

# **Radioactive Materials Handling Facility**

# **Current Radiological Status**

March 16, 2007

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# **RMHF Current Radiological Status**

The following radiation survey data provides an overview of the current radiological status of the various buildings and structures that comprise the Radioactive Materials Handling Facility (RMHF). The surveys include routine area surveys and remedial action support surveys.

### **Facility Exterior Dose Rates**

General area dose rates in the areas outside of the buildings and within the RMHF fence line range from a background of 10  $\mu$ R/hr to 500  $\mu$ R/hr<sup>1</sup>.

### **Non-contaminated Buildings and Rooms**

In addition to contaminated buildings, the RMHF also includes numerous buildings and temporary structures that are non-contaminated (clean). Buildings 4034, 4044, 4075, 4621, 4665, two cargo vans and the Laundry and Change Trailer have been surveyed clean. The high bay of 4022 and the former Laundry Room, former Cold Change Room and former Hot Change Room of 4021 have also been surveyed clean. These areas are surveyed on a routine basis for removable contamination and radiation dose-rate.

In the last 6 months, no removable contamination above 100 dpm/100cm<sup>2</sup> beta or 20 dpm/100cm<sup>2</sup> alpha have been detected in these clean areas<sup>2</sup>. The majority of dose-rates are background level radiation. All of the dose-rates above background can be attributed to shine from adjacent contaminated areas or radioactive waste and sealed source containers. The highest dose-rate in the clean areas is 150  $\mu$ R/hr in the former 4021 Hot Change Room due to shine from the 4021 Package Room.

Surveys of upper horizontal surfaces were recently performed in the 4022 High Bay prior to vacuuming and lead paint abatement. Those areas indicated all below regulatory limits of 1,000 dpm/100cm<sup>2</sup> removable beta and 5,000 dpm/100cm<sup>2</sup> total beta<sup>3</sup>.

The above ground portions of buildings 4034, 4044, 4665, 4621, 4075 and 4022 are scheduled for additional surveys prior to release and disposal as decommissioned material.

## **Contaminated Buildings**

## 4022 Vaults One Through Seven

The seven below ground vaults and the inlet and outlet ventilation tunnels were decontaminated in 2006 to levels appropriate for removal and disposal as low-level radioactive waste. The survey maps show the details of the remaining total beta activity in counts per minute (cpm).

<sup>&</sup>lt;sup>1</sup> The measure of dose rate or exposure rate is micro-roentgens per hour ( $\mu$ R/hr) or milli-roentgens per hour (mR/hr).

<sup>&</sup>lt;sup>2</sup> The measure of surface contamination is disintegrations per 100 square centimeters  $(dpm/100cm^2)$ .

<sup>&</sup>lt;sup>3</sup> Limits for free release of equipment or material are specified in DOE Order 5400.5 "Radiation Protection of the Public and Environment."

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These numbers may be converted to  $dpm/100cm^2$  by multiplying the cpm by 50 (efficiency factor of 10 and probe area factor of 5). Table 1 summarizes the activities on the vault maps.

## 4021 Decon Room and Package Room

The 4021 Decon Room and Package Room are posted contamination areas. Equipment in these rooms is contaminated. The most contaminated piece of equipment has a dose-rate of 30 mR/hr on contact, a total beta reading of 15,000,000 dpm/100cm<sup>2</sup> and removable beta of 600,000 dpm/100cm<sup>2</sup>. The room general area dose-rates are from 0.2 to1.6 mR/hr. General area floor contamination levels are all less than 1,000 dpm/10cm<sup>2</sup>. A hot spot on the Package Room floor reads 10 mR/hr on contact.

Vault #	Direct Reading Minimum β dpm/100cm <sup>2</sup>	Direct Reading Maximum β dpm/100cm <sup>2</sup>	Estimated Direct Reading Median β dpm/100cm <sup>2</sup>
1	< 4170	50,000	16,667
2	< 4170	62,500	4,170
3	< 4170	1,666,667	416,667
4	< 4170	833,333	62,500
5	< 4170	333,333	25,000
6	< 4170	1,500,000	83,333
7	< 4170	1,458,333	125,000
Inlet Tunnel	< 4170	750,000	< 4,170
Exhaust Tunnel	< 4170	1,500,000	125,000

## Table 1: Total Beta Contamination in the 4022 Below-Ground Vaults

There is one small and one large floor drain in each room. The highest reading drain is 2.8 mR/hr gamma and 72 mrad/hr beta on contact. The overhead horizontal surfaces in both rooms read a maximum of 4,700 dpm/100cm<sup>2</sup> removable and 150,000 dpm/100cm<sup>2</sup> total beta.

There are six ventilation ducts, upstream of the high efficiency particulate air (HEPA) ventilation/filtration system. The highest of these ducts reads 1,200,000 dpm/100cm<sup>2</sup> removable beta and 20,000,000 dpm/100cm<sup>2</sup> total beta.

# 4021 Sump Drain Tank Pit

Outside of and just west of 4021 is a sub-surface pit that held the 4021 sump drain tank. The tank was removed in past remediation efforts. The maximum readings in the remaining pit are  $32,000 \text{ dpm}/100 \text{ cm}^2$  removable beta,  $380 \text{ dpm}/100 \text{ cm}^2$  removable alpha;  $5,800,000 \text{ dpm}/100 \text{ cm}^2$  total beta, 6 mR/hr gamma exposure on contact, and 50 mrad/hr beta on contact.

# **Pending Surveys**

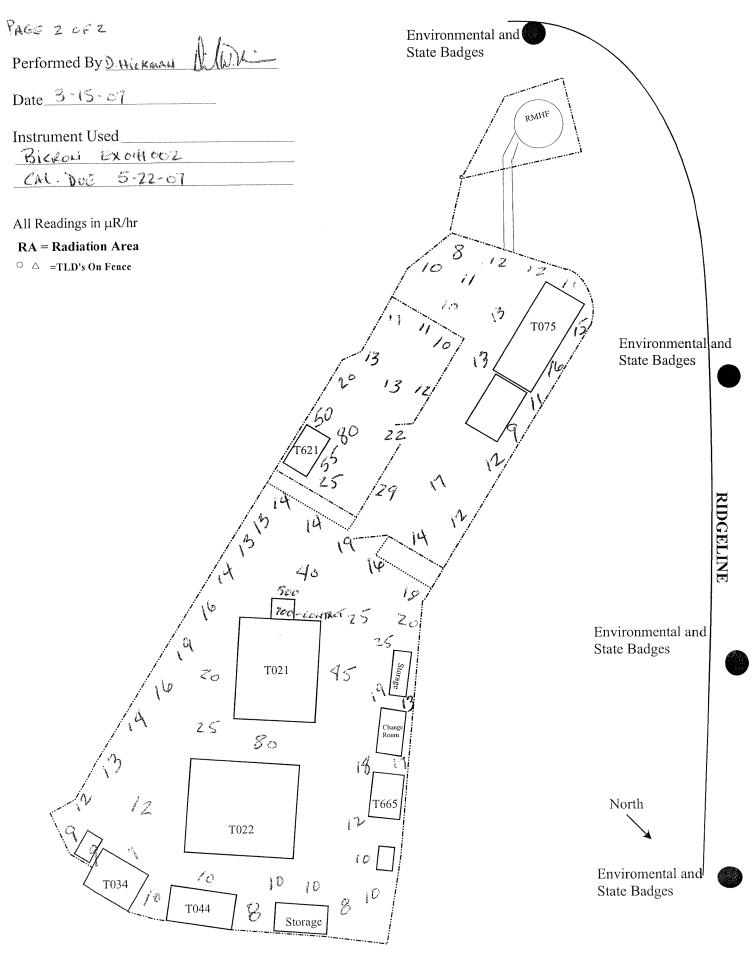
The 4022 deep well drain sump, just outside and south of 4022 and the under-floor drain lines in 4021 are scheduled for future characterization surveys.



# **Exterior Fenced Yard of RMHF**

B	BDEING	۵ ۲				FACILITY: RM	RMHF			
			RADIATION SURVEY	EY REPORT		LOCATION: Yard	rd			
SAMPLE	DATE	DATE	PURPOSE: Status/routine	۲ ח	UNITS	uR/hr				
NUMBER	SAMPLED	ANALYZED	DESCRIPTION		LIMIT	N/A				
×.	3/15/2007	3/15/2007	Status/routine Survey of the RMHF Yard.			See Attached				
COMMENTS:	NTS:			INSTRUMENT		Bicron				
				<b>IDENTIFICATION</b>		EX041002				
				CALIBRATION DUE		5/22/2007				
				BACKGROUND		N/A				
			~	EFFICIENCY		N/A				
SAMPLED BY:		D. W. Hickman	ANALY	COUNT TIME		N/A				
REVIEWED BY:		an wed	2 Mr DATE: 3-16-0/			Page	-	of	2	
FORM 732-A REV 10-2005						)			ł	

# **RMHF FACILITY SURVEY DIAGRAM**

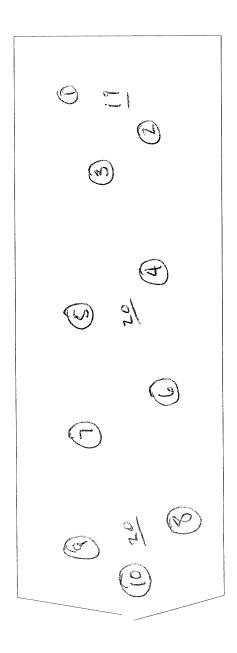


BDEING	»D			FACILITY:	RMHF		
`		KADIALIUN JUKVET KEPURI	REFURI	LOCATION:	Yard		
SAMPLE DATE	TE DATE	Purpose: Status/Routine	UNITS	S α dpm/100cm sq	$\beta\gamma$ dpm/100cm sq	uR/Hr	
<u>ر</u> ې	AP 		LIMIT	T 20	100	N/A	
1 3/16/2007	2007 3/16/2007	Status/routine Survey of Storage "C" van # 2		<20	<100	See Attached	
2							
3							
4							
5							
9							
7							
~							
6							
10				•			
	•						
COMMENTS:		<u> </u>	INSTRUMENT	TEN	TENNELEC	Bicron	
			<b>IDENTIFICATION</b>	NR(	NR007137	EX041002	
		<u> </u>	CALIBRATION DUE	D	DAILY	5/22/2007	
Tennelec MD	A = 14 dpm/10(	Tennelec MDA = 14 dpm/100 cm <sup>2</sup> $\alpha$ and 26 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND	.02 cpm	4.10 cpm	NA	
NA=Not Applicable	able	8 	EFFICIENCY	32.85%	38.69%	NA	
SAMPLED BY:	D.W. Hickman	ANALYZED BY: (U.)	COUNT TIME	1	1 MIN	NA	
REVIEWED BY:	KR. Marl	in DATE: 3-(b-07	See Attachment	Page	0	of 3	
FORM 732-A REV 10-05							

RMHF STORAGE "C" VAN #2 SURVEY DIAGRAM

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sults	$dpm/100cm^2 \beta$	< 00			Tonus				0000 <b></b>		elo																									
Smear Res	$dpm/100cm^2 \alpha$	<.20								40.00 M	>																									
0.57	₽ (#)		2	3	4	5	9	2	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35



NAME: D. Hickman M. M.

