * s_b}{(\varepsilon_s)(\varepsilon_i)\left(\frac{a}{100\ cm^2}\right)}$$

MDC = 72

$$\text{Inst. Eff.} = \frac{\text{Avg Source CPM} - \text{Avg Bkg CPM}}{\text{Source } 2\pi \text{ Activity (epm)}}$$

Inst. Eff.= 0.215

Form RS-9.1-2

CHESAPEAKE NUCLEAR SERVICES, INC.
Instrument Efficiency Calculation
SITE: ____ Somerville

Date:	**06/13/06**	**For Month of:**	June

Instrument Information	
Type/Serial #	**2350-1 / 142513**
Probe/Serial #:	43-93 / 235489
Calibration Due Date:	2/2/2007

Source Information	
Isotope	Th-230
Serial Number	72992-704
2π Emission rate (epm)	2890

Count Time in minutes	1

	Source counts	Bkg counts	Eff
1	694	0	0.240
2	678	1	0.234
3	676	0	0.234
4	678	0	0.235
5	630	0	0.218
6	668	0	0.231
7	703	0	0.243
8	645	0	0.223
9	715	0	0.247
10	688	0	0.238
11	640	0	0.221
12	651	0	0.225
13	715	0	0.247
14	751	0	0.260
15	641	0	0.222
16	646	0	0.224
17	658	0	0.228
18	677	0	0.234
19	654	0	0.226
20	697	0	0.241
Average	675.3	0.1	0.234
Std Dev	31	0.2	0.011

$$MDC = \frac{3 + 4.65 * s_b}{(\varepsilon_s)(\varepsilon_i)\left(\frac{a}{100cm^2}\right)}$$

MDC = 40

$$\text{Inst. Eff.} = \frac{\text{Avg Source CPM} - \text{Avg Bkg CPM}}{\text{Source } 2\pi \text{ Activity (epm)}}$$

Inst. Eff.= 0.234

Form RS-9.1-2

CHESAPEAKE NUCLEAR SERVICES, INC.
Instrument Efficiency Calculation (Revised for Planar Source)
SITE: ____ Somerville

Date:	**06/26/06**

Instrument Information		
Type/Serial #	2350-1	180729
Probe/Serial #:	SHP380AB	00176
Calibration Due Date:	11/5/2006	

Source Information	
Isotope	Th230
Serial Number	72992-704
2π Emission Rate(EPM)	2890

	Source counts	Bkg counts	Eff
1	548	1	0.189
2	565	1	0.195
3	573	1	0.198
4	530	1	0.183
5	506	2	0.174
6	541	1	0.187
7	583	1	0.201
8	581	0	0.201
9	535	4	0.184
10	534	0	0.185
11	520	1	0.180
12	583	1	0.201
13	553	2	0.191
14	591	2	0.204
15	557	1	0.192
16	566	1	0.196
17	515	3	0.177
18	559	2	0.193
19	594	0	0.206
20	553	2	0.191
Average	554	1.4	0.191
std dev	26	1.0	0.009

Count Time in minutes	1

$$MDC = \frac{3 + 4.65 * s_b}{(\varepsilon_s)(\varepsilon_i)\left(\frac{a}{100\,cm^2}\right)}$$

MDC = 37

$$\text{Inst. Eff.} = \frac{\text{Ave Source CPM} - \text{Av Bkg CPM}}{\text{Source } 2\pi \text{ Activity (epm)}}$$

Inst. Eff.= 0.191

Summary of Static Measurements - Alpha

Survey Unit: 1CFL1
Description: Storage Area
Survey Date: 7/25/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2	1	1.4	6	31
2	Not Available				
3	Not Available				
4	Not Available				
5	4	3	2.0	28	44
6	3	2	1.8	17	38
7	3	2	1.8	17	38
8	1	0	1.0	-5	22
9	0	-1	0.3	-16	8
10	1	0	1.0	-5	22
11	7	6	2.7	61	59
12	1	0	1.0	-5	22
13	4	3	2.0	28	44
14	0	-1	0.3	-16	8
15	0	-1	0.3	-16	8
			Minimum:	-16	
			Maximum:	61	
			Average:	8	
			Std Dev:	23	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1CWL1
Description: Storage Area
Survey Date: 7/25/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.3	-16	8
2	2	1	1.4	6	31
3	2	1	1.4	6	31
4	1	0	1.0	-5	22
5	3	2	1.8	17	38
6	2	1	1.4	6	31
7	4	3	2.0	28	44
8	2	1	1.4	6	31
9	1	0	1.0	-5	22
10	5	4	2.3	39	49
11	0	-1	0.3	-16	8
12	1	0	1.0	-5	22
13	3	2	1.8	17	38
14	3	2	1.8	17	38
15	2	1	1.4	6	31
			Minimum:	-16	
			Maximum:	39	
			Average:	7	
			Std Dev:	15	

Analysis Parameters

Reference Area: 3EWL2
Material: Block
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1DFL1
Description: Storage Area
Survey Date: 7/26/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0	-1	0.3	-16	8
2	1	0	1.0	-5	22
3	2	1	1.4	6	31
4	0	-1	0.3	-16	8
5	0	-1	0.3	-16	8
6	0	-1	0.3	-16	8
7	4	3	2.0	28	44
8	2	1	1.4	6	31
9	3	2	1.8	17	38
10	1	0	1.0	-5	22
11	1	0	1.0	-5	22
12	9	8	3.0	82	68
13	1	0	1.0	-5	22
14	4	3	2.0	28	44
15	4	3	2.0	28	44
			Minimum:	-16	
			Maximum:	82	
			Average:	7	
			Std Dev:	26	

Analysis Parameters

Reference Area: 3EFL2
Material: Concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1DFL2
Description: Storage Area
Survey Date: 7/26/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1	0	1.0	-5	22
2	2	1	1.4	6	31
3	1	0	1.0	-5	22
4	1	0	1.0	-5	22
5	2	1	1.4	6	31
6	5	4	2.3	39	49
7	1	0	1.0	-5	22
8	2	1	1.4	6	31
9	6	5	2.5	50	54
10	2	1	1.4	6	31
11	2	1	1.4	6	31
12	2	1	1.4	6	31
13	3	2	1.8	17	38
14	1	0	1.0	-5	22
15	4	3	2.0	28	44
			Minimum:	-5	
			Maximum:	50	
			Average:	10	
			Std Dev:	17	

Analysis Parameters

Reference Area: 3EFL2
Material: Concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1DFL3
Description: Storage Area
Survey Date: 7/26/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.3	-16	8
2	1	0	1.0	-5	22
3	1	0	1.0	-5	22
4	2	1	1.4	6	31
5	6	5	2.5	50	54
6	3	2	1.8	17	38
7	0	-1	0.3	-16	8
8	2	1	1.4	6	31
9	3	2	1.8	17	38
10	0	-1	0.3	-16	8
11	3	2	1.8	17	38
12	1	0	1.0	-5	22
13	3	2	1.8	17	38
14	0	-1	0.3	-16	8
15	0	-1	0.3	-16	8
			Minimum:	-16	
			Maximum:	50	
			Average:	2	
			Std Dev:	19	

Analysis Parameters

Reference Area: 3EFL2
Material: Concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1DWL1
Description: Storage Area
Survey Date: 7/26/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	5	4	2.3	39	49
2	2	1	1.4	6	31
3	2	1	1.4	6	31
4	7	6	2.7	61	59
5	6	5	2.5	50	54
6	0	-1	0.3	-16	8
7	3	2	1.8	17	38
8	3	2	1.8	17	38
9	3	2	1.8	17	38
10	4	3	2.0	28	44
11	3	2	1.8	17	38
12	2	1	1.4	6	31
13	1	0	1.0	-5	22
14	3	2	1.8	17	38
15	4	3	2.0	28	44
			Minimum:	-16	
			Maximum:	61	
			Average:	19	
			Std Dev:	20	

Analysis Parameters

Reference Area:	3EWL2	**Material Background:**	1.4 cpm
Material:	Block	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AFL0
Description: Storage Area
Survey Date: 7/27/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	3	0	1.8	3	35
2	3	0	1.8	3	35
3	2	-1	1.5	-7	29
4	5	2	2.3	23	45
5	4	1	2.0	13	40
6	4	1	2.0	13	40
7	3	0	1.8	3	35
8	2	-1	1.5	-7	29
9	2	-1	1.5	-7	29
10	4	1	2.0	13	40
11	5	2	2.3	23	45
12	2	-1	1.5	-7	29
13	2	-1	1.5	-7	29
14	2	-1	1.5	-7	29
15	3	0	1.8	3	35
			Minimum:	-7	
			Maximum:	23	
			Average:	4	
			Std Dev:	11	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 2.7 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 40 αpm/100 cm²

Total Efficiency: 0.100 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	142513
Detector:	43-93	235489