DATE: 3-16-07

= Dose Rate in  $\mu R/hr$ (#) = Smear Locations #1

CAL. DUE 5-22-07

BICRON: Exouros

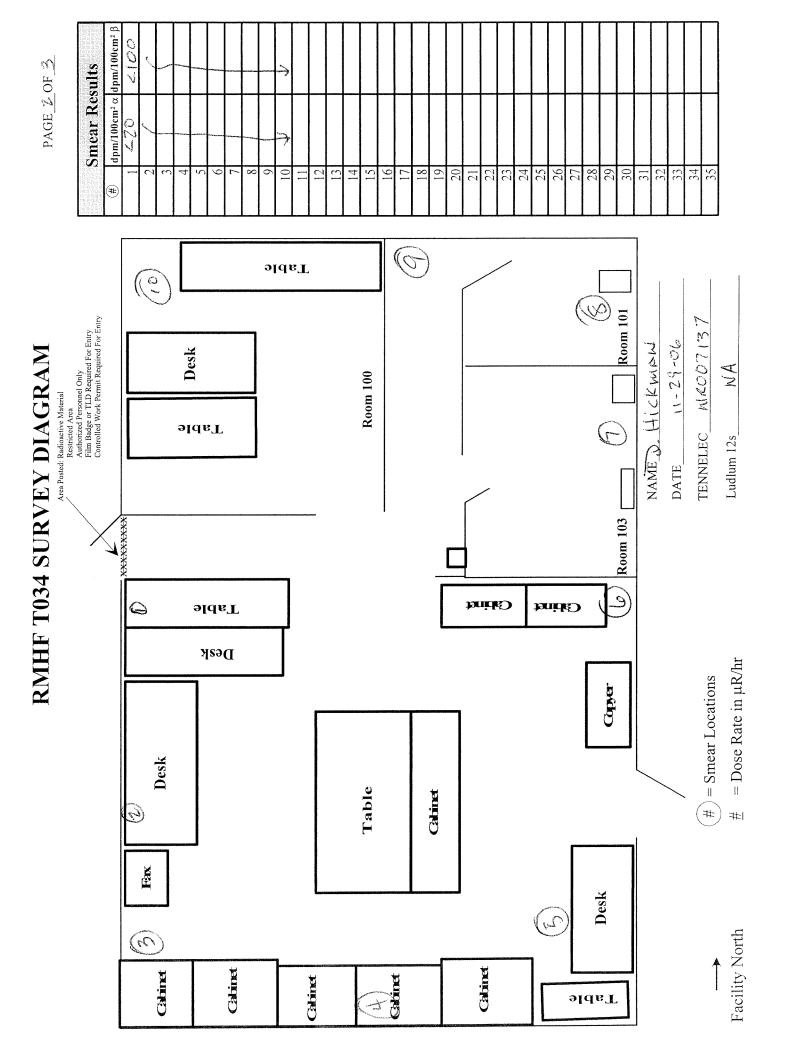
TENNELEC: <u>MADON 37</u>

Batch ID:	Smears 1 Minute 0	Count - 200	070316091	0	Coun	t Date:	3/16/2007 9:10:03AI	М
Group:	А				Count	Minute	<b>s:</b> 1.00	
Device:	RMHF Tennelec (1	NR 007137	7)		Count	Mode:	Simultaneous	
Batch Key:	500				Opera	ting Vo	l <b>ts:</b> 1477	
Selected	Swipe/Smear		Comme	nts: Storage	e "C" van			
Backg	ground (cpm)		Efl	ficiency (%)				
Alpha Rate:	0.20 ± 0	.14	Alpha:	32.85 ±	0.98			
Beta Rate:	4.10 ± 0	.42	Beta:	38.69 ±	0.98			
Sample ID	Sample Type	<u>Alpha</u>	Unc	Alpha MDA	Beta	<u>Unc</u>	Beta MDA	
		<u>(dpm)</u>		<u>(dpm)</u>	<u>(dpm)</u>		<u>(dpm)</u>	
20070316091003-A1	Unknown	-0.61	0.43	14.00	7.49	6.93	26.00	
20070316091134-A2	Unknown	2.44	3.08	14.00	-8.01	2.81	26.00	
20070316091244-A4	Unknown	2.44	3.08	14.00	7.49	6.93	26.00	
20070316091354-A3	Unknown	-0.61	0.43	14.00	10.08	7.40	26.00	
20070316091514-A5	Unknown	-0.61	0.43	14.00	-5.43	3.82	26.00	
20070316091624-A6	Unknown	-0.61	0.43	14.00	-5.43	3.82	26.00	
20070316091734-A7	Unknown	-0.61	0.43	14.00	12.66	7.84	26.00	
20070316091844-A8	Unknown	-0.61	0.43	14.00	10.08	7.40	26.00	
20070316092004-A9	Unknown	2.44	3.08	14.00	7.49	6.93	26.00	
20070316092114-A10	Unknown	2.44	3.08	14.00	4.91	6.43	26.00	

3/16/2007 9:22:28AM



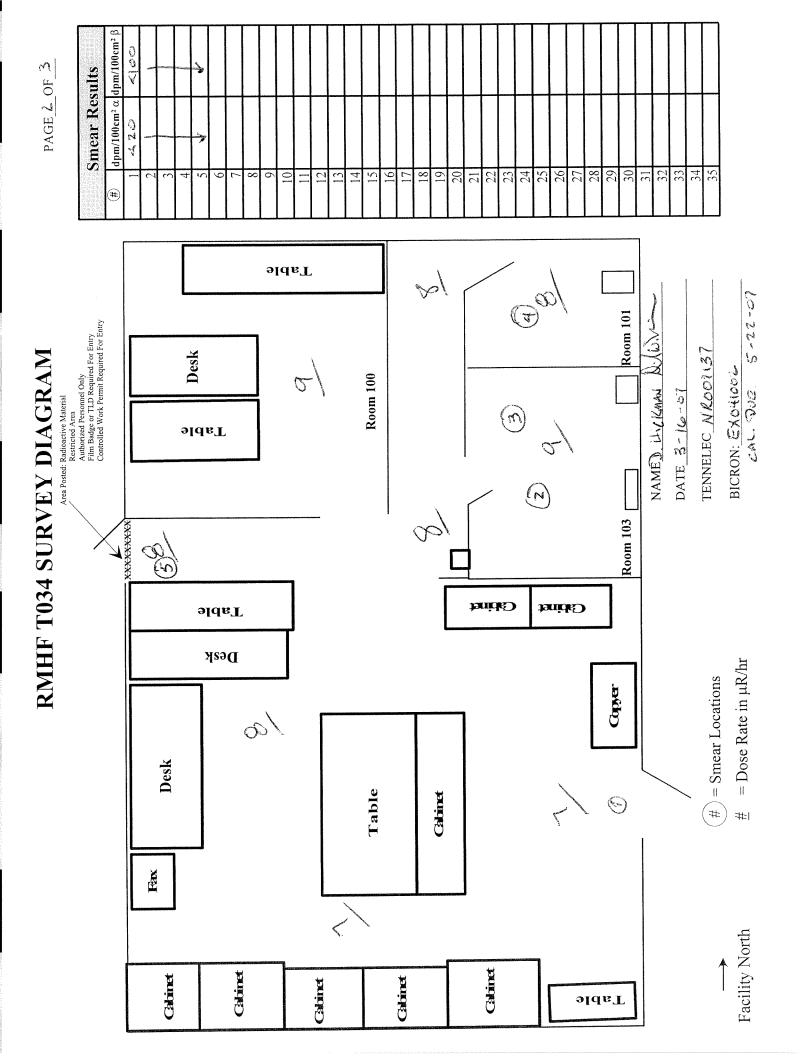
B	BDEING	ş,			FACILITY:	RMHF		
2			<b>RADIATION SURVEY I</b>	REPORT	LOCATION:	Bldg. 034		Π
SAMPLE	DATE	DATE	PURPOSE: Status	UNITS	S $\alpha  dpm/100 cm^2$	$\beta \text{ dpm/100cm}^2$		
NUMBER	SAMPLED	ANALYZED	DESCRIPTION			100		T
~	11/29/2006	11/29/2006	Smear survey of walls and ledges.		<20	<100		
2	11/29/2006	11/29/2006						Τ
З	11/29/2006	11/29/2006						
4	11/29/2006	11/29/2006						
5	11/29/2006	11/29/2006					-	
9	11/29/2006	11/29/2006						
7	11/29/2006	11/29/2006						
8	11/29/2006	11/29/2006						
6	11/29/2006	11/29/2006	•					
								Π
								Π
								Т
COMMENTS:	NTS:		4	INSTRUMENT	Ten	Tennelec		
				<b>IDENTIFICATION</b>	NR 0	NR 007137		
	Tennelec M	10A: 13 dpr	Tennelec MDA: 13 dpm/100cm <sup>2</sup> $\alpha$ ; 24 dpm/100 cm2 $\beta$	CALIBRATION DUE		Daily		
1/10012-0-100-0-1			â	BACKGROUND	0.15 cpm	3.25		
*****			Λ Χ	EFFICIENCY	32.97%	38.54%		
SAMPLED	D. W. Hickman	nan	N.M. C.	COUNT TIME	1 MIN	1 MIN		
REVIEWED BY:	1	un wessimn	DATE: 11-29-06		Page	-	of 3	
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Batch ID:	Smears 1 Minute (	Count - 20	061129131	1	Coun	t Date:	11/29/2006 1:11:37PM
Group:	А				Count	Minute	<b>s:</b> 1.00
Device:	RMHF Tennelec (I	NR 00713	7)		Count	Mode:	Simultaneous
Batch Key:	609				Opera	ting Vo	lts: 1477
Selected	Swipe/Smear		Comme	ents:			
Backg	ground (cpm)		Ef	ficiency (%)			
Alpha Rate:	0.15 ± 0	.21	Alpha:	32.97 ±	0.98		
Beta Rate:	$3.25 \pm 0$	.35	Beta:	38.54 ±	0.97		
Sample ID	Sample Type	Alpha	Unc	Alpha MDA	Beta	<u>Unc</u>	Beta MDA
0004400424427 44	Unknown	<u>(dpm)</u> -0.45	0.64	(dpm) 13.00	<u>(dpm)</u> -3.24	3.78	<u>(dpm)</u> 24.00
0061129131137-A1 0061129131308-A2	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00
0061129131418-A3	Unknown	5.61	4.34	13.00	4.54	5.88	24.00
0061129131538-A4	Unknown	-0.45	0.64	13.00	12.33	7.40	24.00
0061129131648-A5	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00
0061129131758-A6	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00
0061129131908-A7	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00
20061129132028-A8	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00
20061129132138-A9	Unknown	-0.45	0.64	13.00	14.92	7.85	24.00
20061129132248-A10	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00

Page  $\underline{3}$  of  $\underline{3}$ C:\Eclipse\sample report.rpt 11/29/2006 1:24:02PM

BDEING	PARIATION CURVEY PERO	DT	FACILITY:	RMHF		
	KADIALIUN SURVET REFUN		LOCATION:	4034		
SAMPLE DATE DATE	E Purpose: Status/Routine	UNITS	$\alpha$ dpm/100cm sq	$\beta\gamma$ dpm/100cm sq	uR/Hr	
SAMPLED AN		LIMIT	20	100	N/A	
1 3/16/2007 3/16/2007	2007 Status/routine Survey of Building 4034		<20	<100	See Attached	
2						
3						
4						
S V	•					
COMMENTS:	INSTRUMENT	ENT	TEN	TENNELEC	Bicron	
Smears are of tile areas. (Carpet in office areas)		ATION	NR(	NR007137	EX041002	
	CALIBRATION DUE	<b>FION DUE</b>	D.	DAILY	5/22/2007	
Tennelec MDA = 14 dpm	Tennelec MDA = 14 dpm/100 cm <sup>2</sup> $\alpha$ and 26 dpm/ 100 cm <sup>2</sup> $\beta$ BACKGROUND	DUND	.02 cpm	4.10 cpm	NA	
NA=Not Applicable	EFFICIENCY	сY	32.85%	38.69%	NA	
SAMPLED BY: D.W. Hickman	ANALY	IME		1 MIN	NA	
REVIEWED BY: CD A	Construction DATE: Zalbeon	chment 🛒	Page	е 1	of	3



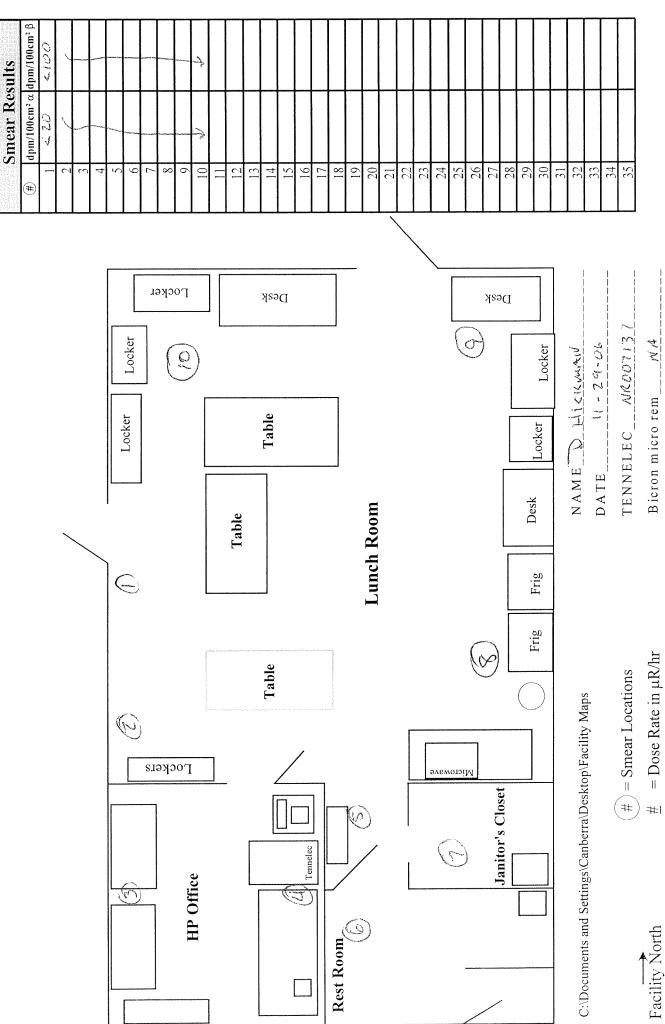
Batch ID:	Smears 1 Minute C	ount - 200	70316094	6	Coun	t Date:	3/16/2007 9:46:24AM
Group:	A				Count	Minutes:	1.00
Device:	RMHF Tennelec (N	IR 007137	)		Count	Mode:	Simultaneous
Batch Key:	501				Opera	ting Volts	<b>s:</b> 1477
Selected	Swipe/Smear		Comme	nts: 4034			
Backg	ground (cpm)		Eft	ficiency (%)			
Alpha Rate: Beta Rate:		14 42	Alpha: Beta:	32.85 ± 38.69 ±	0.98 0.98		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	<u>Unc</u>	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
0070316094624-A1 0070316094755-A2 0070316094905-A4 0070316095015-A3 0070316095135-A5	Unknown Unknown Unknown Unknown Unknown	-0.61 -0.61 -0.61 2.44 -0.61	0.43 0.43 0.43 3.08 0.43	14.00 14.00 14.00 14.00 14.00	-0.26 -0.26 12.66 -2.84 -2.84	5.28 5.28 7.84 4.61 4.61	26.00 26.00 26.00 26.00 26.00



BL	BOEING	ę			FAC	FACILITY:	RMHF		
			<b>RADIATION SURVEY</b>	EY REPORT	LOC	LOCATION:	Bldg, 044		
SAMPLE	DATE	DATE	PURPOSE: Status	NN		$\alpha$ dpm/100cm <sup>2</sup>	β dpm/100cm <sup>2</sup>		
NUMBER	SAMPLED	ANALYZED	DESCRIPTION	ΓI	LIMIT	20	100		
-	11/29/2006	11/29/2006	Smear survey of walls and ledges.			<20	<100		
2	11/29/2006	11/29/2006							
e	11/29/2006	11/29/2006							
4	11/29/2006	11/29/2006							
5	11/29/2006	11/29/2006							
9	11/29/2006	11/29/2006							
7	11/29/2006	11/29/2006							
8	11/29/2006	11/29/2006							
ດ	11/29/2006	11/29/2006	•			-	•		
					-				
COMMENTS:	VTS:			INSTRUMENT		Tennelec	elec		
				<b>IDENTIFICATION</b>		NR 007137	7137		
	Tennelec M	IDA: 13 dpn	Tennelec MDA: 13 dpm/100cm $^2$ $lpha$ ; 24 dpm/100 cm2 $eta$	CALIBRATION DUE		Daily	ily		
				BACKGROUND		0.15 cpm	3.25		
			-	EFFICIENCY		32.97%	38.54%		
SAMPLED	N. Hich	nan	ANALYZED BY: ( W )	COUNT TIME		1 MIN	1 MIN		
REVIEWED BY:	C B	WE DW	MMN DATE: 11-29-06			Page	~	of 3	~
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**RMHF T044 SURVEY DIAGRAM** 

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Bicron micro rem\_\_\_\_

N A

Batch ID:	Smears 1 Minute C	Count - 200	061129132	4	Coun	t Date:	11/29/2006 1:24:48PM
Group:	A				Count	Minute	<b>s:</b> 1.00
Device:	RMHF Tennelec (N	NR 007137	<b>'</b> )		Count	Mode:	Simultaneous
Batch Key:	610				Opera	ting Vo	l <b>ts:</b> 1477
Selected	Swipe/Smear		Comme	nts:			
Backg	round (cpm)		Eff	iciency (%)			
Alpha Rate: Beta Rate:		.21 .35	Alpha: Beta:	32.97 ± 38.54 ±	0.98 0.97		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	<u>Unc</u>	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
20061129132448-A1	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00
20061129132619-A2	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00
20061129132729-A3	Unknown	-0.45	0.64	13.00	12.33	7.40	24.00
20061129132839-A4	Unknown	-0.45	0.64	13.00	1.95 4.54	5.27 5.88	24.00 24.00
20061129132959-A5	Unknown	-0.45	0.64 0.64	13.00 13.00	4.54 9.73	5.88 6.93	24.00
20061129133109-A6	Unknown Unknown	-0.45 -0.45	0.64	13.00	9.73 7.14	6.42	24.00
20061129133219-A7 20061129133339-A8	Unknown	-0.45	0.64	13.00	9.73	6.93	24.00
200611291333449-A9	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00
20061129133559-A10	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00

11/29/2006 1:37:14PM

BDEING	*9		PADIATION SUBVEV REDORT	V REDORT		FACILITY:	RMHF		
						LOCATION:	4044		
SAMPLE DA	DATE DATE	щ	Purpose: Status/Routine		UNITS	α dpm/100cm sq	βγ dpm/100cm sq	uR/Hr	
	SAMPLED ANALYZED	/ZED	DESCRIPTION		LIMIT	20	100	N/A	
1 3/16/	3/16/2007 3/16/2007		Status/routine Survey of Building 4044			<20	<100	See Attached	
2									
3									
4									
5									
6									
7									
8									
6									
10									
11									
12									
13.									
14									
15	<b></b>	·							
COMMENTS:				INSTRUMENT		TENI	TENNELEC	Bicron	
				<b>IDENTIFICATION</b>		NRO	NR007137	EX041002	
				CALIBRATION DUE		DA	DAILY	5/22/2007	
Tennelec MD	\A = 14 dpm/	1100 v	Tennelec MDA = 14 dpm/100 cm <sup>2</sup> $\alpha$ and 26 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND		.02 cpm	4.10 cpm	NA	
NA=Not Applicable	cable		A. 4.	EFFICIENCY		32.85%	38.69%	NA	
SAMPLED BY:	D.W. Hickman	kman	ANALYZED BY, U. JU, N.	COUNT TIME		1	1 MIN	NA	
REVIEWED BY:	45	Al Sal	WW DATE: 3-16-07	See Attachment of		Page		of	3
FORM 732-A REV 10-05	>								

# **RMHF T044 SURVEY DIAGRAM**

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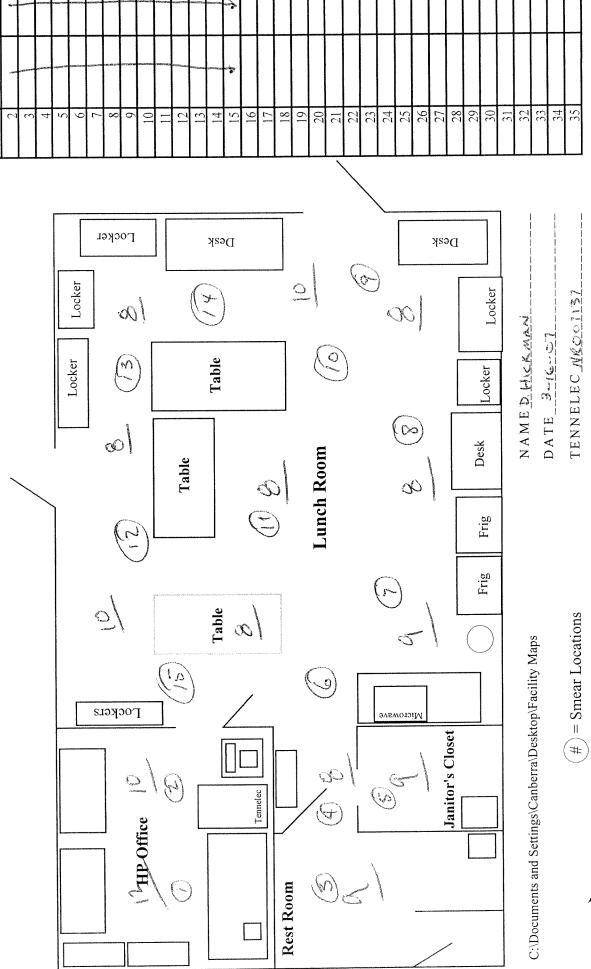
 $dpm/100cm^2 \alpha |dpm/100cm^2 \beta|$ 

#

**Smear Results** 

<100 <1

420



Facility North

= Dose Rate in  $\mu$ R/hr

#|

COLSUE 5-22-07 Bicron micro rem Exo4/00 L

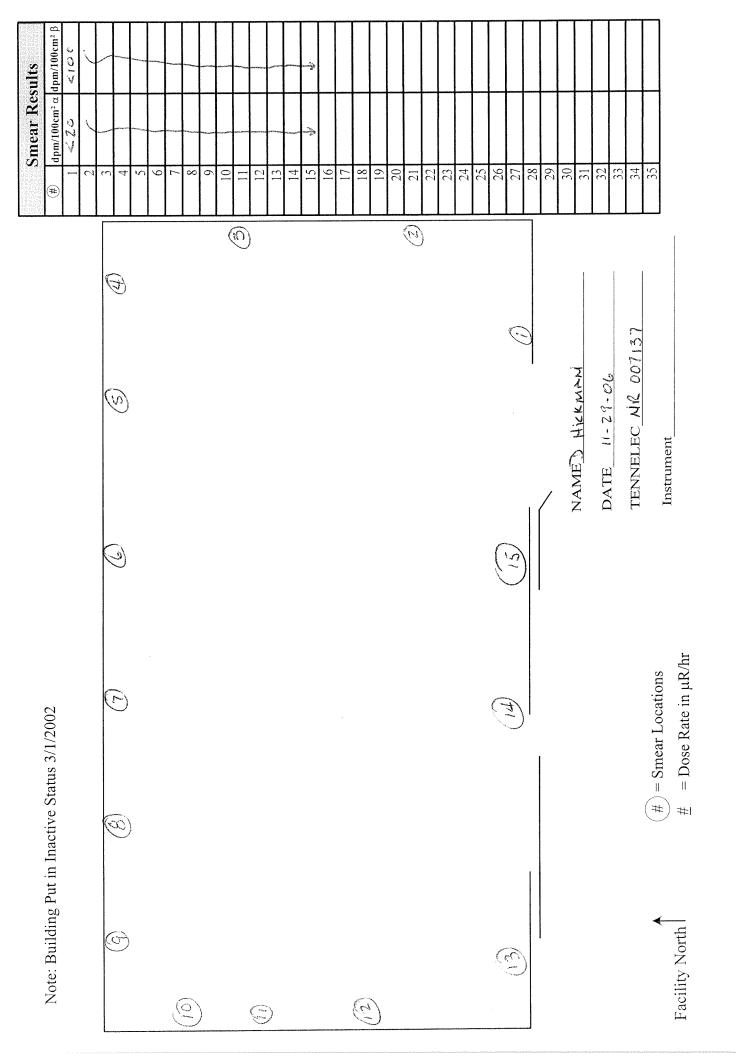
Batch ID:	Smears 1 Minute (	Count - 20	070316083	5	Coun	t Date:	3/16/2007 8:35:23AI
Group:	A				Count	t Minutes	<b>s:</b> 1.00
Device:	RMHF Tennelec (I	NR 00713 <sup>.</sup>	7)		Count	t Mode:	Simultaneous
Batch Key:	499				Opera	ating Vol	lts: 1477
Selected	Swipe/Smear		Comme	nts: 4044		<u>j</u>	
	Owiperonical						
Back	ground (cpm)		Ef	ficiency (%)			
Alpha Rate: Beta Rate:		.14 .42	Alpha: Beta:	32.85 ± 38.69 ±	0.98 0.98		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	Unc	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
0070316083523-A1	Unknown	2.44	3.08	14.00	2.33	5.88	26.00
20070316083654-A2	Unknown	-0.61	0.43	14.00	10.08	7.40	26.00
0070316083804-A4	Unknown	-0.61	0.43	14.00	-0.26	5.28	26.00
0070316083914-A3	Unknown	-0.61	0.43	14.00	-2.84	4.61	26.00
0070316084034-A5	Unknown	-0.61	0.43	14.00	10.08	7.40	26.00
0070316084144-A6	Unknown	-0.61	0.43	14.00	-0.26	5.28	26.00
20070316084254-A7	Unknown	5.48	4.33	14.00	2.33	5.88	26.00
20070316084404-A8	Unknown	-0.61	0.43	14.00	4.91	6.43	26.00
20070316084524-A9	Unknown	2.44	3.08	14.00	4.91	6.43	26.00
20070316084633-A10	Unknown	-0.61	0.43	14.00	4.91	6.43	26.00
0070316084744-A11	Unknown	-0.61	0.43	14.00	2.33	5.88	26.00
0070316084854-A12	Unknown	-0.61	0.43	14.00	4.91	6.43	26.00
0070316085013-A13	Unknown	-0.61	0.43	14.00	-2.84	4.61	26.00
20070316085124-A14	Unknown	-0.61	0.43	14.00	2.33	5.88	26.00
0070316085234-A15	Unknown	-0.61	0.43	14.00	-2.84	4.61	26.00



BL	BDEING	ية.			FACILITY:	RMHF		
2			<b>RADIATION SURVEY</b>	REPORT	LOCATION:	Bldg. 075		
SAMPLE	DATE	DATE	PURPOSE: Status	UNITS	S $\alpha$ dpm/100cm <sup>2</sup>	β dpm/100cm <sup>2</sup>		T
NUMBER	SAMPLED	ANALYZED	DESCRIPTION	LIMIT		100		T
1	11/29/2006	11/29/2006	Smear survey of walls and ledges.		<20	<100		Т
2	11/29/2006	11/29/2006						T
3	11/29/2006	11/29/2006						
4	11/29/2006	11/29/2006						Ī
2	11/29/2006	11/29/2006						
9	11/29/2006	11/29/2006						
7	11/29/2006	11/29/2006						Т
8	11/29/2006	11/29/2006						
6	11/29/2006	11/29/2006						Τ
10	11/29/2006	11/29/2006						
	11/29/2006	11/29/2006						
12		11/29/2006						
13	11/29/2006	11/29/2006						Τ
14	11/29/2006	11/29/2006						Τ
15	11/29/2006	11/29/2006						Τ
								Γ
								T
								Γ
								Т
COMMENTS:	NTS:			INSTRUMENT	Ten	Tennelec		
Terrent Martin				IDENTIFICATION	NR 0	NR 007137		T
	Tennelec M	IDA: 13 dpr	Tennelec MDA: 13 dpm/100cm <sup>2</sup> $\alpha$ ; 24 dpm/100 cm2 $\beta$	CALIBRATION DUE		Daily		
				BACKGROUND	0.15 cpm	3.25		
				EFFICIENCY	32.97%	38.54%		
SAMPLED	D. W. Hickman	nan	MUDN.	COUNT TIME	1 MIN	1 MIN		
REVIEWEI	REVIEWED BY:	11/23 IM	ANTO DATE: 11-296		Page	~	of 3	
	/ 10 DUNE	12						