Probe Area: 100 cm²
Instrument Efficiency: 0.234 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AFL1
Description: Storage Area
Survey Date: 7/25/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2	-1	1.5	-7	29
2	0	-3	0.4	-27	11
3	3	0	1.8	3	35
4	2	-1	1.5	-7	29
5	7	4	2.7	43	54
6	3	0	1.8	3	35
7	6	3	2.5	33	50
8	1	-2	1.1	-17	22
9	0	-3	0.4	-27	11
10	6	3	2.5	33	50
11	2	-1	1.5	-7	29
12	4	1	2.0	13	40
13	2	-1	1.5	-7	29
14	1	-2	1.1	-17	22
15	4	1	2.0	13	40
			Minimum:	-27	
			Maximum:	43	
			Average:	2	
			Std Dev:	22	

Analysis Parameters

Reference Area:	3EFL2	**Material Background:**	2.7 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AFL2
Description: Storage Area
Survey Date: 11/15/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	8	3	2.9	42	70
2	1	-4	1.1	-44	30
3	1	-4	1.1	-44	30
4	2	-3	1.5	-32	37
5	1	-4	1.1	-44	30
6	2	-3	1.5	-32	37
7	5	0	2.3	5	55
8	3	-2	1.8	-20	44
9	5	0	2.3	5	55
10	2	-3	1.5	-32	37
11	3	-2	1.8	-20	44
12	5	0	2.3	5	55
13	5	0	2.3	5	55
14	5	0	2.3	5	55
15	2	-3	1.5	-32	37
			Minimum:	-44	
			Maximum:	42	
			Average:	-16	
			Std Dev:	25	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 4.6 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 37 αpm/100 cm²

Total Efficiency: 0.082 cpm/αpm
Total Efficiency Uncertainty: 0.011 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	180729
Detector:	SHP380AB	00176

Probe Area: 100 cm²
Instrument Efficiency: 0.191 cpm/epm
Efficiency Uncertainty: 0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AFL3
Description: Storage Area
Survey Date: 7/11/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	2	-1	1.5	-7	29
2	1	-2	1.1	-17	22
3	1	-2	1.1	-17	22
4	1	-2	1.1	-17	22
5	4	1	2.0	13	40
6	7	4	2.7	43	54
7	2	-1	1.5	-7	29
8	1	-2	1.1	-17	22
9	1	-2	1.1	-17	22
10	0	-3	0.4	-27	11
11	6	3	2.5	33	50
12	2	-1	1.5	-7	29
13	2	-1	1.5	-7	29
14	0	-3	0.4	-27	11
15	0	-3	0.4	-27	11
			Minimum:	-27	
			Maximum:	43	
			Average:	-7	
			Std Dev:	21	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 2.7 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 40 αpm/100 cm²

Total Efficiency: 0.100 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	142513
Detector:	43-93	235489

Probe Area: 100 cm²
Instrument Efficiency: 0.234 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AFL4
Description: Storage Area
Survey Date: 7/11/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2	-1	1.5	-7	29
2	4	1	2.0	13	40
3	2	-1	1.5	-7	29
4	3	0	1.8	3	35
5	4	1	2.0	13	40
6	2	-1	1.5	-7	29
7	4	1	2.0	13	40
8	3	0	1.8	3	35
9	2	-1	1.5	-7	29
10	3	0	1.8	3	35
11	2	-1	1.5	-7	29
12	4	1	2.0	13	40
13	5	2	2.3	23	45
14	3	0	1.8	3	35
15	4	1	2.0	13	40
			Minimum:	-7	
			Maximum:	23	
			Average:	4	
			Std Dev:	10	

Analysis Parameters

Reference Area:	3EFL2	**Material Background:**	2.7 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AWL1
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	No Data Collected				
2	2	0	1.5	-4	29
3	6	4	2.5	36	50
4	4	2	2.0	16	40
5	3	1	1.8	6	35
6	3	1	1.8	6	35
7	2	0	1.5	-4	29
8	4	2	2.0	16	40
9	3	1	1.8	6	35
10	3	1	1.8	6	35
11	5	3	2.3	26	45
12	3	1	1.8	6	35
13	2	0	1.5	-4	29
14	7	5	2.7	46	54
15	3	1	1.8	6	35
			Minimum:	-4	
			Maximum:	46	
			Average:	12	
			Std Dev:	15	

Analysis Parameters

Reference Area:	3EWL2	**Material Background:**	2.4 cpm
Material:	block	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AWL2
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	3	1	1.8	6	35
2	4	2	2.0	16	40
3	6	4	2.5	36	50
4	3	1	1.8	6	35
5	1	-1	1.1	-14	21
6	4	2	2.0	16	40
7	5	3	2.3	26	45
8	4	2	2.0	16	40
9	2	0	1.5	-4	29
10	2	0	1.5	-4	29
11	6	4	2.5	36	50
12	4	2	2.0	16	40
13	5	3	2.3	26	45
14	3	1	1.8	6	35
15	2	0	1.5	-4	29
			Minimum:	-14	
			Maximum:	36	
			Average:	12	
			Std Dev:	15	

Analysis Parameters

Reference Area:	3EWL2	**Material Background:**	2.4 cpm
Material:	block	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3AWL3
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	2	0	1.5	-4	29
2	1	-1	1.1	-14	21
3	2	0	1.5	-4	29
4	2	0	1.5	-4	29
5	1	-1	1.1	-14	21
6	3	1	1.8	6	35
7	2	0	1.5	-4	29
8	No Data Collected				
9	6	4	2.5	36	50
10	2	0	1.5	-4	29
11	5	3	2.3	26	45
12	2	0	1.5	-4	29
13	6	4	2.5	36	50
14	1	-1	1.1	-14	21
15	5	3	2.3	26	45
			Minimum:	-14	
			Maximum:	36	
			Average:	5	
			Std Dev:	18	

Analysis Parameters

Reference Area: 3EWL2
Material: block
Material Background: 2.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 40 αpm/100 cm²

Total Efficiency: 0.100 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	142513
Detector:	43-93	235489

Probe Area: 100 cm²
Instrument Efficiency: 0.234 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EFL1
Description: Storage Area
Survey Date: 11/14/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	13	8	3.6	103	92
2	4	-1	2.1	-7	50
3	4	-1	2.1	-7	50
4	8	3	2.9	42	70
5	6	1	2.5	17	60
6	8	3	2.9	42	70
7	3	-2	1.8	-20	44
8	5	0	2.3	5	55
9	7	2	2.7	29	65
10	5	0	2.3	5	55
11	4	-1	2.1	-7	50
12	4	-1	2.1	-7	50
13	8	3	2.9	42	70
14	3	-2	1.8	-20	44
15	7	2	2.7	29	65
			Minimum:	-20	
			Maximum:	103	
			Average:	16	
			Std Dev:	33	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 4.6 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 37 αpm/100 cm²

Total Efficiency: 0.082 cpm/αpm
Total Efficiency Uncertainty: 0.011 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	180729
Detector:	SHP380AB	00176

Probe Area: 100 cm²
Instrument Efficiency: 0.191 cpm/epm
Efficiency Uncertainty: 0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EWL1
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1	0	1.0	-5	22
2	2	1	1.4	6	31
3	1	0	1.0	-5	22
4	0	-1	0.3	-16	8
5	0	-1	0.3	-16	8
6	0	-1	0.3	-16	8
7	2	1	1.4	6	31
8	3	2	1.8	17	38
9	2	1	1.4	6	31
10	1	0	1.0	-5	22
11	4	3	2.0	28	44
12	1	0	1.0	-5	22
13	2	1	1.4	6	31
14	1	0	1.0	-5	22
15	2	1	1.4	6	31
			Minimum:	-16	
			Maximum:	28	
			Average:	0	
			Std Dev:	12	

Analysis Parameters

Reference Area: 3EWL2
Material: block
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EFL2 Reference
Description: Storage Area
Survey Date: 11/14/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	7	6	2.7	69	66
2	2	1	1.4	7	35
3	4	3	2.0	32	49
4	3	2	1.8	20	42
5	2	1	1.4	7	35
6	9	8	3.0	93	76
7	5	4	2.3	44	55
8	3	2	1.8	20	42
9	4	3	2.0	32	49
10	4	3	2.0	32	49
11	3	2	1.8	20	42
12	3	2	1.8	20	42
13	4	3	2.0	32	49
14	6	5	2.5	56	61
15	10	9	3.2	105	81
			Minimum:	7	
			Maximum:	105	
Average:	4.6		**Average:**	39	
			Std Dev:	29	

Analysis Parameters

Reference Area: N/A
Material: Concrete
Instrument Background: 1.4 cpm
Background Count Time: 20 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 37 αpm/100 cm²

Total Efficiency: 0.082 cpm/αpm
Total Efficiency Uncertainty: 0.011 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	180729
Detector:	SHP380AB	00176

Probe Area: 100 cm²
Instrument Efficiency: 0.191 cpm/epm
Efficiency Uncertainty: 0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EFL2 Reference
Description: Reference Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1	0	1.0	2	22
2	1	0	1.0	2	22
3	1	0	1.0	2	22
4	0	-1	0.2	-9	5
5	1	0	1.0	2	22
6	4	3	2.0	35	44
7	0	-1	0.2	-9	5
8	2	1	1.4	13	31
9	1	0	1.0	2	22
10	3	2	1.7	24	38
11	2	1	1.4	13	31
12	2	1	1.4	13	31
13	2	1	1.4	13	31
14	Data Not Available				
15	0	-1	0.2	-9	5
			Minimum:	-9	
			Maximum:	35	
Average:	1.4		**Average:**	7	
			Std Dev:	13	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.8 cpm
Material:	Concrete	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EFL2
Description: Reference Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	4	4	2.0	40	41
2	2	2	1.4	20	28
3	2	2	1.4	20	28
4	2	2	1.4	20	28
5	4	4	2.0	40	41
6	2	2	1.4	20	28
7	3	3	1.7	30	35
8	3	3	1.7	30	35
9	3	3	1.7	30	35
10	3	3	1.7	30	35
11	1	1	1.0	10	20
12	2	2	1.4	20	28
13	2	2	1.4	20	28
14	1	1	1.0	10	20
15	6	6	2.5	60	51
			Minimum:	10	
			Maximum:	60	
Average:	2.7		**Average:**	27	
			Std Dev:	13	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.1 cpm
Material:	Concrete	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EFL4
Description: Storage Area
Survey Date: 11/14/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	3	-2	1.8	-20	44
2	4	-1	2.1	-7	50
3	4	-1	2.1	-7	50
4	2	-3	1.5	-32	37
5	2	-3	1.5	-32	37
6	6	1	2.5	17	60
7	2	-3	1.5	-32	37
8	1	-4	1.1	-44	30
9	4	-1	2.1	-7	50
10	6	1	2.5	17	60
11	4	-1	2.1	-7	50
12	3	-2	1.8	-20	44
13	4	-1	2.1	-7	50
14	5	0	2.3	5	55
15	3	-2	1.8	-20	44
			Minimum:	-44	
			Maximum:	17	
			Average:	-13	
			Std Dev:	18	

Analysis Parameters

Reference Area: 3EFL2
Material: Concrete
Material Background: 4.6 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 37 αpm/100 cm²

Total Efficiency: 0.082 cpm/αpm
Total Efficiency Uncertainty: 0.011 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	180729
Detector:	SHP380AB	00176

Probe Area: 100 cm²
Instrument Efficiency: 0.191 cpm/epm
Efficiency Uncertainty: 0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EWL2
Description: Reference Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.2	-9	5
2	2	1	1.4	13	31
3	1	0	1.0	2	22
4	1	0	1.0	2	22
5	0	-1	0.2	-9	5
6	1	0	1.0	2	22
7	2	1	1.4	13	31
8	1	0	1.0	2	22
9	0	-1	0.2	-9	5
10	4	3	2.0	35	44
11	3	2	1.7	24	38
12	3	2	1.7	24	38
13	1	0	1.0	2	22
14	1	0	1.0	2	22
15	1	0	1.0	2	22
			Minimum:	-9	
			Maximum:	35	
Average:	1.4		**Average:**	6	
			Std Dev:	13	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.8 cpm
Material:	Block	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EWL2
Description: Reference Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	5	5	2.2	50	46
2	2	2	1.4	20	28
3	3	3	1.7	30	35
4	5	5	2.2	50	46
5	1	1	1.0	10	20
6	4	4	2.0	40	41
7	3	3	1.7	30	35
8	1	1	1.0	10	20
9	2	2	1.4	20	28
10	4	4	2.0	40	41
11	1	1	1.0	10	20
12	1	1	1.0	10	20
13	1	1	1.0	10	20
14	2	2	1.4	20	28
15	1	1	1.0	10	20
			Minimum:	10	
			Maximum:	50	
Average:	2.4		**Average:**	24	
			Std Dev:	15	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.1 cpm
Material:	Block	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	40 αpm/100 cm²
		Total Efficiency:	0.100 cpm/αpm
		Total Efficiency Uncertainty:	0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	142513	**Probe Area:**	100 cm²
Detector:	43-93	235489	**Instrument Efficiency:**	0.234 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 3EWL4
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1	0	1.0	-5	22
2	1	0	1.0	-5	22
3	0	-1	0.3	-16	8
4	2	1	1.4	6	31
5	2	1	1.4	6	31
6	3	2	1.8	17	38
7	3	2	1.8	17	38
8	3	2	1.8	17	38
9	0	-1	0.3	-16	8
10	1	0	1.0	-5	22
11	3	2	1.8	17	38
12	1	0	1.0	-5	22
13	1	0	1.0	-5	22
14	2	1	1.4	6	31
15	2	1	1.4	6	31
			Minimum:	-16	
			Maximum:	17	
			Average:	2	
			Std Dev:	12	

Analysis Parameters

Reference Area: 3EWL2
Material: Block
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 4AFL1
Description: Storage Area
Survey Date: 8/2/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.3	-16	8
2	3	2	1.8	17	38
3	6	5	2.5	50	54
4	2	1	1.4	6	31
5	2	1	1.4	6	31
6	4	3	2.0	28	44
7	1	0	1.0	-5	22
8	3	2	1.8	17	38
9	3	2	1.8	17	38
10	5	4	2.3	39	49
11	0	-1	0.3	-16	8
12	2	1	1.4	6	31
13	1	0	1.0	-5	22
14	4	3	2.0	28	44
15	4	3	2.0	28	44
			Minimum:	-16	
			Maximum:	50	
			Average:	13	
			Std Dev:	19	

Analysis Parameters

Reference Area: 3EFL2
Material: Concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 4CFL1
Description: Storage Area
Survey Date: 11/15/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	5	0	2.3	5	55
2	7	2	2.7	29	65
3	4	-1	2.1	-7	50
4	4	-1	2.1	-7	50
5	4	-1	2.1	-7	50
6	4	-1	2.1	-7	50
7	1	-4	1.1	-44	30
8	3	-2	1.8	-20	44
9	2	-3	1.5	-32	37
10	0	-5	0.6	-56	20
11	2	-3	1.5	-32	37
12	4	-1	2.1	-7	50
13	3	-2	1.8	-20	44
14	3	-2	1.8	-20	44
15	7	2	2.7	29	65
			Minimum:	-56	
			Maximum:	29	
			Average:	-13	
			Std Dev:	23	

Analysis Parameters

Reference Area: 3EFL2
Material: concrete
Material Background: 4.6 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 37 αpm/100 cm²

Total Efficiency: 0.082 cpm/αpm
Total Efficiency Uncertainty: 0.011 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	180729
Detector:	SHP380AB	00176

Probe Area: 100 cm²
Instrument Efficiency: 0.191 cpm/epm
Efficiency Uncertainty: 0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 4CWL1
Description: Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2	0	1.5	-4	29
2	4	2	2.0	16	40
3	3	1	1.8	6	35
4	3	1	1.8	6	35
5	6	4	2.5	36	50
6	2	0	1.5	-4	29
7	5	3	2.3	26	45
8	2	0	1.5	-4	29
9	3	1	1.8	6	35
10	2	0	1.5	-4	29
11	2	0	1.5	-4	29
12	4	2	2.0	16	40
13	2	0	1.5	-4	29
14	1	-1	1.1	-14	21
15	2	0	1.5	-4	29
			Minimum:	-14	
			Maximum:	36	
			Average:	5	
			Std Dev:	14	

Analysis Parameters

Reference Area: 3EWL2
Material: block
Material Background: 2.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 40 αpm/100 cm²

Total Efficiency: 0.100 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	142513
Detector:	43-93	235489

Probe Area: 100 cm²
Instrument Efficiency: 0.234 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: DTFL1
Description: Sampling and Storage Area
Survey Date: 7/12/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	0	0.1	-3	3
2	0	0	0.1	-3	3
3	0	0	0.1	-3	3
4	1	1	1.0	8	22
5	1	1	1.0	8	22
6	1	1	1.0	8	22
7	1	1	1.0	8	22
8	1	1	1.0	8	22
9	0	0	0.1	-3	3
10	1	1	1.0	8	22
11	0	0	0.1	-3	3
12	0	0	0.1	-3	3
13	0	0	0.1	-3	3
14	0	0	0.1	-3	3
15	0	0	0.1	-3	3
			Minimum:	-3	
			Maximum:	8	
			Average:	1	
			Std Dev:	6	

Analysis Parameters

Reference Area: RTFL1
Material: Tile
Material Background: 0.3 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: DTWL1
Description: Sampling and Storage Area
Survey Date: 7/13/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	0	0.2	-4	4
2	0	0	0.2	-4	4
3	0	0	0.2	-4	4
4	1	1	1.0	7	22
5	0	0	0.2	-4	4
6	0	0	0.2	-4	4
7	0	0	0.2	-4	4
8	0	0	0.2	-4	4
9	0	0	0.2	-4	4
10	1	1	1.0	7	22
11	0	0	0.2	-4	4
12	0	0	0.2	-4	4
13	0	0	0.2	-4	4
14	0	0	0.2	-4	4
15	0	0	0.2	-4	4
			Minimum:	-4	
			Maximum:	7	
			Average:	-3	
			Std Dev:	4	