Batch ID:	Smears 1 Minute	Count - 20	061129101	1	Coun	t Date:	11/29/2006 10:11:40AN
Group:	А				Count	t Minute	<b>s:</b> 1.00
Device:	RMHF Tennelec (	NR 00713	7)		Count	t Mode:	Simultaneous
Batch Key:	604				Opera	ating Vo	lts: 1477
Selected	Swipe/Smear		Comme	ents:			
Back	ground (cpm)		Ef	ficiency (%)			
Alpha Rate: Beta Rate:		).21 ).35	Alpha: Beta:	32.97 ± 38.54 ±	0.98 0.97		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	<u>Unc</u>	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
20061129101140-A1	Unknown	2.58	3.10	13.00	-3.24	3.78	24.00
20061129101311-A2	Unknown	2.58	3.10	13.00	12.33	7.40	24.00
20061129101421-A3	Unknown	2.58	3.10	13.00	9.73	6.93	24.00
20061129101541-A4	Unknown	2.58	3.10	13.00	-5.84	2.76	24.00
20061129101651-A5	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00
20061129101801-A6	Unknown	-0.45	0.64	13.00	17.52	8.27	24.00
20061129101911-A7	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00
20061129102031-A8	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00
20061129102141-A9	Unknown	-0.45	0.64	13.00	14.92	7.85	24.00
20061129102251-A10	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00
20061129102401-A11	Unknown	-0.45	0.64	13.00	9.73	6.93	24.00
20061129102521-A12	Unknown	-0.45	0.64	13.00	9.73	6.93	24.00
20061129102631-A13	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00
20061129102741-A14	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00
20061129102851-A15	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00

11/29/2006 10:30:16AM

BDI	BDEING					FACILITY:	RMHF		
			KADIALIUN SURVET KEPURI			LOCATION:	4075		
SAMPLE	DATE	DATE	Purpose: Status/routine	<u>٦</u>	UNITS	α dpm/100cm sq	$\beta\gamma$ dpm/100cm sq	uR/Hr	
NUMBER	SAMPLED	ANALYZED	DESCRIPTION		LIMIT	20	100	N/A	
	3/15/2007	3/15/2007	Status/routine Survey of Building 4075			<20	<100	See Attached	
1									
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19									
20	->	->				->			
COMMENTS:	ITS:			INSTRUMENT		TEND	TENNELEC	Bicron	
				IDENTIFICATION		NR0(	NR007137	EX041002	
				CALIBRATION DUE		DA	DAILY	5/22/2007	
Tennelec	: MDA = 1	1 dpm/100	Tennelec MDA = 11 dpm/100 cm $^2$ $lpha$ and 24 dpm/ 100 cm $^2$ $eta$	BACKGROUND		.05 cpm	3.25 cpm	NA	
NA=Not Applicable	vpplicable		Υ Υ	EFFICIENCY		33.07%	38.84%	NA	
SAMPLED BY:		D.W. Hickman	ANALYZED BY: (LUL)	COUNT TIME		1 N	1 MIN	NA	
REVIEWED BY:	) BY: GD	2 Mer	2 Mora DATE: 5-16-07	See Attachment 🕱		Page		of	3
EODM 732 A DEV 10.05									

# **RMHF T075 SURVEY DIAGRAM**

PAGE 2 OF 3

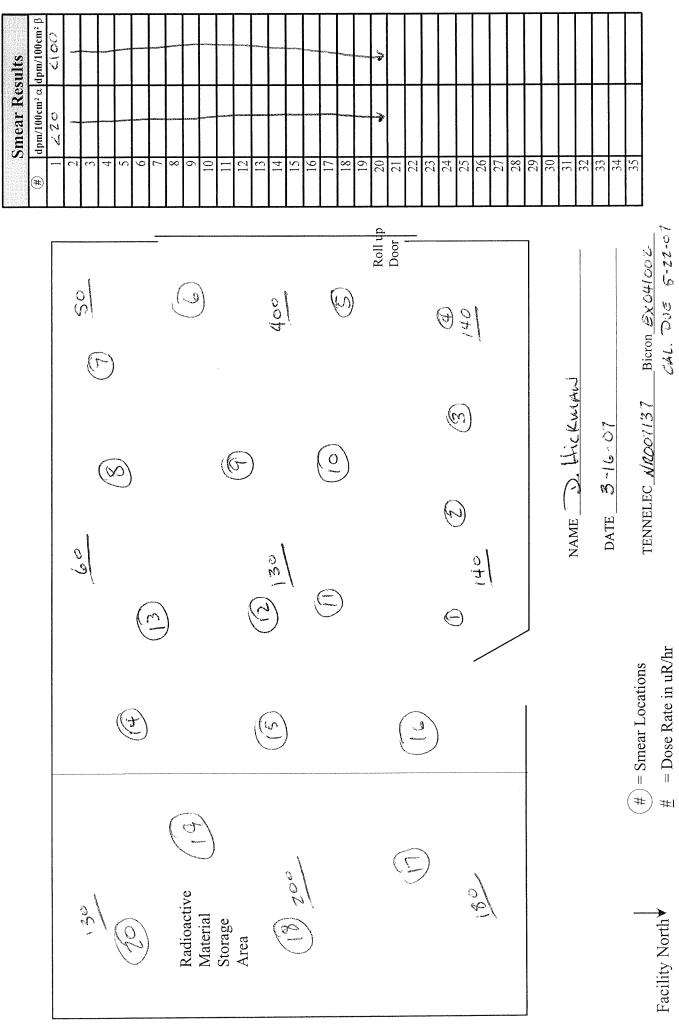
Smear Results (#) dpm/100cm <sup>2</sup> α dpm/100cm <sup>2</sup> β 1 2 2 2 2 00	2 5 6 7 7 8 8 8 9	10 11 12 13 14 14 15 15	17 17 18 19 20 20 22 22 22	24 25 26 27 28 28	29 30 31 32 33 33 33 34 35
	5 J J	9 1 9	17 17 17	0	NAMED.Hickman W. K. N. DATE 2-15-01 TENNELEC NICOOTIST Instrument BicKON EXOGI 002 Cal. DUG 5-22-07
Status 3/1/2002	5 (2) 3 10		) (2) (2) (2)	(6) ) ) (6) ) (9)	$\begin{aligned} \text{NAN} \\ \text{NAN} \\ \text{DAT} \\ \text{DAT} \\ \text{TEN} \\$
Note: Building Put in Inactive Status 3/1/2002	0(5)	(F) (F) (F)	3-16	91 7.01	Facility North

Batch ID:	Smears 1 Minute	Count - 20	0703150842	2	Coun	t Date:	3/15/200	7 8:42:58AN
Group:	A				Count	t Minutes	<b>s:</b> 1.00	
Device:	RMHF Tennelec (	NR 00713	7)		Count	Mode:	Simultan	eous
Batch Key:	491				Opera	ating Vol	<b>ts:</b> 1477	
-			•	4075	•	U		
Selected	Swipe/Smear		Comme	nts: 4075				
Backg	ground (cpm)		Eff	iciency (%)				
Alpha Rate: Beta Rate:		).07 ).21	Alpha: Beta:	33.07 ± 38.84 ±	0.99 0.98			
Sample ID	Sample Type	Alpha	Unc	Alpha MDA	Beta	Unc	Beta MDA	
Sample ID	<u>Sumple (195</u>	(dpm)		(dpm)	(dpm)		(dpm)	
0070315084258-A1	Unknown	-0.15	0.21	11.00	12.23	7.31	24.00	
20070315084428-A2	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00	
20070315084539-A4	Unknown	-0.15	0.21	11.00	12.23	7.31	24.00	
20070315084648-A3	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00	
20070315084808-A5	Unknown	2.87	3.03	11.00	-3.22	3.68	24.00	
20070315084918-A6	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00	
20070315085028-A7	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00	
20070315085148-A8	Unknown	-0.15	0.21	11.00	12.23	7.31	24.00	
20070315085259-A9	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00	
20070315085408-A10	Unknown	2.87	3.03	11.00	-0.64	4.49	24.00	
20070315085518-A11	Unknown	-0.15	0.21	11.00	1.93	5.18	24.00	
20070315085638-A12	Unknown	2.87	3.03	11.00	9.65	6.84	24.00	
20070315085749-A13	Unknown	2.87	3.03	11.00	1.93	5.18	24.00	
20070315085859-A14	Unknown	-0.15	0.21	11.00	-0.64	4.49	24.00	
20070315090008-A15	Unknown	2.87	3.03	11.00	1.93	5.18	24.00	
20070315090128-A16	Unknown	-0.15	0.21	11.00	-0.64	4.49	24.00	
20070315090238-A17	Unknown	2.87	3.03	11.00	19.95	8.57	24.00	
20070315090348-A18	Unknown	-0.15	0.21	11.00	-0.64	4.49	24.00	
20070315090458-A19	Unknown	2.87	3.03	11.00	-3.22	3.68	24.00	
20070315090618-A20	Unknown	2.87	3.03	11.00	-0.64	4.49	24.00	



BDEING	* 2		PADIATION SUBVEV PEDADT	ΙΕΥ ΡΕΡΩΡΤ		FACILITY:	RMHF		
						LOCATION:	4621		
SAMPLE DA	DATE	DATE	Purpose: Status/routine	5	UNITS	α dpm/100cm sq	βγ dpm/100cm sq	uR/Hr	
	SAMPLED	ANALYZED	DESCRIPTION		LIMIT	20	100	N/A	
1 3/16/	3/16/2007	3/16/2007	Status/routine Survey of Building 4621			<20	<100	See Attached	
2									
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COMMENTS:				INSTRUMENT		TENN	TENNELEC	Bicron	
Elevated dose ra	ates at c	lue to store	Elevated dose rates at due to stored sealed sources.	<b>IDENTIFICATION</b>		NR0(	NR007137	EX041002	
				CALIBRATION DUE		DA	DAILY	5/22/2007	
Tennelec MD.	A = 14	dpm/100	Tennelec MDA = 14 dpm/100 cm $^2$ $lpha$ and 26 dpm/ 100 cm $^2$ $eta$	BACKGROUND		.2 cpm	4.10 cpm	NA	
NA=Not Applicable	cable		20	EFFICIENCY		32.85%	38.69%	NA	
SAMPLED BY:		D.W. Hickman	8 ANALYZ	COUNT TIME		11	1 MIN	NA	
REVIEWED BY:		GR ME	2 min DATE: 3-16-07	See Attachment		Page	1	of	3
	1								





Batch ID:	Smears 1 Minute	Count - 20	070316114	2	Coun	t Date:	3/16/2007 11:42:51AM
Group:	A				Coun	t Minute	<b>s:</b> 1.00
Device:	RMHF Tennelec (	NR 007137	7)		Coun	t Mode:	Simultaneous
Batch Key:	502				Oper	ating Vo	lts: 1477
Selected	Swipe/Smear		Comme	nts: Buildin	a 4621	-	
					5		·····
Backg	ground (cpm)		Eff	ficiency (%)			
Alpha Rate: Beta Rate:		).14 ).42	Alpha: Beta:	$32.85 \pm 38.69 \pm$	0.98 0.98		
Sample ID	Sample Type	Alpha	Unc	Alpha MDA	<u>Beta</u>	Unc	Beta MDA
		(dpm)		<u>(dpm)</u>	<u>(dpm)</u>		<u>(dpm)</u>
0070316114251-A1	Unknown	2.44	3.08	14.00	7.49	6.93	26.00
0070316114422-A2	Unknown	2.44	3.08	14.00	12.66	7.84	26.00
0070316114532-A4	Unknown	2.44	3.08	14.00	-0.26	5.28	26.00
0070316114642-A3	Unknown	-0.61	0.43	14.00	-0.26	5.28	26.00
0070316114802-A5	Unknown	-0.61	0.43	14.00	4.91	6.43	26.00
0070316114912-A6	Unknown	8.52	5.30	14.00	4.91	6.43	26.00
0070316115022-A7	Unknown	5.48	4.33	14.00	2.33	5.88	26.00
0070316115132-A8	Unknown	-0.61	0.43	14.00	2.33	5.88	26.00
0070316115252-A9	Unknown	-0.61	0.43	14.00	7.49	6.93	26.00
0070316115402-A10	Unknown	2.44	3.08	14.00	25.59	9.75	26.00
0070316115512-A11	Unknown	5.48	4.33	14.00 14.00	15.25 4.91	8.25 6.43	26.00 26.00
0070316115622-A12	Unknown	2.44	3.08	14.00	2.33	6.43 5.88	26.00
0070316115742-A13	Unknown	-0.61 5.48	0.43 4.33	14.00	2.33	5.88	26.00
0070316115852-A14	Unknown	5.48 5.48	4.33	14.00	17.83	5.66 8.65	26.00
0070316120002-A15	Unknown Unknown	5.48 -0.61	4.33 0.43	14.00	7.49	6.93	26.00
0070316120113-A16	Unknown Unknown	-0.61	0.43	14.00	4.91	0.93 6.43	26.00
0070316120222-A17	Unknown	-0.61	0.43	14.00	-2.84	0.43 4.61	26.00
0070316120342-A18 0070316120452-A19	Unknown	-0.61	0.43	14.00	-0.26	5.28	26.00
0070316120452-A19	Unknown	-0.61	0.43	14.00	-0.20	6.93	26.00



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BI	BDEINC	ŝ				FACILITY:	RMHF			
			<b>RADIATION SURV</b>	<b>URVEY REPORT</b>		LOCATION:	Bldg. 665			
SAMPLE	DATE	DATE	PURPOSE: Status		UNITS	$\alpha$ dpm/100cm <sup>2</sup>	$\beta$ dpm/100cm <sup>2</sup>			
NUMBER	SAMPLED	ANALYZED	DESC	DESCRIPTION	LIMIT	20	100			
-	11/29/2006	11/29/2006	Smear survey of walls and ledges.	ges.		<20	<100			
2	11/29/2006	11/29/2006								
ю	11/29/2006	11/29/2006								
4	11/29/2006	11/29/2006								
5	11/29/2006	11/29/2006								
6	11/29/2006	11/29/2006								
7	11/29/2006	11/29/2006								
8	11/29/2006	11/29/2006								
6	11/29/2006	11/29/2006								
10	1	11/29/2006				-				
										-
COMMENTS:	NTS:			INSTRUMENT		Tent	Tennelec			
				IDENTIFICATION		NR 0	NR 007137			
	Tennelec M	10A: 13 dpn	Tennelec MDA: 13 dpm/100cm^2 $\alpha;$ 24 dpm/100 cm2 $\beta$	β CALIBRATION DUE	Щ	Õ	Daily			
				BACKGROUND		0.15 cpm	3.25			
				EFFICIENCY		32.97%	38.54%			
SAMPLED	D. W. Hickman	nan	ANALYZED BY: U. U. N.	COUNT TIME		1 MIN	1 MIN			
REVIEWED BY	DBY:	MAS N	MWN DATE: 11-29-06	~0 j0		Page	<b>~</b>	of	с С	