Analysis Parameters

Reference Area: RTWL1
Material: Wallboard
Material Background: 0.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: RTFL1
Description: Reference Trailer
Survey Date: 7/25/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.2	-9	5
2	1	0	1.0	2	22
3	0	-1	0.2	-9	5
4	0	-1	0.2	-9	5
5	0	-1	0.2	-9	5
6	0	-1	0.2	-9	5
7	0	-1	0.2	-9	5
8	0	-1	0.2	-9	5
9	0	-1	0.2	-9	5
10	1	0	1.0	2	22
11	1	0	1.0	2	22
12	0	-1	0.2	-9	5
13	0	-1	0.2	-9	5
14	1	0	1.0	2	22
15	1	0	1.0	2	22
			Minimum:	-9	
			Maximum:	2	
Average:	0.3		**Average:**	-5	
			Std Dev:	5	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.8 cpm
Material:	Tile	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: RTWL1
Description: Reference Trailer
Survey Date: 7/25/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0	-1	0.2	-9	5
2	0	-1	0.2	-9	5
3	1	0	1.0	2	22
4	0	-1	0.2	-9	5
5	0	-1	0.2	-9	5
6	1	0	1.0	2	22
7	1	0	1.0	2	22
8	0	-1	0.2	-9	5
9	0	-1	0.2	-9	5
10	0	-1	0.2	-9	5
11	1	0	1.0	2	22
12	1	0	1.0	2	22
13	1	0	1.0	2	22
14	0	-1	0.2	-9	5
15	0	-1	0.2	-9	5
			Minimum:	-9	
			Maximum:	2	
Average:	0.4		**Average:**	-5	
			Std Dev:	6	

Analysis Parameters

Reference Area:	N/A	**Instrument Background:**	0.8 cpm
Material:	Wallboard	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Appendix D

Smears

APPENDIX D - SMEARS
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Form RS-9.1-1

CHESAPEAKE NUCLEAR SERVICES, INC.
STANDARD DEVIATION DATA TABLE
SITE: ____ DLA / DNSC

Date:	**11/01/06**	**For Month of:**	Nov.

Instrument Information		
Type/Serial #	2929	176108
Probe/Serial #:	43-10	181905
Calibration Due Date		
Mode (count rate/dose rate)	count rate	
Data Type (Source, Bkgd)	BKGD	

If the data type is a background for a specific material, list the material type

Source Information	
Isotope	TH 230
Serial #	A2-743
2π emission rate (αpm)	17610

N	Gross	Background	ε_i
1	12854	1	0.730
2	12919	1	0.734
3	12925	2	0.734
4	12793	1	0.726
5	12848	1	0.730
6	12991	1	0.738
7	12934	1	0.734
8	12724	0	0.723
9	12560	1	0.713
10	12881	1	0.731
11	12974	1	0.737
12	12917	1	0.733
13	12782	1	0.726
14	12879	2	0.731
15	12907	1	0.733
16	12717	1	0.722
17	12903	2	0.733
18	12862	1	0.730
19	12828	0	0.728
20	13181	1	0.748

For N=1-20,

$$\varepsilon_i = \frac{CountRate - Background\ Rate}{2\pi SurfaceEmissionRate}$$

Average	12869	1.05	0.730
Std Dev	124	0.51	0.007
		Ratio of STD Dev to Eff	0.010
		Surface Eff	0.25
		Total Efficiency	0.183
		Total Counting Standard Deviation	0.010

$$\varepsilon_i = \frac{AverageCountRate - AverageBackgroundRate}{2\pi SurfaceEmissionRate}$$

Summary of Smear Measurements - Alpha

Survey Unit: 1CFL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.3	0.3	0.4	2	6
3	1.3	0.3	0.4	2	6
4	0.0	-1.1	0.2	-6	3
5	1.0	-0.1	0.4	0	4
6	0.7	-0.4	0.4	-2	4
7	1.7	0.6	0.5	3	5
8	1.0	-0.1	0.4	0	4
9	1.0	-0.1	0.4	0	4
10	0.3	-0.7	0.3	-4	3
11	0.3	-0.7	0.3	-4	3
12	0.3	-0.7	0.3	-4	3
13	0.3	-0.7	0.3	-4	3
14	1.3	0.3	0.4	2	6
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	3	
			Average:	-1.0	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1CWL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.3	0.3	0.4	2	6
3	0.7	-0.4	0.4	-2	4
4	0.3	-0.7	0.3	-4	3
5	1.0	-0.1	0.4	0	4
6	0.7	-0.4	0.4	-2	4
7	1.0	-0.1	0.4	0	4
8	1.0	-0.1	0.4	0	4
9	0.3	-0.7	0.3	-4	3
10	0.3	-0.7	0.3	-4	3
11	1.7	0.6	0.5	3	5
12	1.0	-0.1	0.4	0	4
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-4	
			Maximum:	3	
			Average:	-0.9	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1DFL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.7	0.6	0.5	3	5
2	0.3	-0.7	0.3	-4	3
3	0.3	-0.7	0.3	-4	3
4	0.3	-0.7	0.3	-4	3
5	0.3	-0.7	0.3	-4	3
6	1.0	-0.1	0.4	0	4
7	1.3	0.3	0.4	2	6
8	0.0	-1.1	0.2	-6	3
9	0.3	-0.7	0.3	-4	3
10	2.0	1.0	0.5	5	5
11	2.0	1.0	0.5	5	5
12	1.0	-0.1	0.4	0	4
13	0.3	-0.7	0.3	-4	3
14	1.0	-0.1	0.4	0	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.0	
			Sigma:	4	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1DFL2
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	0.7	-0.4	0.4	-2	4
3	0.3	-0.7	0.3	-4	3
4	1.0	-0.1	0.4	0	4
5	1.0	-0.1	0.4	0	4
6	0.0	-1.1	0.2	-6	3
7	0.7	-0.4	0.4	-2	4
8	0.3	-0.7	0.3	-4	3
9	0.3	-0.7	0.3	-4	3
10	0.7	-0.4	0.4	-2	4
11	1.0	-0.1	0.4	0	4
12	0.3	-0.7	0.3	-4	3
13	0.7	-0.4	0.4	-2	4
14	0.7	-0.4	0.4	-2	4
15	0.0	-1.1	0.2	-6	3
			Minimum:	-6	
			Maximum:	0	
			Average:	-2.5	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1DFL3
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.3	0.3	0.4	2	6
2	0.3	-0.7	0.3	-4	3
3	0.7	-0.4	0.4	-2	4
4	1.3	0.3	0.4	2	6
5	1.0	-0.1	0.4	0	4
6	1.0	-0.1	0.4	0	4
7	1.0	-0.1	0.4	0	4
8	1.3	0.3	0.4	2	6
9	0.7	-0.4	0.4	-2	4
10	0.7	-0.4	0.4	-2	4
11	1.0	-0.1	0.4	0	4
12	0.7	-0.4	0.4	-2	4
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	0.3	-0.7	0.3	-4	3
			Minimum:	-4	
			Maximum:	2	
			Average:	-0.8	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1DWL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.7	0.6	0.5	3	5
2	0.7	-0.4	0.4	-2	4
3	0.7	-0.4	0.4	-2	4
4	1.3	0.3	0.4	2	6
5	0.3	-0.7	0.3	-4	3
6	0.3	-0.7	0.3	-4	3
7	0.3	-0.7	0.3	-4	3
8	0.7	-0.4	0.4	-2	4
9	2.0	1.0	0.5	5	5
10	0.3	-0.7	0.3	-4	3
11	0.0	-1.1	0.2	-6	3
12	0.3	-0.7	0.3	-4	3
13	1.0	-0.1	0.4	0	4
14	1.7	0.6	0.5	3	5
15	0.3	-0.7	0.3	-4	3
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.5	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL0
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 7/17/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.0	-0.1	0.4	0	4
3	1.0	-0.1	0.4	0	4
4	0.7	-0.4	0.4	-2	4
5	0.0	-1.1	0.2	-6	3
6	1.0	-0.1	0.4	0	4
7	0.7	-0.4	0.4	-2	4
8	0.3	-0.7	0.3	-4	3
9	1.3	0.3	0.4	2	6
10	0.7	-0.4	0.4	-2	4
11	1.0	-0.1	0.4	0	4
12	1.0	-0.1	0.4	0	4
13	0.0	-1.1	0.2	-6	3
14	0.0	-1.1	0.2	-6	3
15	0.7	-0.4	0.4	-2	4
			Minimum:	-6	
			Maximum:	2	
			Average:	-1.9	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL1
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.3	0.3	0.4	2	6
2	0.0	-1.1	0.2	-6	3
3	1.0	-0.1	0.4	0	4
4	1.3	0.3	0.4	2	6
5	0.7	-0.4	0.4	-2	4
6	1.0	-0.1	0.4	0	4
7	1.0	-0.1	0.4	0	4
8	0.0	-1.1	0.2	-6	3
9	1.3	0.3	0.4	2	6
10	0.0	-1.1	0.2	-6	3
11	2.0	1.0	0.5	5	5
12	0.3	-0.7	0.3	-4	3
13	0.3	-0.7	0.3	-4	3
14	0.7	-0.4	0.4	-2	4
15	1.3	0.3	0.4	2	6
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.1	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL2
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 7/17/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	0.7	-0.4	0.4	-2	4
3	1.3	0.3	0.4	2	6
4	0.3	-0.7	0.3	-4	3
5	2.0	1.0	0.5	5	5
6	0.3	-0.7	0.3	-4	3
7	1.3	0.3	0.4	2	6
8	1.3	0.3	0.4	2	6
9	1.0	-0.1	0.4	0	4
10	1.0	-0.1	0.4	0	4
11	3.7	2.6	0.7	14	7
12	1.7	0.6	0.5	3	5
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-4	
			Maximum:	14	
			Average:	0.9	
			Sigma:	4	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL3
Description: Storage Area
Survey Date: 11/16/2005
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	0.0	-1.1	0.2	-6	3
3	1.3	0.3	0.4	2	6
4	1.0	-0.1	0.4	0	4
5	0.7	-0.4	0.4	-2	4
6	1.3	0.3	0.4	2	6
7	0.0	-1.1	0.2	-6	3
8	0.7	-0.4	0.4	-2	4
9	0.3	-0.7	0.3	-4	3
10	0.7	-0.4	0.4	-2	4
11	0.0	-1.1	0.2	-6	3
12	0.3	-0.7	0.3	-4	3
13	0.7	-0.4	0.4	-2	4
14	0.7	-0.4	0.4	-2	4
15	1.3	0.3	0.4	2	6
			Minimum:	-6	
			Maximum:	2	
			Average:	-2.0	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL4
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2.0	1.0	0.5	5	5
2	2.0	1.0	0.5	5	5
3	0.3	-0.7	0.3	-4	3
4	0.7	-0.4	0.4	-2	4
5	1.3	0.3	0.4	2	6
6	1.3	0.3	0.4	2	6
7	0.0	-1.1	0.2	-6	3
8	1.3	0.3	0.4	2	6
9	1.0	-0.1	0.4	0	4
10	0.3	-0.7	0.3	-4	3
11	0.3	-0.7	0.3	-4	3
12	1.0	-0.1	0.4	0	4
13	1.7	0.6	0.5	3	5
14	1.0	-0.1	0.4	0	4
15	1.7	0.6	0.5	3	5
			Minimum:	-6	
			Maximum:	5	
			Average:	0.1	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AWL1
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 7/17/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0.3	-0.7	0.3	-4	3
2	1.0	-0.1	0.4	0	0
3	0.7	-0.4	0.4	-2	4
4	0.7	-0.4	0.4	-2	4
5	0.3	-0.7	0.3	-4	3
6	0.3	-0.7	0.3	-4	3
7	0.7	-0.4	0.4	-2	4
8	1.0	-0.1	0.4	0	4
9	1.7	0.6	0.5	3	5
10	0.7	-0.4	0.4	-2	4
11	1.0	-0.1	0.4	0	4
12	0.7	-0.4	0.4	-2	4
13	1.3	0.3	0.4	2	6
14	1.3	0.3	0.4	2	6
15	0.7	-0.4	0.4	-2	4
			Minimum:	-4	
			Maximum:	3	
			Average:	-1.1	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AWL2
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 7/17/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	0.7	-0.4	0.4	-2	4
3	1.0	-0.1	0.4	0	0
4	0.7	-0.4	0.4	-2	4
5	1.0	-0.1	0.4	0	4
6	1.3	0.3	0.4	2	6
7	1.3	0.3	0.4	2	6
8	1.0	-0.1	0.4	0	4
9	2.0	1.0	0.5	5	5
10	0.3	-0.7	0.3	-4	3
11	2.0	1.0	0.5	5	5
12	1.3	0.3	0.4	2	6
13	0.3	-0.7	0.3	-4	3
14	0.7	-0.4	0.4	-2	4
15	0.7	-0.4	0.4	-2	4
			Minimum:	-4	
			Maximum:	5	
			Average:	0.0	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AWL3
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	1.3	0.3	0.4	2	6
3	0.3	-0.7	0.3	-4	3
4	1.0	-0.1	0.4	0	4
5	1.3	0.3	0.4	2	6
6	1.0	-0.1	0.4	0	4
7	1.0	-0.1	0.4	0	4
8	0.0	-1.1	0.2	-6	3
9	0.0	-1.1	0.2	-6	3
10	1.0	-0.1	0.4	0	4
11	1.0	-0.1	0.4	0	4
12	0.7	-0.4	0.4	-2	4
13	0.3	-0.7	0.3	-4	3
14	2.0	1.0	0.5	5	5
15	0.3	-0.7	0.3	-4	3
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.3	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EFL1
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.3	0.3	0.4	2	6
3	0.7	-0.4	0.4	-2	4
4	0.7	-0.4	0.4	-2	4
5	0.3	-0.7	0.3	-4	3
6	0.3	-0.7	0.3	-4	3
7	1.0	-0.1	0.4	0	4
8	0.0	-1.1	0.2	-6	3
9	0.7	-0.4	0.4	-2	4
10	0.7	-0.4	0.4	-2	4
11	0.3	-0.7	0.3	-4	3
12	1.0	-0.1	0.4	0	4
13	1.0	-0.1	0.4	0	4
14	1.0	-0.1	0.4	0	4
15	0.7	-0.4	0.4	-2	4
			Minimum:	-6	
			Maximum:	2	
			Average:	-1.7	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EWL1
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.3	-0.7	0.3	-4	3
2	0.0	-1.1	0.2	-6	3
3	1.0	-0.1	0.4	0	4
4	1.0	-0.1	0.4	0	4
5	1.7	0.6	0.5	3	5
6	0.3	-0.7	0.3	-4	3
7	0.0	-1.1	0.2	-6	3
8	0.7	-0.4	0.4	-2	4
9	0.0	-1.1	0.2	-6	3
10	1.3	0.3	0.4	2	6
11	0.7	-0.4	0.4	-2	4
12	0.7	-0.4	0.4	-2	4
13	1.3	0.3	0.4	2	6
14	0.3	-0.7	0.3	-4	3
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	3	
			Average:	-1.9	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EFL2
Description: Reference Area
Survey Date: 11/14/2005
Analysis Date: 12/2/2005