FORM 732-A REV 10-2005

### **RMHF T665 SURVEY DIAGRAM**

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 $dpm/100cm^2 \alpha dpm/100cm^2 \beta$ 

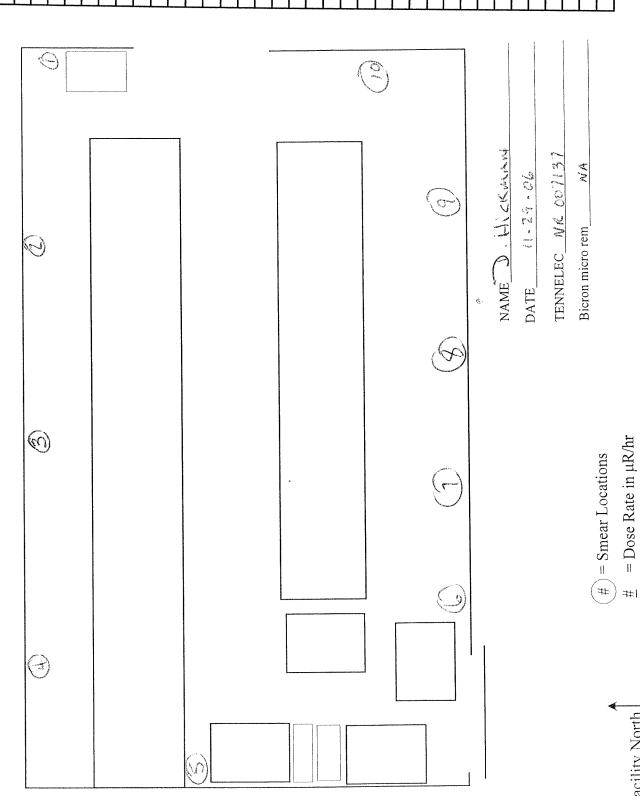
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**Smear Results** 

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Facility North

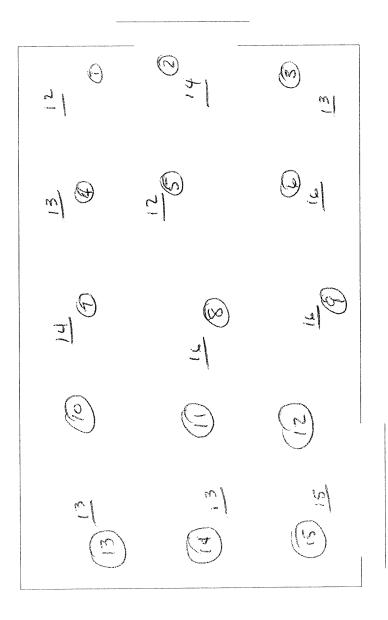
### Sample Report

Batch ID:	Smears 1 Minute (	Count - 20	061129125	8	Coun	t Date:	11/29/2006 12:58	:25PN
Group:	А				Count	t Minute	s: 1.00	
Device:	RMHF Tennelec (I	NR 00713	7)		Count	Mode:	Simultaneous	
Batch Key:	608				Opera	ating Vo	<b>ts:</b> 1477	
Selected	Swipe/Smear		Comme	nts:				
Backg	ground (cpm)		Eff	ficiency (%)				
Alpha Rate: Beta Rate:		.21 .35	Alpha: Beta:	32.97 ± 38.54 ±	0.98 0.97			
Sample ID	Sample Type	<u>Alpha</u> (dpm)	Unc	Alpha MDA (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)	
0061129125825-A1	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00	
0061129125956-A2	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00	
0061129130106-A3	Unknown	2.58	3.10	13.00	-0.65	4.59	24.00	
0061129130226-A4	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00	
0061129130336-A5	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00	
0061129130446-A6	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00	
0061129130556-A7	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00	
0061129130716-A8	Unknown	-0.45	0.64	13.00	4.54	5.88 6.93	24.00 24.00	
0061129130826-A9	Unknown	-0.45	0.64	13.00	9.73	6 0 3	2/1 [10]	

BD	BDEING		VIIIS NOLEVIAN		FACILITY:	RMHF		
2					LOCATION:	4665		
SAMPLE	DATE	DATE	Purpose: Status/Routine	UNITS	TS $\alpha  dpm/100 cm  sq$	q $\beta \gamma  dpm/100 cm  sq$	uR/Hr	
NUMBER	SAMPLED	ANALYZED	DESCRIPTION	LIMIT	IT 20	100	N/A	
1	3/15/2007	3/15/2007	Status/routine Survey of Building 4665		<20	<100	See Attached	
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COMMENTS:	NTS:			INSTRUMENT	TE	TENNELEC	Bicron	
				<b>IDENTIFICATION</b>	Z	NR007137	EX041002	
- Weit and all and				CALIBRATION DUE		DAILY	5/22/2007	
Tennele	c MDA = 1	11 dpm/100	Tennelec MDA = 11 dpm/100 cm $^2$ $lpha$ and 24 dpm/ 100 cm $^2$ $eta$	BACKGROUND	.05 cpm	3.25 cpm	NA	
NA=Not .	NA=Not Applicable			EFFICIENCY	33.07%	38.84%	NA	
SAMPLED	BY: D	D.W. Hickman	ANALYZ	COUNT TIME		1 MIN	NA	
REVIEWED BY:		4.2 MM 23	Jun DATE: 3-16-07	See Attachment	Ρá	Page 1	of	3

## **RMHF T665 SURVEY DIAGRAM**

sults	$dpm/100cm^2\beta$	< 100	,						-	vicuosa	-		Charter was		40 aprox	オ																				
Smear Re	$dpm/100cm^2 \ \alpha$	~ 2 C	· · · · ·				100 <b>1</b> -71401						98. <sup>1</sup> 3034784			Ą																				
	₽ (#		7	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35



DATE: 3-15-07

NAME: D. Hickman

# = Smear Locations $# = \text{Dose Rate in } \mu R/\text{hr}$ 

TENNELEC: NK 007137

CALL DUG. 5-22-01

BICRON: EXOHIDOZ

Facility North

### Sample Report

Batch ID:	Smears 1 Minute	Count - 200	070315092	4	Coun	t Date:	3/15/2007 9:24:04AN
Group:	A				Count	t Minutes	<b>s:</b> 1.00
Device:	RMHF Tennelec	(NR 007137	7)		Count	t Mode:	Simultaneous
Batch Key:	492				Opera	ating Vol	ts: 1477
Selected	Swipe/Smear		Comme	ents: 4665			
Backg	ground (cpm)		Ef	ficiency (%)			
Alpha Rate: Beta Rate:		0.07 0.21	Alpha: Beta:	33.07 ± 38.84 ±	0.99 0.98		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	<u>Unc</u>	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
20070315092404-A1	Unknown	-0.15	0.21	11.00	1.93	5.18	24.00
20070315092535-A2	Unknown	-0.15	0.21	11.00	12.23	7.31	24.00
20070315092645-A4	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315092755-A3	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
0070315092915-A5	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00
20070315093025-A6	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
0070315093135-A7	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315093245-A8	Unknown	-0.15	0.21	11.00	30.25	10.01	24.00
20070315093405-A9	Unknown	-0.15	0.21	11.00	9.65	6.84	24.00
20070315093515-A10	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315093625-A11	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315093735-A12	Unknown	-0.15	0.21	11.00	-8.37	0.59	24.00
20070315093855-A13	Unknown	-0.15	0.21	11.00	-3.22	3.68	24.00
20070315094005-A14	Unknown	-0.15	0.21	11.00	-5.79	2.64 4.49	24.00 24.00
20070315094115-A15	Unknown	2.87	3.03	11.00	-0.64	4.49	24.00



**Building 4022** 

BI	BOEING	ų,			FACILITY:	RMHF		
			<b>RADIATION SURVEY</b>	REPORT	LOCATION:	Bldg. 022		
SAMPLE	DATE	DATE	PURPOSE: Status	UNITS	S $\alpha  dpm/100 cm^2$	β dpm/100cm <sup>2</sup>		
NUMBER	SAMPLED	ANALYZED	DESCRIPTION			100		
۲-	11/29/2006	11/29/2006	Smear survey of walls and ledges.		<20	<100		
2	11/29/2006	11/29/2006						
C	11/29/2006	11/29/2006						
4	11/29/2006	11/29/2006						
5	11/29/2006	11/29/2006						
9	11/29/2006	11/29/2006						
7	11/29/2006	11/29/2006						
8	11/29/2006	11/29/2006						
σ	11/29/2006	11/29/2006						
10	11/29/2006	11/29/2006						
11	11/29/2006	11/29/2006						
12	11/29/2006	11/29/2006						
13	11/29/2006	11/29/2006						
14	11/29/2006	11/29/2006						
15	11/29/2006	11/29/2006			•	-		
COMMENTS	NTS:			INSTRUMENT	Tent	Tennelec		
				<b>IDENTIFICATION</b>	NR 00	NR 007137		
	Tennelec M	IDA: 13 dpr	Tennelec MDA: 13 dpm/100cm $^2$ $lpha$ ; 24 dpm/100 cm2 $eta$	CALIBRATION DUE	Ď	Daily		
				BACKGROUND	0.15 cpm	3.25		
				EFFICIENCY	32.97%	38.54%		
SAMPLED	D. W. Hickman	nan	A NW. Vice	COUNT TIME	1 MIN	1 MIN		
REVIEWEI	REVIEWED BY: GL MAS	13, in	DATE: N-29-N		Page		of 3	
FORM 732-A REV 10-2005	V 10-2005	1 N 1 N 1 N 1 N 1 N 1 N 1 N 1 N 1 N 1 N						

### **RMHF T022 HIGH BAY SURVEY DIAGRAM**

6) Workbench 7 B Safe CAM Ś) Ú 9 3 10) Û) Z, Trash Compactor 12 Ð (13 (15) ) = Smear Locations (# NAME DATE 11-29.06 RO-2 NA Facility North | <u>#</u> = Dose Rate in mR/hr

PAGE ZOF 3

### Sample Report

Batch ID:	Smears 1 Minute	Count - 20	061129123	7	Coun	t Date:	11/29/2006 12:37:3	2PM
Group:	А				Count	t Minute	<b>s:</b> 1.00	
Device:	RMHF Tennelec (	NR 00713	7)		Count	t Mode:	Simultaneous	
Batch Key:	607				Opera	ating Vo	lts: 1477	
-			•					
Selected	Swipe/Smear		Comme	ents:				
Backg	ground (cpm)		Ef	ficiency (%)				
Alpha Rate: Beta Rate:		).21 ).35	Alpha: Beta:	32.97 ± 38.54 ±	0.98 0.97			
Sample ID	Sample Type	<u>Alpha</u>	Unc	Alpha MDA	Beta (dnm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)	
20061129123732-A1	Unknown	<u>(dpm)</u> -0.45	0.64	<u>(dpm)</u> 13.00	<u>(dpm)</u> 9.73	6.93	24.00	
20061129123732-A1	Unknown	-0.45	0.64	13.00	14.92	7.85	24.00	
20061129124013-A3	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00	
0061129124133-A4	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00	
0061129124243-A5	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00	
0061129124353-A6	Unknown	-0.45	0.64	13.00	4.54	5.88	24.00	
0061129124503-A7	Unknown	-0.45	0.64	13.00	-3.24	3.78	24.00	
20061129124623-A8	Unknown	-0.45	0.64	13.00	7.14	6.42	24.00	
20061129124733-A9	Unknown	-0.45	0.64	13.00	9.73	6.93	24.00	
20061129124843-A10	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00	
20061129124953-A11	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00	
20061129125113-A12	Unknown	2.58	3.10	13.00	-5.84	2.76	24.00	
20061129125223-A13	Unknown	-0.45	0.64	13.00	-0.65	4.59	24.00	
20061129125333-A14	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00	
20061129125443-A15	Unknown	-0.45	0.64	13.00	1.95	5.27	24.00	

11/29/2006 12:56:08PM

7					<b>1</b>				
BB	BDEING					FACILITY:	RMHF		
\$			<b>RADIATION SURVEY</b>	REPORT		LOCATION:	4022 High Bay	X	
SAMPLE	DATE	DATE	PURPOSE: Before Zenco Lead Paint Abatement and Vacuuming UNITS	nent and Vacuuming	UNITS	dpm/100 cm <sup>2</sup> $\alpha$	*dpm/100 cm <sup>2</sup> $\beta$	dp $m/100~cm^2$ $\beta$	
NUMBER	SAMPLED	ANALYZED	DESCRIPTION		LIMIT	Removable 20	Removable 100	Total 5000	
~	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	330	3000	
2	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	350	3000	
n	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	220	3000	
4	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	380	3000	
5	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	120	3000	
9	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	350	3000	
7	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	250	3000	
ω	3/5/2007	3/5/2007	3/5/2007 Upper horizontal surfaces			< 20	400	3000	
თ	3/5/2007	3/5/2007	Upper horizontal surfaces			< 20	< 100	3000	
COMMENTS:	NTS:		NA= Not Applicable	INSTRUMENT		Tenr	Tennelec	12 .udlum	
				IDENTIFICATION		NROC	NR007137	125264	
*β smea	r efficiency	/ factor du€	* $\beta$ smear efficiency factor due to thick dust = 10	CALIBRATION DUE		Ď	Daily	4/20/2007	
Tennele	c MDA = 14	1 dpm/100 c	Tennelec MDA = 14 dpm/100 cm <sup>2</sup> $\alpha$ and 26 dpm/100 cm <sup>2</sup> $\beta$	BACKGROUND		0.25 cpm $\alpha$	4.30 cpm β	30 cpm β	
			-	EFFICIENCY		$33.40\% \alpha$	38.74% B	10%β	
SAMPLED BY:	ш	R. McGinnis	S ANALYZED BY: GQ. ANG SWIND	COUNT TIME		<b>-</b>	1 Min	NA	
REVIEWED BY:	D BY:	11). UN	DATE: 3-16-07			Page	~	of	7
FORM 732-A REV 10-2005	V 10-2005								

### Sample Report

Batch ID:	Smears 1 Minute C	Count - 200	070305123	8	Count	Date:	3/5/2007 12:38:58PM
Group:	А				Count	Minutes	: 1.00
Device:	RMHF Tennelec (N	NR 007137	)		Count	Mode:	Simultaneous
Batch Key:	434				Opera	ting Volt	t <b>s:</b> 1477
Selected	Swipe/Smear		Comme	nts: high ba	iy upper hoi	rizontals	
Backg	round (cpm)		Eff	iciency (%)			
Alpha Rate: Beta Rate:		.07 .57	Alpha: Beta:	33.40 ± 38.74 ±	1.00 0.98		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	Unc	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
20070305123858-A1	Unknown	5.24	4.24	14.00	32.78	10.77	26.00
20070305124029-A2	Unknown	2.25	3.00	14.00	35.36	11.08	26.00
20070305124139-A3	Unknown	-0.75	0.21	14.00	22.46	9.44	26.00
20070305124249-A4	Unknown	-0.75	0.21	14.00	37.95	11.39	26.00
20070305124409-A5	Unknown	-0.75	0.21	14.00	12.13	7.89	26.00
20070305124519-A6	Unknown	-0.75	0.21	14.00	35.36	11.08	26.00

4.24

3.00

0.21

14.00 14.00

14.00

14.00

25.04

40.53

9.55

9.79

11.68

7.45

26.00

26.00

26.00

20070305124629-A7

20070305124749-A8

20070305124859-A9

Unknown

Unknown

Unknown

5.24

2.25

-0.75

Page<u>2</u> of <u>2</u> C:\Eclipse\sample report.rpt 3/5/2007 12:50:14PM



**Building 4022 Sub-Grade Vaults** 

els	
Level	
ination	
Contam	
Remaining	
RMHF F	

			Estimated		Estimated	lated
	Direct Reading	Direct Reading	<b>Direct Reading</b>	Direct Reading	Removable	Removable
	Minimum	Maximum	Median	Limit	Minimum	Maximum
Vault #	$\beta dpm/100 cm^2$	β dpm/100cm <sup>2</sup>	β dpm/100cm <sup>2</sup>	$\beta dpm/100cm^{2}$	β dpm/100cm <sup>2</sup>	β dpm/100cm <sup>2</sup>
	< 4170	50,000	16,667	6,250,000	< 100	500
2	< 4170	62,500	4,170	6,250,000	< 100	600
3	< 4170	1,666,667	416,667	6,250,000	< 100	3000
4	< 4170	833,333	62,500	6,250,000	< 100	1500
5	< 4170	333,333	25,000	6,250,000	< 100	1200
9	< 4170	1,500,000	83,333	6,250,000	< 100	2500
7	< 4170	1,458,333	125,000	6,250,000	< 100	2500
Inlet Tunnel	< 4170	750,000	< 4,170	6,250,000	< 100	1200
Exhaust Tunnel	< 4170	1,500,000	125,000	6,250,000	< 100	2500

Note 1: Alpha contamination for all 7 vaults is < 74 dpm/100cm<sup>2</sup> direct reading and < 20 dpm/100cm<sup>2</sup> removable. Alpha direct reading limit is 740 dpm/100cm<sup>2</sup>.

Note 2: Drain Line from Vault 6 to outside sump has unknown contamination levels (inaccessible)

Vault 1 East Wall Grid Key

e <sup></sup>				
5U, 8S	4U, 8S	30, 85	2U, 8S	1U, 8S
5U, 7S	4U, 7S	3U, 7S	2U, 7S	1U, 7S
5U, 6S	4U, 6S	3U, 6S	2U, 6S	1U, 6S
veyed 5U, 5S	4U, 5S 00	3U, 5S	o 400 2U, 5S	1U, 5S 100 to 400
Not Surveyed 5U, 4S 5U,	4U, 4S	3U, 4S	Spotty 100 to 400 2U, 4S	1U, 4S
5U, 3S	4U, 3S	sc, us	2u, 35 1200	1U, 3S
5U, 2S	4U, 2S	3U, 2S	2U, 2S	1U, 2S
<ul><li>▲</li><li>5U, 1S</li></ul>	4U, 1S	3U, 1S	<ul> <li>2U, 1S</li> </ul>	1U, 1S

1 meter by 1 meter grids

Page \_\_\_\_ of \_\_\_\_

Vault 1 East Wall Key.dsf

### Vault 1 South Wall Grid Key

⊲ 5U, 1W	5U, 2W		5U, 4W	5U, 5W
4U, 1W ∢	4U, 2W	4U, 3W	4U, 4W	4U, 5W
3U, 1W	3U, 2W	, 3U, 3W	3U, 4W	3U, 5W
⊲ 2U, 1W	Spotty 2U, 2W	100 to 400 2U, 3W	2U, 4W	2U, 5W
1U, 1W	1U, 2W	↓ 1U, 3W	1U, 4W	1U, 5W

E **>**w

1 meter by 1 meter grids

Vault 1 South Wall Key.dsf

Page \_\_\_\_ of \_\_\_\_

Vault 1 West Wall Grid Key

	Construction of the second sec	No. of the other states and th	Construction of the owner	Sector se
5U, 8N	4U, 8N	3U, 8N	2U, 8N ) to 1000	1U, 8N
SU, 7N	4U, 7N	3U, 7N 🍦	2U, 7N 2U, 8N Spotty 100 to 1000	1U, 7N
su, gn	4U, 6N	3U, 6N	2U, 6N	1U, 6N
Not Surveyed IN 5U, 5N	4U, 5N	3U, 5N	2U, 5N	1U, 5N
5U, 4N	100 to 800 4U, 4N	3U, 4N 3U, Looks fairly clean.	2U, 4N	1U, 4N
5U, 3N	4U, 3N	3U, 3N	2U, 3N	1U, 3N
5U, 2N	4U, 2N	▲ 3U, 2N	2U, 1N 2U, 2N - Spotty 100 to 400 →	1U, 2N
	4U, 1N	3U, 1N	2U, 1N ≪— Spotty 10	1U, 1N

1 meter by 1 meter grids

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Vault 1 West Wall Key.dsf

### Vault 1 North Wall Grid Key

5U, 1E	5U, 2E	5U, 3E	5U, 4E	5U, 5E
400 4U, 1E	4U, 2È	4U, 3E	4U, 4E	4U, 5E
3U, 1E	3U, 2E	< 100 3U, 3E	) <sup>200</sup> 3U, 4E	3U, 5E
2U, 1E	2U, 2E	2U, 3E	2U, 4E	2U, 5E
1U, 1E	1U, 2E	1U, 3E	1U, 4E	1U, 5E

1 meter by 1 meter grids

Page \_\_\_\_ of \_\_\_\_

### Vault 1 Floor Grid Key

8N, 1E	8N, 2E	8N, 3E	8N, 4E	8N, 5E	
7N, 1E	7N, 2E	7N, 3E	7N, 4E	7N, 5E	
6N, 1E	6N, 2E	6N, 3E	0 200 6N, 4E	6N, 5E	
5N, 1E ⊲	5N, 2E	5N, 2E	5N, 4E	5N, 5E	150 (crack)
4N, 1E	4N 2E	4N 3E	4N 4E	4N 5E	
3N, 1E	3N, 2E	3N, 3E	3N, 4E	3N, 5E	
2N, 1E	2N, 2E	2N, 3E	2N, 4E	2N, 5E	W A F
1N, 1E	1N, 2E	1N, 3E	1N, 4E	1N, 5E	s s

Vault 5 Floor Key.dsf

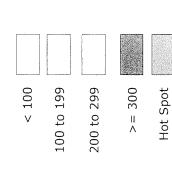
1 meter by 1 meter grids.

Page \_\_\_\_ of \_\_\_\_

# Vault 2 Floor Grid Initial Scan

500 to 1500	20	sb	meter ari	1 meter by 1 meter arids	<del>, .</del>	
	1N, 6E 100 TO 200	inclusion of	1N, 4E < 100 TO 100	1N, 3E 100 TO 200		
	2N, 6E 100 TO 120	2N, 5E < 100 TO 140	2N, 4E < 100 TO 100	2N, 3E 100 TO 160	2N, 2E 100 TO 160	AL AL
	3N, 6E 100 TO 120	3N, 5E < 100 TO 100	3N, 4E < 100 TO 100	3N, 3E < 100 TO 140	3N, 2E 100 TO 160	3N, 1E 160 TO 240
	4N, 6E < 100 TO 100	4N, 5E < 100 TO 100	4N, 4E < 100 TO 100	4N, 3E 100 TO 120	4N, 2E 100 TO 200	AN READ
	< 100 TO 160	< 100 TO 100	< 100 TO 100	< 100 TO 100	100 TO 140	1611.102
	5N, 6E	5N, 5E	5N, 4E	5N, 3E	5N, 2E	H S
	6N, 6E < 100 TO 100	6N, 5E < 100 TO 100	6N, 4E < 100 TO 100	6N, 3E < 100 TO 100	6N, 2E < 100 TO 120	6N, 1E 100 TO 160
	7N, 6E < 100 TO 100	7N, 5E < 100 TO 100	7N, 4E < 100 TO 100	7N, 3E < 100 TO 100	7N, 2E < 100 TO 100	7N, 1E 100 TO 120
	8N, 6E < 100 TO 100	8N, 5E < 100 TO 100	8N, 4E < 100 TO 100	8N, 3E < 100 TO 100	8N, 2E < 100 TO 100	8N, 1E < 100 TO 100

Color Code, Max Readings (net cpm)



All scan readings in net cpm

1 meter by 1 meter grids (except for remnants).

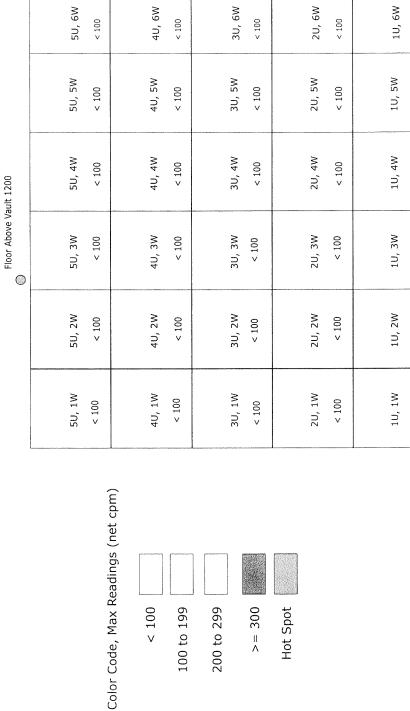
Vault 2 Floor Initial Scan.des

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Vault 2 South Wall Initial Scan



< 100

100 to 199

200 to 299

Hot Spot

>= 300

All scan readings in net cpm

1 meter by 1 meter grids except for remnants

Vault 2 South Wall Initial Scan.des

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< 100 TO 100

< 100 TO 100

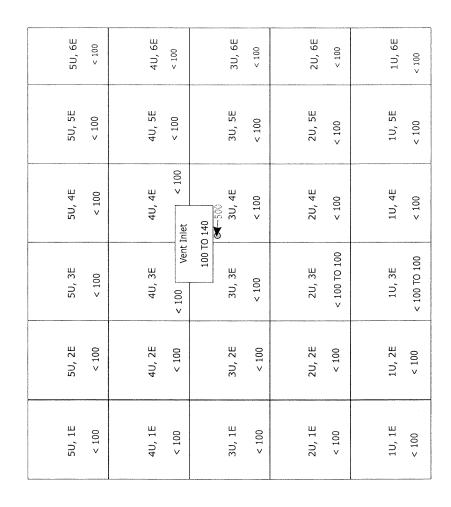
< 100 TO 100

< 100 TO 100

< 100

< 100

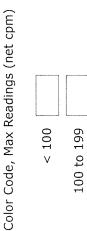
Vault 2 North Wall Initial Scan



Hot Spot

>= 300

200 to 299





1 meter by 1 meter grids

Vault 2 North Wall Initial Scan.des

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of

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Vault 2 West Wall Grid Initial Scan