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	0.7	-0.4	0.4	-2	4
3	1.3	0.3	0.4	2	6
4	0.3	-0.7	0.3	-4	3
5	1.0	-0.1	0.4	0	0
6	0.3	-0.7	0.3	-4	3
7	0.7	-0.4	0.4	-2	4
8	1.3	0.3	0.4	2	6
9	1.0	-0.1	0.4	0	0
10	0.7	-0.4	0.4	-2	4
11	3.7	2.6	0.7	14	7
12	2.7	1.6	0.6	9	7
13	1.0	-0.1	0.4	0	0
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	0
			Minimum:	-4	
			Maximum:	14	
			Average:	0.6	
			Sigma:	5	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No		
Instrument:	2929	176108	**Instrument Efficiency:**	0.73 cpm/epm
Detector:	43-10	181905	**Efficiency Uncertainty:**	0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EWL2
Description: Reference Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.3	0.3	0.4	2	6
2	1.3	0.3	0.4	2	6
3	0.3	-0.7	0.3	-4	3
4	0.0	-1.1	0.2	-6	3
5	0.3	-0.7	0.3	-4	3
6	0.3	-0.7	0.3	-4	3
7	0.0	-1.1	0.2	-6	3
8	1.3	0.3	0.4	2	6
9	0.3	-0.7	0.3	-4	3
10	0.3	-0.7	0.3	-4	3
11	0.3	-0.7	0.3	-4	3
12	1.0	-0.1	0.4	0	4
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	0.7	-0.4	0.4	-2	4
			Minimum:	-6	
			Maximum:	2	
			Average:	-2.3	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No		
Instrument:	2929	176108	**Instrument Efficiency:**	0.73 cpm/epm
Detector:	43-10	181905	**Efficiency Uncertainty:**	0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EFL4
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.0	-1.1	0.2	-6	3
2	1.7	0.6	0.5	3	5
3	0.7	-0.4	0.4	-2	4
4	1.3	0.3	0.4	2	6
5	1.3	0.3	0.4	2	6
6	1.0	-0.1	0.4	0	4
7	0.7	-0.4	0.4	-2	4
8	1.0	-0.1	0.4	0	4
9	1.0	-0.1	0.4	0	4
10	0.7	-0.4	0.4	-2	4
11	1.3	0.3	0.4	2	6
12	0.3	-0.7	0.3	-4	3
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	3	
			Average:	-0.6	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EWL04
Description: Storage Area
Survey Date: 7/13/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	2.0	1.0	0.5	5	5
2	0.0	-1.1	0.2	-6	3
3	0.3	-0.7	0.3	-4	3
4	0.7	-0.4	0.4	-2	4
5	1.3	0.3	0.4	2	6
6	1.7	0.6	0.5	3	5
7	1.0	-0.1	0.4	0	4
8	0.3	-0.7	0.3	-4	3
9	0.3	-0.7	0.3	-4	3
10	1.0	-0.1	0.4	0	4
11	0.7	-0.4	0.4	-2	4
12	1.0	-0.1	0.4	0	4
13	1.0	-0.1	0.4	0	4
14	1.7	0.6	0.5	3	5
15	0.0	-1.1	0.2	-6	3
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.0	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 4AFL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.3	-0.7	0.3	-4	3
2	0.0	-1.1	0.2	-6	3
3	1.3	0.3	0.4	2	6
4	0.7	-0.4	0.4	-2	4
5	1.0	-0.1	0.4	0	4
6	1.0	-0.1	0.4	0	4
7	1.0	-0.1	0.4	0	4
8	1.7	0.6	0.5	3	5
9	2.0	1.0	0.5	5	5
10	0.3	-0.7	0.3	-4	3
11	1.3	0.3	0.4	2	6
12	1.3	0.3	0.4	2	6
13	0.7	-0.4	0.4	-2	4
14	1.3	0.3	0.4	2	6
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	5	
			Average:	-0.1	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 4CFL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 8/7/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	1.0	-0.1	0.4	0	4
3	1.3	0.3	0.4	2	6
4	1.3	0.3	0.4	2	6
5	0.7	-0.4	0.4	-2	4
6	0.0	-1.1	0.2	-6	3
7	0.7	-0.4	0.4	-2	4
8	1.0	-0.1	0.4	0	4
9	0.3	-0.7	0.3	-4	3
10	0.3	-0.7	0.3	-4	3
11	1.3	0.3	0.4	2	6
12	1.3	0.3	0.4	2	6
13	1.7	0.6	0.5	3	5
14	0.7	-0.4	0.4	-2	4
15	0.3	-0.7	0.3	-4	3
			Minimum:	-6	
			Maximum:	3	
			Average:	-1.0	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 4CWL1
Description: Storage Area
Survey Date: 8/2/2006
Analysis Date: 11/21/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.7	0.6	0.5	3	5
2	1.0	-0.1	0.4	0	4
3	1.3	0.3	0.4	2	6
4	0.0	-1.1	0.2	-6	3
5	1.3	0.3	0.4	2	6
6	1.3	0.3	0.4	2	6
7	0.3	-0.7	0.3	-4	3
8	1.0	-0.1	0.4	0	4
9	2.0	1.0	0.5	5	5
10	0.3	-0.7	0.3	-4	3
11	1.7	0.6	0.5	3	5
12	1.3	0.3	0.4	2	6
13	0.7	-0.4	0.4	-2	4
14	0.3	-0.7	0.3	-4	3
15	2.0	1.0	0.5	5	5
			Minimum:	-6	
			Maximum:	5	
			Average:	0.3	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: RTFL1
Description: Reference Trailer
Survey Date: 7/26/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.3	0.3	0.4	2	6
3	0.3	-0.7	0.3	-4	4
4	0.7	-0.4	0.4	-2	4
5	0.3	-0.7	0.3	-4	4
6	0.3	-0.7	0.3	-4	4
7	0.3	-0.7	0.3	-4	4
8	0.7	-0.4	0.4	-2	4
9	0.3	-0.7	0.3	-4	3
10	1.0	-0.1	0.4	0	4
11	1.7	0.6	0.5	3	5
12	0.7	-0.4	0.4	-2	4
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-4	
			Maximum:	3	
			Average:	-1.5	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: RTWL1
Description: Reference Trailer
Survey Date: 7/13/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0.3	-0.7	0.3	-4	3
2	1.0	-0.1	0.4	0	4
3	0.3	-0.7	0.3	-4	3
4	0.3	-0.7	0.3	-4	3
5	0.0	-1.1	0.2	-6	3
6	0.0	-1.1	0.2	-6	3
7	2.0	1.0	0.5	5	5
8	0.3	-0.7	0.3	-4	3
9	2.0	1.0	0.5	5	5
10	1.3	0.3	0.4	2	6
11	1.7	0.6	0.5	3	5
12	1.7	0.6	0.5	3	5
13	1.3	0.3	0.4	2	6
14	0.7	-0.4	0.4	-2	4
15	1.3	0.3	0.4	2	6
			Minimum:	-6	
			Maximum:	5	
			Average:	-0.5	
			Sigma:	4	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: DTFL1
Description: Decontamination Trailer
Survey Date: 7/26/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.3	0.3	0.4	2	6
3	1.7	0.6	0.5	3	5
4	0.0	-1.1	0.2	-6	3
5	0.7	-0.4	0.4	-2	4
6	0.0	-1.1	0.2	-6	3
7	2.0	1.0	0.5	5	5
8	1.3	0.3	0.4	2	6
9	0.3	-0.7	0.3	-4	3
10	0.3	-0.7	0.3	-4	3
11	0.3	-0.7	0.3	-4	3
12	0.7	-0.4	0.4	-2	4
13	0.3	-0.7	0.3	-4	3
14	0.7	-0.4	0.4	-2	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.5	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: DTWL1
Description: Decontamination Trailer
Survey Date: 7/13/2006
Analysis Date: 11/20/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0.3	-0.7	0.3	-4	3
2	1.3	0.3	0.4	2	6
3	0.0	-1.1	0.2	-6	3
4	0.7	-0.4	0.4	-2	4
5	1.0	-0.1	0.4	0	4
6	1.0	-0.1	0.4	0	4
7	0.3	-0.7	0.3	-4	3
8	1.0	-0.1	0.4	0	4
9	0.0	-1.1	0.2	-6	3
10	1.0	-0.1	0.4	0	4
11	2.0	1.0	0.5	5	5
12	0.3	-0.7	0.3	-4	3
13	0.7	-0.4	0.4	-2	4
14	1.3	0.3	0.4	2	6
15	0.3	-0.7	0.3	-4	3
			Minimum:	-6	
			Maximum:	5	
			Average:	-1.5	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No		
Instrument:	2929	176108	**Instrument Efficiency:**	0.73 cpm/epm
Detector:	43-10	181905	**Efficiency Uncertainty:**	0.007 cpm/epm

Appendix E

Bias and Duplicates

APPENDIX E - BIAS AND DUPLICATES
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Summary of Static Measurements - Alpha

Survey Unit: Warehouses 1 C
Description: Ceiling & Upper Wall
Survey Date: 8/2/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1CCB01-1	4	3	2.0	28	44
1CCB01-2	0	-1	0.3	-16	8
1CWB01	1	0	1.0	-5	22

Minimum:	-16
Maximum:	28
Average:	2
Std Dev:	23

Analysis Parameters

Reference Area:	3EFL02	**Material Background:**	1.4 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: Warehouses 1 D
Description: Ceiling & Upper Wall
Survey Date: 8/2/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1DCB01-1	2	1	1.4	6	31
1DCB01-2	2	1	1.4	6	31
1DCB02-1	0	-1	0.3	-16	8
1DCB02-2	3	2	1.8	17	38
1DCB03-1	1	0	1.0	-5	22
1DCB03-2	0	-1	0.3	-16	8
1DWB01	5	4	2.3	39	49

Minimum:	-16
Maximum:	39
Average:	4
Std Dev:	20

Analysis Parameters

Reference Area:	3EFL02	**Material Background:**	1.4 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: Warehouse 3 A
Description: Ceiling & Upper Wall
Survey Date: 7/13/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
3ACB0-1	0	-1	0.3	-16	8
3ACB0-2	1	0	1.0	-5	22
3ACB1-1	0	-1	0.3	-16	8
3ACB1-2	0	-1	0.3	-16	8
3ACB2-1	0	-1	0.3	-16	8
3ACB2-2	0	-1	0.3	-16	8
3ACB3-1	1	0	1.0	-5	22
3ACB3-2	0	-1	0.3	-16	8
3ACB4-1	0	-1	0.3	-16	8
3ACB4-2	0	-1	0.3	-16	8
3AWB01	2	1	1.4	6	31
3AWB02	0	-1	0.3	-16	8
3AWB03	4	3	2.0	28	44

Minimum:	-16
Maximum:	28
Average:	-9
Std Dev:	13

Analysis Parameters

Reference Area:	3EFL02	**Material Background:**	1.4 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: Warehouse 3 E
Description: Ceiling & Upper Wall
Survey Date: 7/13/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
3ECB1-1	2	1	1.4	6	31
3ECB1-2	0	-1	0.3	-16	8
3ECB4-1	0	-1	0.3	-16	8
3ECB4-2	0	-1	0.3	-16	8
3EWB01	4	3	2.0	28	44
3EWB04	1	0	1.0	-5	22

Minimum: -16
Maximum: 28
Average: -3
Std Dev: 18

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Sample Time: 1 min
MDC: 72 αpm/100 cm²

Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.012 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: Warehouses 4 A
Description: Ceiling
Survey Date: 8/2/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
4ACB01-1	1	0	1.0	-5	22
4ACB01-2	4	3	2.0	28	44

Minimum:	-5
Maximum:	28
Average:	12
Std Dev:	23

Analysis Parameters

Reference Area:	3EFL02	**Material Background:**	1.4 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: Warehouses 4 C
Description: Ceiling & Upper Wall
Survey Date: 8/2/2006

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
4CCB01-1	1	0	1.0	-5	22
4CCB01-2	1	0	1.0	-5	22
4CWB01	2	1	1.4	6	31

Minimum:	-5
Maximum:	6
Average:	-1
Std Dev:	6

Analysis Parameters

Reference Area:	3EFL02	**Material Background:**	1.4 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	72 αpm/100 cm²
		Total Efficiency:	0.092 cpm/αpm
		Total Efficiency Uncertainty:	0.012 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.008 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: Warehouse Section 1 C
Description: Ceiling and Upper Wall Bias
Survey Date: 8/2/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
1CCB01-1	1.27	2	1.7	0.2	1.2	3	25
1CCB01-2	1.48	1	0.7	-0.7	0.7	-8	16
1CWB01	1.18	0	0.0	-1.4	0.3	-16	8
Total	3.93	3					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$	
2.25 ft²	6.75 ft²	3.7 sec	409	αpm/100 cm²