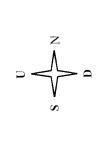
					1					Τ		
5U, 8N	< 100		4U, 8N	< 100		3U, 8N	< 100	2U, 8N	< 100		1U, 8N	< 100
5U, 7N	< 100		4U, 7N	< 100		3U, 7N	< 100	2U, 7N	< 100		1U, 7N	< 100
su, 6N	< 100		4U, 6N	< 100		3U, 6N	< 100	2U, 6N	< 100		1U, 6N	< 100
5U, 5N	< 100		4U, 5N	< 100		3U, 5N	< 100	ZU, 5N	< 100			e de lu nu
5U, 4N	< 100		4U, 4N	< 100		3U, 4N	< 100	2U, 4N	< 100			· man
5U, 3N	< 100		4U, 3N	< 100		3U, 3N	< 100	2U, 3N	< 100		1U, 3N	< 100 TO 100
5U, 2N	< 100	Z00 TO 1200	🔰 4U, 2N	< 100		3U, 2N	< 100	2U, 2N	< 100		1U, 2N	< 100 TO 140
5U, 1N	< 100		4U, 1N	< 100		3U, 1N	< 100	2U, 1N	< 100		1U, 1N	< 100 TO 100

Color Code, Max Readings (net cpm)

< 100

Vault 2 West Wall Initial Scan.des Hot Spot

All scan readings in net cpm



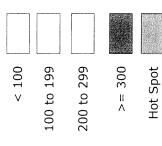
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Vault 2 East Wall Initial Scan

		 		 		1			 	
5U, 8S	< 100	4U, 8S	< 100	3U, 8S	< 100		2U, 8S	< 100	1U, 8S	< 100
5U, 7S	< 100	4U, 7S	< 100	3N, 7S	< 100		2U, 7S	< 100	1U, 7S	< 100
5U, 6S	< 100	4U, 6S	< 100	3U, 6S	< 100		2U, 6S	< 100	1U, 6S	< 100
5U, 5S	< 100	4U, 5S	< 100	 3U, 5S	< 100		2U, 5S	< 100	1U, 5S	< 100
5U, 4S	< 100	4U, 4S	< 100	3U, 4S	< 100		2U, 4S	< 100	1U, 4S	< 100
5U, 3S	< 100	4U, 3S	< 100	3U, 3S	< 100		2N, 3S	< 100	1U, 3S	< 100
5U, 2S	< 100	4U, 2S	< 100	3U, 2S	< 100		2U, 2S	< 100	1U, 2S	< 100
5U, 1S	< 100	4U, 1S	< 100	3U, 1S	< 100		2U, 1S	< 100	 1U, 1S	< 100

1 meter by 1 meter grids



Vault 2 East Wall Initial Scan.des

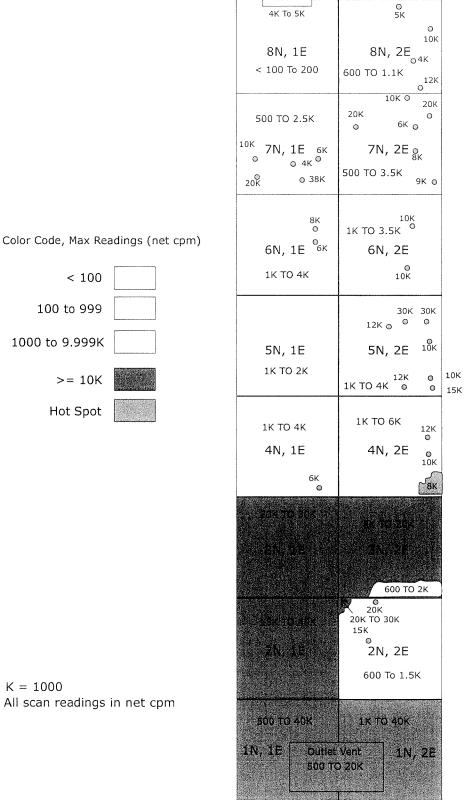
All scan readings in net cpm

Color Code, Max Readings (net cpm)

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 Page \_\_\_\_ of

### Vault 3 Floor Scan After Decon



1 meter by 1 meter grids

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Page \_\_\_

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K = 1000All scan readings in net cpm

Vault 3 West Wall Scan After Decon

		Ledge	\ \															
4K © 2 <sup>2</sup> K	5U, 8N	140 TO 1K	S00 TO ISK	4U, 8N 500	<100 TO 100	3U, 8N	<100 TO 100	2U, 8N	<100	<100 TO 400	1U, 8N	500 TO 11K						
	5U, 7N	100 TO 400	200 TO 1.4K	3K 4K 4U, 7N	<100 TO 100	3U, 7N	<100 TO 100	2U, 7N	<100	<100 TO 200	1U, 7N	500 TO 4K		eter grids				
	5U, 6N	<100 TO 100	100 TO 600	4U, 6N	100 TO 200	3U, 6N	<100 TO 120	2U, 6N	<100	<100 TO 300	1U, 6N	K	400 TO 1K	1 meter by 1 meter grids				
	5U, 5N	<100		4U, 5N	<100 TO 100	3U, 5N	<100 TO 100	2U, 5N	<100		1U, 5N	<100 TO 200	4	1 me				
	5U, 4N	<100		4U, 4N	<100 TO 100	3U, 4N	100 TO 200	2U, 4N	<100 TO 200	<100 TO 300	1U, 4N	V	ZK TO 3K	iet cpm)				
	5U, 3N	<100 TO 100	С Ж	4U, 3N	<100 TO 200	3U, 3N	200 TO 300	2U, 3N	<100 TO 100	100 TO 2K	1U, 3N	K	10K	Color Code, Max Readings (net cpm)	< 100	666	У666	>= 10K
	5U, 2N	<100		4U, 2N	<100 TO 100	3U, 2N	<100 TO 100	2U, 2N	<100 TO 100	<100 TO 500	1U, 2N	K	10K 5K TO 10K	Color Code, M	V	100 to 999	1000 to 9.999K	 ^
	5U, 1N	<100		4U, 1N	<100 TO 160	3U, 1N	<100	2U, 1N	<100 TO 300	~100 TO 300	1U, 1N	K	5K TO 10K					
													ц			K = 1000 All scan readings in net com	)	

 $r \rightarrow \frac{z}{s}$ 

Hot Spot

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Vault 3 East Wall Scan After Decon

		Ledge					
<100	<100						
5U, 1S	5U, 2S	5U, 3S	5U, 4S	5U, 5S	5U, 6S	5N, 7S	5U, 8S
Ne O	1.46	<100	<100	<100	<100	<100	<100
		400 TO 1.1K	3K TO 4K				
	2.6K	4.2K 480					
4U, 1S	4U, 2S	4U, 3S	4U	4U, 5S	4U, 6S	4U, 7S	4U, 8S
<100	<100 TO 140	<100 TO 220	<100 TO 160	100 TO 160	100 TO 120	<100	<100 TO 160
3U, 1S	3U, 2S	3N, 3S	3U, 4S	3N, 5S	3N, 6S	3N, 7S	3N, 8S
<100	<100	< 100 TO 120	< 100 TO 120	< 100 TO 140	100 TO 360	< 100 TO 300	< 100 TO 160
						and a second	
	300 🔘		< 100 TO 300				
2U, 1S	2U, 2S	2U, 3S	2U, 4S	2U, 5S	2U, 6S	2U, 7S	2U, 8S
<100	<100	<100	600 <b>O</b>	100 TO 200	< 100 TO 100	< 100 TO 100	< 100 TO 100
:	14	100 TO 300	100 TO 300	100 TO 300	100 TO 2K	500 TO 1K	1K TO 3K
1U, 1S	10, 25	1U, 3S	1U, 4S	1U, 5S	1U, 6S	1U, 7S	1U, 8S
< 100 TO 200	< 100 10 500 1K To 8K	500 TO 1K		1K To 2K	~	IK To 3K	Ske to tok
Color	Code, Max Rea	Color Code, Max Readings (net cpm)	(1		10K TO 20K		
					1 meter 1	1 meter hv 1 meter arids	oride

K = 1000 All scan readings in net cpm

100 to 999 1000 to 9.999K >= 10K

Hot Spot

Vault 3 East Wall Scan After Survey.des

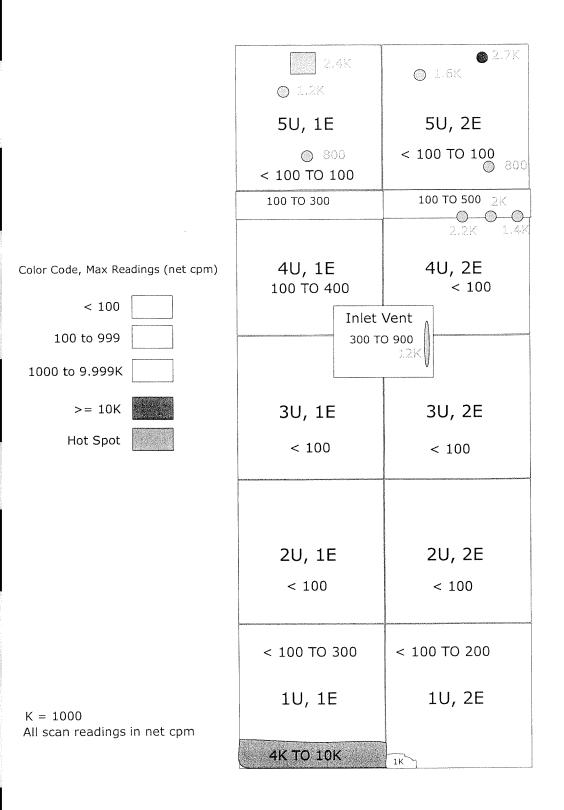
< 100

1 meter by 1 meter grids

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- a

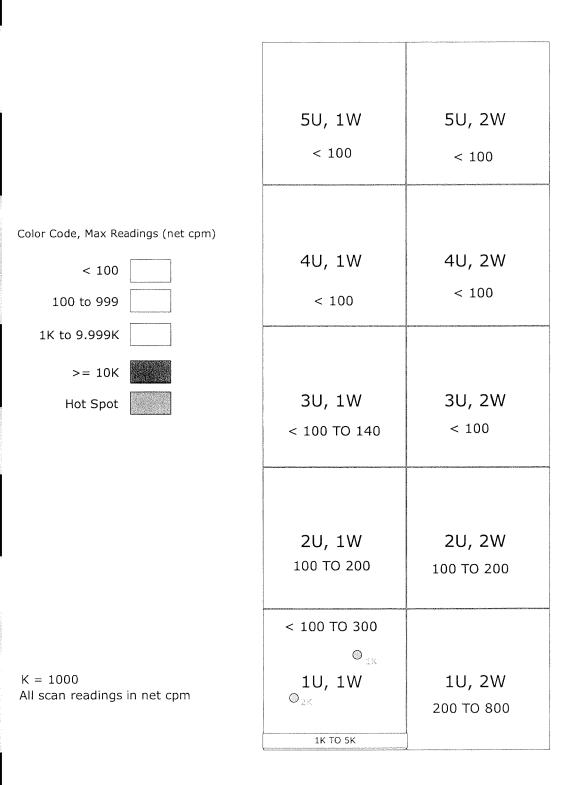
### Vault 3 North Wall Scan After Decon





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### Vault 3 South Wall Scan After Decon

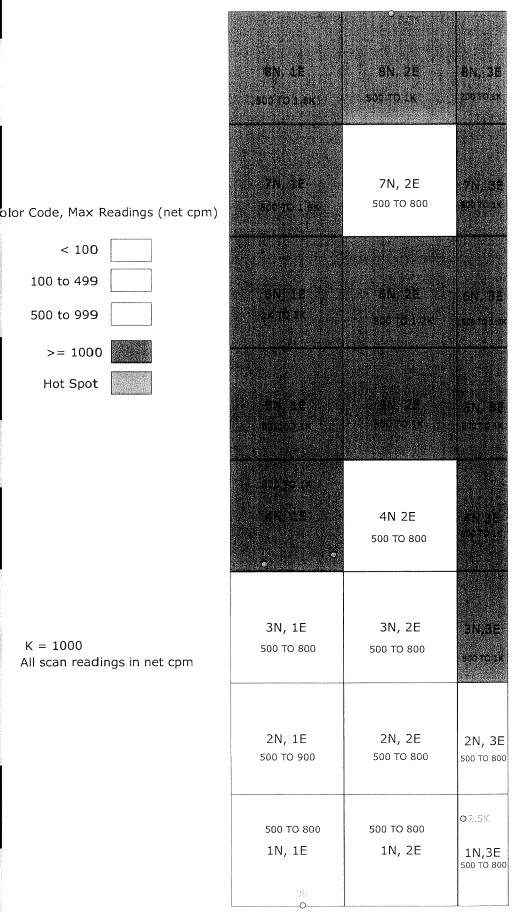




### 1 meter by 1 meter grids

Page \_\_\_\_ of \_\_\_\_

### Vault 4 Floor Scan After Decon



1 meter by 1 meter grids (except for remnants).