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: Warehouse Section 1 D
Description: Ceiling and Upper Wall Bias
Survey Date: 8/2/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
1DCB01-1	1.35	1	0.8	-0.7	0.8	-7	17
1DCB01-2	Data file corrupted.						
1DCB02-1	1.38	0	0.0	-1.4	0.3	-16	8
1DCB02-2	1.20	1	0.9	-0.6	0.9	-6	19
1DCB03-1	1.38	0	0.0	-1.4	0.3	-16	8
1DCB03-2	1.35	0	0.0	-1.4	0.3	-16	8
1DWB01	1.28	1	0.8	-0.6	0.8	-7	18
Total	7.95	3					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$	
2.25 ft²	13.5 ft²	3.8 sec	400	αpm/100 cm²

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm²
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: Warehouse Section 3 A
Description: Ceiling and Upper Wall Bias
Survey Date: 7/13/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
3ACB00-1	1.00	1	1.0	-0.4	1.1	-4	23
3ACB00-2	Data file corrupted.						
3ACB01-1	1.13	0	0.0	-1.4	0.3	-16	8
3ACB01-2	1.52	1	0.7	-0.8	0.7	-8	16
3ACB02-1	0.88	0	0.0	-1.4	0.3	-16	8
3ACB02-2	1.15	2	1.8	0.4	1.3	5	28
3ACB03-1	0.93	1	1.1	-0.3	1.1	-3	24
3ACB03-2	0.95	0	0.0	-1.4	0.3	-16	8
3ACB04-1	1.00	0	0.0	-1.4	0.3	-16	8
3ACB04-2	0.93	0	0.0	-1.4	0.3	-16	8
3AWB01	0.93	0	0.0	-1.4	0.3	-16	8
3AWB02	0.82	0	0.0	-1.4	0.3	-16	8
3AWB03	1.07	0	0.0	-1.4	0.3	-16	8
Total	12.32	5					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$
2.25 ft²	27 ft²	2.9 sec	517 αpm/100 cm²

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: Warehouse Section 3 E
Description: Ceiling and Upper Wall Bias
Survey Date: 7/13/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
3ECB01-1	1.22	0	0.0	-1.4	0.3	-16	8
3ECB01-2	1.17	0	0.0	-1.4	0.3	-16	8
3ECB04-1	1.03	0	0.0	-1.4	0.3	-16	8
3ECB04-2	1.53	3	2.1	0.7	1.2	7	26
3EWB01	1.17	2	1.8	0.4	1.3	4	27
3EWB04	0.78	1	1.3	-0.1	1.3	-1	29
Total	6.90	6					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$	
2.25 ft²	13.5 ft²	3.2 sec	468	αpm/100 cm²

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No
Instrument:	L2350-1	95357
Detector:	43-93	235487

Probe Area: 100 cm²
Instrument Efficiency: 0.215 cpm/epm
Efficiency Uncertainty: 0.011 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: Warehouses Section 4 A
Description: Ceiling Bias
Survey Date: 8/2/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
4ACB01-1	1.30	2	1.6	0.2	1.2	2	25
4ACB01-2	1.25	1	0.8	-0.6	0.9	-7	19
Total	2.55	3					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$	
2.25 ft²	4.5 ft²	3.5 sec	427	αpm/100 cm²

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No		
			Probe Area:	100 cm²
Instrument:	L2350-1	95357	**Instrument Efficiency:**	0.215 cpm/epm
Detector:	43-93	235487	**Efficiency Uncertainty:**	0.011 cpm/epm

Summary of Scan Results - Alpha

Survey Unit: WarehouseSection 4 C
Description: Ceiling and Upper Wall Bias
Survey Date: 8/2/2006

Location	Scan Time (min)	Total Counts	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CI
4CCB01-1	1.30	2	1.6	0.2	1.2	2	25
4CCB01-2	1.32	3	2.5	1.0	1.4	11	30
4CWB01	1.33	1	0.8	-0.7	0.8	-7	18
Total	3.95	6					

Scan Area per Point	Total Area Scanned	Average Residence Time	$scanMDC_{alpha}$	
2.25 ft^2	6.75 ft^2	3.6 sec	418	αpm/100 cm^2

Analysis Parameters

Reference Area: 3EFL02
Material: concrete
Material Background: 1.4 cpm
Background Count Time: 15 min

Surface Efficiency: 0.428 epm/αpm
Surface Uncertainty: 0.054 epm/αpm
Total Efficiency: 0.092 cpm/αpm
Total Efficiency Uncertainty: 0.013 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	95357	**Probe Area:**	100 cm^2
Detector:	43-93	235487	**Instrument Efficiency:**	0.215 cpm/epm
			Efficiency Uncertainty:	0.011 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: 1CFL1 Duplicates
Description: Storage Area
Survey Date: 11/15/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1	-4	1.1	-44	30
2	3	-2	1.8	-20	44
3	5	0	2.3	5	55
4	3	-2	1.8	-20	44
5	4	-1	2.1	-7	50
6	5	0	2.3	5	55
7	2	-3	1.5	-32	37
8	2	-3	1.5	-32	37
9	5	0	2.3	5	55
10	4	-1	2.1	-7	50
11	4	-1	2.1	-7	50
12	2	-3	1.5	-32	37
13	2	-3	1.5	-32	37
14	8	3	2.9	42	70
15	4	-1	2.1	-7	50
			Minimum:	-44	
			Maximum:	42	
			Average:	-12	
			Std Dev:	22	

Analysis Parameters

Reference Area:	3EFL2	**Material Background:**	4.6 cpm
Material:	concrete	**Background Count Time:**	15 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	37 αpm/100 cm²
		Total Efficiency:	0.082 cpm/αpm
		Total Efficiency Uncertainty:	0.011 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	180729	**Probe Area:**	100 cm²
Detector:	SHP380AB	00176	**Instrument Efficiency:**	0.191 cpm/epm
			Efficiency Uncertainty:	0.009 cpm/epm

Summary of Static Measurements - Alpha

Survey Unit: DTFL1 Bias
Description: Storage Area
Survey Date: 11/14/2005

Location	Gross (counts)	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	1	0	1.0	-5	25
2	0	-1	0.3	-17	8
3	3	2	1.8	20	42
4	1	0	1.0	-5	25
5	1	0	1.0	-5	25
6	1	0	1.0	-5	25
7	2	1	1.4	7	35
8	0	-1	0.3	-17	8
9	1	0	1.0	-5	25
10	2	1	1.4	7	35
11	3	2	1.8	20	42
12	1	0	1.0	-5	25
13	2	1	1.4	7	35
14	0	-1	0.3	-17	8
15	0	-1	0.3	-17	8
			Minimum:	-17	
			Maximum:	20	
			Average:	-2	
			Std Dev:	12	

Only instrument background used in this evaluation.

Analysis Parameters

Reference Area:	NA	**Instrument Background:**	1.4 cpm
Material:	Tile	**Background Count Time:**	20 min
Surface Efficiency:	0.428 epm/αpm	**Sample Time:**	1 min
Surface Uncertainty:	0.054 epm/αpm	**MDC:**	37 αpm/100 cm²
		Total Efficiency:	0.082 cpm/αpm
		Total Efficiency Uncertainty:	0.011 cpm/αpm

Instrument Data

	Model	Serial No		
Instrument:	L2350-1	180729	**Probe Area:**	100 cm²
Detector:	SHP380AB	00176	**Instrument Efficiency:**	0.191 cpm/epm
			Efficiency Uncertainty:	0.009 cpm/epm

Summary of Smear Measurements - Alpha

Survey Area: Warehouse 1 C
Description: Ceiling & wall bias measurements
Survey Date: 8/2/2006
Analysis Date: 11/25/2006

Location	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1CCB01-1	1.3	0.3	0.4	2	6
1CCB01-2	1.3	0.3	0.4	2	4
1CWB01	0.3	-0.7	0.3	-4	3

Minimum:	-4
Maximum:	2
Average:	0.0
Sigma:	3

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency:	0.73 cpm/epm
Efficiency Uncertainty:	0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Area: Warehouse 1 D
Description: Ceiling & wall bias measurements
Survey Date: 8/2/2006
Analysis Date: 11/25/2006

Location	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1DCB01-1	2.0	1.0	0.5	5	5
1DCB01-2	4.0	3.0	0.7	16	4
1DCB02-1	2.0	1.0	0.5	5	5
1DCB02-2	2.0	1.0	0.5	5	5
1DCB03-1	1.0	-0.1	0.4	0	0
1DCB03-2	2.0	1.0	0.5	5	5
1DWB01	2.0	1.0	0.5	5	5

Minimum: 0
Maximum: 16
Average: 5.9
Sigma: 5

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: Warehouse 3 A
Description: Ceiling & wall bias measurements
Survey Date: 7/13/2006
Analysis Date: 11/20/2006

Location	N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
3ACB00-1	1	0.3	-0.7	0.3	-4	3
3ACB00-2	2	1.0	-0.1	0.4	0	4
3ACB01-1	3	0.3	-0.7	0.3	-4	3
3ACB01-2	4	0.3	-0.7	0.3	-4	3
3ACB02-1	5	0.0	-1.1	0.2	-6	3
3ACB02-2	6	0.0	-1.1	0.2	-6	3
3ACB03-1	7	2.0	1.0	0.5	5	5
3ACB03-2	8	0.3	-0.7	0.3	-4	3
3ACB04-1	9	2.0	1.0	0.5	5	5
3ACB04-2	10	2.0	1.0	0.5	5	5
3AWB1	11	2.0	1.0	0.5	5	5
3AWB2	12	2.0	1.0	0.5	5	5
3AWB3	13	2.0	1.0	0.5	5	5

Minimum: -6
Maximum: 5
Average: 0.2
Sigma: 5

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: Warehouse 3 E
Description: Ceiling & wall bias measurements
Survey Date: 7/13/2006
Analysis Date: 11/20/2006

Location	N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
3ECB01-1	1	0.3	-0.7	0.3	-4	3
3ECB01-2	2	1.0	-0.1	0.4	0	4
3ECB04-1	3	0.3	-0.7	0.3	-4	3
3ECB04-2	4	0.3	-0.7	0.3	-4	3
3EWB1	5	0.0	-1.1	0.2	-6	3
3EWB4	6	0.0	-1.1	0.2	-6	3

Minimum: -6
Maximum: 0
Average: -4
Sigma: 2

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: Warehouse 4 A
Description: Ceiling & wall bias measurements
Survey Date: 8/2/2006
Analysis Date: 11/25/2006

Location	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm^2) Activity	Net (αpm/100 cm^2) Uncertainty @ 95% CL
4ACB01-1	1.3	0.3	0.4	2	6
4ACB01-2	2.0	1.0	0.5	5	4

Minimum: 2
Maximum: 5
Average: 3.5
Sigma: 2

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm^2
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm^2	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: Warehouse 4 C
Description: Ceiling & wall bias measurements
Survey Date: 8/2/2006
Analysis Date: 11/25/2006

Location	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
4CCB01-1	1.0	-0.1	0.4	0	0
4CCB01-2	0.7	-0.4	0.4	-2	4
4CWB01	0.7	-0.4	0.4	-2	4

Minimum: -2
Maximum: 0
Average: -1
Sigma: 1

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 1CFL1 Duplicates
Description: Storage Area
Survey Date: 11/15/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	0.7	-0.4	0.4	-2	4
3	1.3	0.3	0.4	2	6
4	1.3	0.3	0.4	2	6
5	1.3	0.3	0.4	2	4
6	1.7	0.6	0.5	3	5
7	1.7	0.6	0.5	3	5
8	1.0	-0.1	0.4	0	4
9	0.7	-0.4	0.4	-2	4
10	1.3	0.3	0.4	2	6
11	0.7	-0.4	0.4	-2	4
12	0.7	-0.4	0.4	-2	4
13	1.0	-0.1	0.4	0	4
14	1.3	0.3	0.4	2	6
15	1.0	-0.1	0.4	0	4
			Minimum:	-2	
			Maximum:	3	
			Average:	0.4	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: DTFL1 Bias
Description: Decontamination Trailer
Survey Date: 11/16/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	0.7	-0.4	0.4	-2	4
2	1.3	0.3	0.4	2	6
3	0.7	-0.4	0.4	-2	4
4	0.7	-0.4	0.4	-2	4
5	1.0	-0.1	0.4	0	4
6	1.0	-0.1	0.4	0	4
7	1.3	0.3	0.4	2	6
8	0.7	-0.4	0.4	-2	4
9	1.0	-0.1	0.4	0	4
10	1.0	-0.1	0.4	0	4
11	1.7	0.6	0.5	3	5
12	0.7	-0.4	0.4	-2	4
13	1.3	0.3	0.4	2	6
14	1.0	-0.1	0.4	0	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-2	
			Maximum:	3	
			Average:	-0.1	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL1 Duplicates
Description: Storage Area
Survey Date: 11/15/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.7	0.6	0.5	3	5
2	1.7	0.6	0.5	3	5
3	0.7	-0.4	0.4	-2	4
4	1.3	0.3	0.4	2	6
5	2.3	1.3	0.6	7	6
6	0.7	-0.4	0.4	-2	4
7	0.7	-0.4	0.4	-2	4
8	1.3	0.3	0.4	2	6
9	1.7	0.6	0.5	3	5
10	0.7	-0.4	0.4	-2	4
11	0.7	-0.4	0.4	-2	4
12	0.3	-0.7	0.3	-4	3
13	1.3	0.3	0.4	2	6
14	1.7	0.6	0.5	3	5
15	1.3	0.3	0.4	2	6
			Minimum:	-4	
			Maximum:	7	
			Average:	0.9	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL2 Duplicates
Description: Storage Area
Survey Date: 11/15/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.3	0.3	0.4	2	6
2	1.0	-0.1	0.4	0	4
3	0.7	-0.4	0.4	-2	4
4	1.0	-0.1	0.4	0	4
5	0.7	-0.4	0.4	-2	4
6	2.7	1.6	0.6	9	7
7	0.7	-0.4	0.4	-2	4
8	1.7	0.6	0.5	3	5
9	0.8	-0.3	0.4	-1	4
10	1.3	0.3	0.4	2	4
11	1.3	0.3	0.4	2	6
12	1.3	0.3	0.4	2	6
13	1.0	-0.1	0.4	0	4
14	1.3	0.3	0.4	2	6
15	2.0	1.0	0.5	5	4
			Minimum:	-2	
			Maximum:	9	
			Average:	1.3	
			Sigma:	3	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3AFL2 Duplicates
Description: Storage Area
Survey Date: 11/14/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.0	-0.1	0.4	0	4
2	1.0	-0.1	0.4	0	4
3	0.7	-0.4	0.4	-2	4
4	0.7	-0.4	0.4	-2	4
5	1.3	0.3	0.4	2	6
6	1.0	-0.1	0.4	0	4
7	1.0	-0.1	0.4	0	4
8	1.0	-0.1	0.4	0	4
9	0.7	-0.4	0.4	-2	4
10	1.7	0.6	0.5	3	4
11	1.0	-0.1	0.4	0	4
12	1.0	-0.1	0.4	0	4
13	1.3	0.3	0.4	2	4
14	1.0	-0.1	0.4	0	4
15	1.0	-0.1	0.4	0	4
			Minimum:	-2	
			Maximum:	3	
			Average:	0.1	
			Sigma:	1	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 3EFL4 Duplicates
Description: Storage Area
Survey Date: 11/14/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.7	0.6	0.5	3	5
2	1.3	0.3	0.4	2	6
3	1.0	-0.1	0.4	0	4
4	2.0	1.0	0.5	5	5
5	1.7	0.6	0.5	3	5
6	0.7	-0.4	0.4	-2	4
7	1.0	-0.1	0.4	0	4
8	0.7	-0.4	0.4	-2	4
9	1.3	0.3	0.4	2	4
10	1.0	-0.1	0.4	0	4
11	1.3	0.3	0.4	2	6
12	0.7	-0.4	0.4	-2	4
13	1.7	0.6	0.5	3	4
14	1.3	0.3	0.4	2	6
15	1.7	0.6	0.5	3	4
			Minimum:	-2	
			Maximum:	5	
			Average:	1.3	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm

Summary of Smear Measurements - Alpha

Survey Unit: 4CFL1 Duplicates
Description: Storage Area
Survey Date: 11/15/2005
Analysis Date: 11/25/2006

N	GCPM	NCPM	NCPM Uncertainty	Net (αpm/100 cm²) Activity	Net (αpm/100 cm²) Uncertainty @ 95% CL
1	1.3	0.3	0.4	2	6
2	1.7	0.6	0.5	3	4
3	0.7	-0.4	0.4	-2	4
4	1.0	-0.1	0.4	0	4
5	1.7	0.6	0.5	3	5
6	0.7	-0.4	0.4	-2	4
7	2.0	1.0	0.5	5	5
8	1.0	-0.1	0.4	0	4
9	1.3	0.3	0.4	2	6
10	0.7	-0.4	0.4	-2	4
11	1.7	0.6	0.5	3	5
12	0.7	-0.4	0.4	-2	4
13	1.0	-0.1	0.4	0	4
14	0.7	-0.4	0.4	-2	4
15	1.7	0.6	0.5	3	5
			Minimum:	-2	
			Maximum:	5	
			Average:	0.7	
			Sigma:	2	

Analysis Parameters

Instrument Background:	1.05 cpm	**Sample Time:**	3 min
Background Count Time:	20 min	**MDC:**	17 αpm/100 cm²
Surface Efficiency:	0.25 epm/dpm	**Total Eff.:**	0.183 cpm/dpm
Smear Area:	100 cm²	**Total Eff Uncert:**	0.010 cpm/dpm

Instrument Data

	Model	Serial No
Instrument:	2929	176108
Detector:	43-10	181905

Instrument Efficiency: 0.73 cpm/epm
Efficiency Uncertainty: 0.007 cpm/epm