K = 1000All scan readings in net cpm

< 100

100 to 499

500 to 999

>= 1000

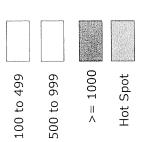
Hot Spot

Vault 4 West Wall Scan After Decon

à

	8U, 1N <100	8U, 2N <100	8U, 3N <100	8U, 4N <100	8U, 5N <100	8U, 6N <100	8U, 7N <100	8U, 8N <100
		<100			<100			
	7U, 1N	7U, 2N	7U, 3N	7U, 4N	7U, 5N	7U, 6N	7U, 7N	7U, 8N
	<100	200 01K	<100	<100	● 1.7K	<100	<100 TO 120	<100
olor Code, Max Readings (net cpm)		460 🔘	2.8K	4.8K				
			2.46	٢				
< 100	6U, 1N	6U, 2N	6U, 3N	6U, 4N	6U, 5N	6U, 6N	6U, 7N	6U, 8N
100 to 400	<100	<100	<100 TO 100	<100	<100	<100	<100	<100
			4.8K					
500 to 999		<100						
	5U, 1N	5U, 2N	5U, 3N	5U, 4N	5U, 5N	5U, 6N	5U, 7N	5U, 8N
>= 1000	< 100	006	<100	<100	<100	<100	<100	<100
Hot Spot								
	4U, 1N	4U, 2N	4U, 3N	4U, 4N	4U, 5N	4U, 6N	4U, 7N	4U, 8N
	<100	<100	<100	<100	<100	<100	<100	<100
				1.9K () 1.9K ()			<100	
	3U, 1N	3U, 2N	3N, 3N	3U, 4N	3U, 5N	3U, 6N	3U, 7N	3U, 8N
	<100	<100	<100	<100 €	<100	<100	© 2.3K © 2.4K	<100
						<100	516 O O D T	
	2U, 1N	2U, 2N	2U, 3N	2U, 4N	2U, 5N	2U, 6N	aum.	2U, 8N
	<100	<100	<100	<100	<100			2K <100
	<100	<100	3K 🔘	<100		2.2K	3K	1.5K
K = 1000	1U, 1N	1U, 2N	1U, 3N	1U, 4N	1U, 5N	1U, 6N	1U, 7N	1U, 8N
All scan readings in net cpm			<100		<100	<100 TO 140	V	<100 TO 100
	↑ 400 TO 900	Т 200 ТО 16К	400 TO 2.2K	600 TO 1.6K	600 TO 1.6K	T 500 TO 2.6K	1.2K TO 1.8K	800 TO 1.6K

1 meter by 1 meter grids



Vault 4 West Wall Scan After Decon.des

Page\_

 $n \xrightarrow{Z} n$ 

of

# Vault 4 East Wall Scan After Decon

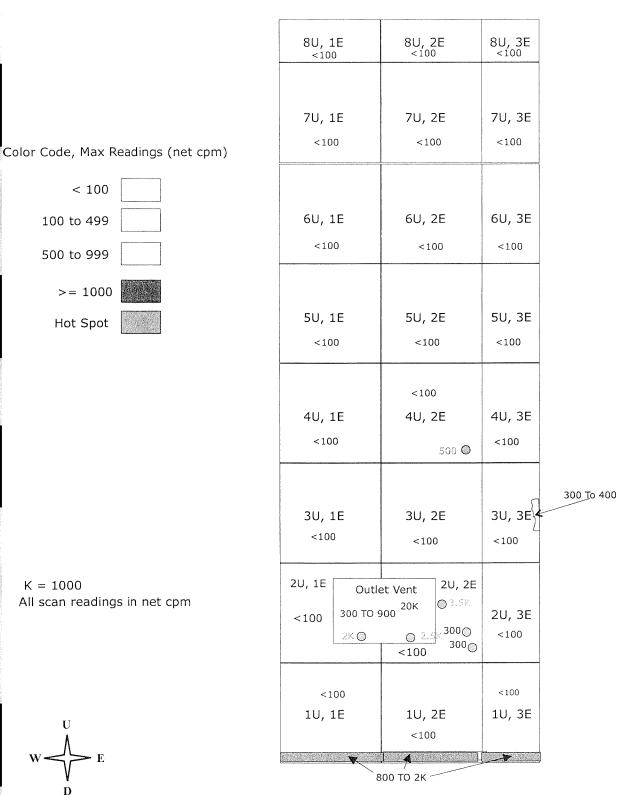
	8U, 1S <100	8U, 2S <100	8U, 3S <100	8U, 4S <100	8U, 5S <100	8U, 6S <100	8U, 7S <100	8U, 8S <100
	7U, 1S <100	7U, 2S <100	7U, 3S <100	7U, 4S <100	<100 7U, 5S ⊥.8K ●	7U, 6S <100	7U, 7S <100	7U, 8S <100
Color Code, Max Readings (net cpm) < 100 100 to 499	6U, 1S <100	6U, 2S <100	6U, 3S <100	<100 6U, 4S	6U, 5S <100	6U, 6S <100	6U, 7S <100	6U, 8S <100
500 to 1K >= 1K	5U, 1S <100	<100 5U, 2S ©3.4K	<100 5U, 3S <sup>1K</sup>	5U, 4S <100	5U, 5S <100	5U, 6S <100	5U, 7S <100	5U, 8S <100
Hot Spot	4U, 1S <100	4U, 2S <100	4U, 3S <100		4U, 5S <100	4U, 6S <100	4U, 7S <100	4U, 8S <100
200 to 2K	3U, 1S <100 TO 100	3U, 2S <100	3U, 3S <100	<100 3U, 4S 4K ⊚	<100 3U, 5S 1K	3U, 6S <100	3U, 7S <100	3U, 8S <100
	<sub>500</sub> <100 © 2U, 1S	2U, 2S <100	2U, 3S <100	<100 2U, 4S	2U, 5S <100	2U, 6S <100	2U, 7S <100	2U, 8S <100
K = 1000 All scan readings in net cpm	© <sub>200</sub> 1U, 1S <100	1U, 2S <100	1U, 3S <100	© <sup>4K</sup> 1U, 4S <100	1U, 5S <100	1U, 6S <100	1U, 7S <100	© <sup>1K</sup> 0 1U, 8S <100
	500 TO 1K	Т 1К ТО 2К	500 TO 1.5K	800 TO 1.4K	T 500 TO 1K	500 TO 1.2K	Т 500 ТО 1.2К	Т 500 ТО 1.2К

1 meter by 1 meter grids

Vault 4 East Wall Initial Scan After Decon.des

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### Vault 4 North Wall Scan After Decon

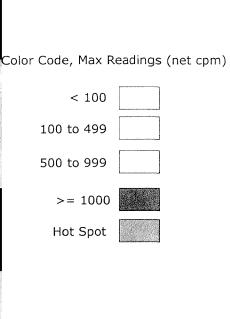


1 meter by 1 meter grids (except for remnants).

Vault 4 North Wall Scan After Decon.des

Page \_\_\_\_ of \_\_\_

### Vault 4 South Wall Scan After Decon



Κ	= 10	00			
All	scan	readings	in	net	cpm



8U,1W < 100	8U, 2W < 100	8U, 3W < 100
		< 100
7U, 1W	7U, 2W	7U, 3W
< 100	< 100	© <sup>600</sup>
	6U, 2W	500
< 100	< 100 TO 100	6U, 3W
6U, 1W	< 100	< 100
5U, 1W	5U, 2W	5U, 3W
< 100	< 100	< 100
4U, 1W	4U, 2W	4U, 3W
< 100	< 100	< 100
3U, 1W	3U, 2W	3U, 3W
< 100 TO 12	0 < 100	< 100
2U, 1W	2U, 22W	2U, 3W
< 100	< 100	< 100
	3.5K	
1U, 1W	1U, 2W	1U, 3W
	< 100	< 100

1 meter by 1 meter grids (except for remnants).

### Vault 5 Floor Grid Key

8N, 1E	8N, 2E	8N, 3E	8N, 4E	
2500 - 14 2.5 <sup>4</sup> 7N, 1E	, 10 <sup>10</sup> . 400 7N, 2E	7N, 3E	1. 100 7N, 4E	
, 500 - 1 <sup>K</sup> 6N, 1E	6N, 2E	لا <sup>100</sup> 400 6N, 3E	6N, 4E	
2 100 5N, 1E	ی رو ا 5N, 2E	ر رون 5N, 3E	لان 5N, 4E	
ل (۲۵۰) 4N, 1E	1 100 4N 2E	∠ mo-l+bk 4N, 3E	2100 4N, 4E	
100) 3N, 1E	3N, 2E	2100 3N, 3E	2 100 114 3N, 4E	
2N, 1E	210 <sup>4</sup> 2N, 2E	2N, 3E	2N, 4E	
2.1000 <sup>23</sup> 1N, 1E 23 - 0	1N, 2E	1N, 3E	1N, 4E	

**-** E

W <

1 meter by 1 meter grids (except for remnants).

### Vault 5 North Wall Grid Key

8U, 1E	8U, 2E	8U, 2E	8U, 2E
	And for the second s	to the second se	
7U, 1E	7U, 2E	7U, 3E	7U, 4E
<i>2</i>	×		
<del>- 6U, 1E</del>			6U, 4E
00712			and the second
6U, 1E	6U, 2E	6U, 3E	6U, 4E
Χ	×	Y.	5. j.
5U, 1E	5U, 2E	5U, 3E	5U, 4E
`.			
4U, 1E	4U, 2E	4U, 3E	4U, 4E
17		• • .	
3U, 1E	3U, 2E	3U, 3E	3U, 4E
X	X.	7	X
		2153	
2U, 1E	2U, 2E	2U, 3E	2U, 4E
X	A <sub>pere</sub> nte de la companya de		
111 1 -	10, 2E	111.25	111 45
1U, 1E	10,20	1U, 3E	1U, 4E
v			

1 meter by 1 meter grids (except for remnants).

$$W \xrightarrow{U} E$$

### Vault 5 South Wall Grid Key

8U,	1W	811 21		011.0				
			8U, 2W		8U, 3W		8U, 4W	
7U,	7U, 1W		7U, 2W		7U, 3W		7U, 4W	
	1.W/	6U, 2W		-6U,-3V	V	<del>6U, 4W -</del>		
6U, 1	W	6U, 2W		6U, 3W		6U, 4W		
5U, 1	N	5U, 2W		5U, 3W		5U, 4W		
4U, 1V	V	4U, 2W		4U, 3W		4U, 4W		
X 3U, 1W		У 3U, 2W		) ВU, ЗW	3	۷ U, 4W		
λ 2U, 1W		χ΄ 2U, 2W	2	<u>Х</u> ́ U, 3W	21	, 4w		
√ 1∪, 1w	1	V U, 2W	1	V J, 3W	10	X , 4w		

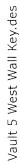


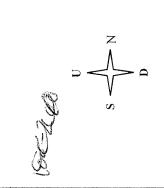
1 meter by 1 meter grids (except for remnants).

Vault 5 West Wall Grid Key

					100-200	BEZE	N N
8U, 8N	7U, 8N	6U, 8N	5U, 8N	4U, 8N	SUL BIN	All X	1U, 8N
8U, 7N	1.44 Tes 4.45 Tes 4.45 Tes 70, 7N	6U, 7N	5U, 7N	4U, 7N	3U, 7N X	zu, 7N Х	1U, 7N , ,
8U, 6N	Leader Tor	6U, 6N	5U, GN	4 <b>U,</b> 6N	3U, 6N X	0.2K zu, gn X	1U, 6N X
8U, 5N	7U, 5N	6U, 5N	5U, 5N	4U, 5N	3U, 5N X	zu, sn K	1U, 5N X
8U, 4N	7U, 4N	6U, 4N	5U, 4N	4U, 4N	3U, 4N X	2U, 4N X	1U, 4N X
8U, 3N	7U, 3N	6U, 3N	5U, 3N	4U, 3N	3U, 3N	2U, 3N X	1U, 3N
8U, 2N	7U, 2N	6U, 2N	5U, 2N	4U, 2N	зи, zn Х	zu, zn X	1U, 2N X
8U, 1N	7U, 1N	6U, 1N	5U, 1N	4U, 1N	3U, 1N	zu, ın X	IU, IN X

1 meter by 1 meter grids (except for remnants).





Vault 5 East Wall Grid Key

8U, 8S	7U, 8S	6U, 8S	5U, 8S	4U, 8S	3U, 8S X	2U, 8S X	1U, 8S \/
80, 7S	7U, 7S	6U, 7S	5U, 7S	4U, 7S	3U, 7S Ķ	2U, 7S X	1U, 7S X
8U, 6S	7U, 6S	6U, 6S	5U, 6S	4U, 6S	3U, 6S , K	2U, 6S X	10, 6S X
8U, 5S	7U, 5S	6U, 5S	5U, 5S	4U, 5S	3U, 5S X	2U, 5S X	1U, 5S
8U, 4S	7U, 4S	6U, 4S	5U, 4S	40, 45	3U, 4S X	2U, 4S	1U, 4S X
8U, 3S	201, 3S	6U, 3S	5U, 3S	4U, 3S	3U, 3S X	2U, 3S X	1U, 3S X
8U, 2S	7U, 2S	6U, 2S	5U, 2S	4U, 2S	3U, 2S X	2U, 2S ×	1U, 2S X
80, 1 <b>S</b>	7U, 15	6U, 1S	5U, 1S	4U, 1S	3U, 1S	2U, 1S	1U, 1S

1 meter by 1 meter grids (except for remnants).

Vault 5 East Wall Key.des

## Vault 6 Floor After Decon Survey

	⊙7K	2K to 3K	©17K <sub>○</sub> 6K	⊙12K
	8N, 1E	8N, 2E	8N, 3E	8N, 4E
	2K to 4K	©11K	2K to 3K	1K to 3K
	6K	9K to 18K	21K <sub>O</sub>	
	06K		<sup>24κ</sup> Ο 7Ν, 3Ε	<sub>⊙12К</sub> 7N, 4Е
olor Code, Max Readings (net cpm)	7N, 1E 2K to 4K	7N, 2E 2K to 4K	2K to 8K	1K to 3K
< 100			_ <u>○</u> 18K	
100 to 5K		6N, 2E <sup>3</sup> 1K to 4K		
4999 to 10K	6N, 1E 1K to 4K	6N, 2E&	6N, 3E	6N, 4E
	11 10 48	1K to 4K	1K to 3K	500 to 1K
>= 10K				
Hot Spot	5N, 1E	5N, 2E	5N, 3E	5N, 4E
	500 to 2K	500 to 1.5K	500 to 2K	500 to 2.5K
	1K to 3K			
1 meter by 1 meter grids	4N, 1E	4N 2E	4N, 3E	4N, 4E
(except for remnants).	©6K		1K to 2K	1K to 2.5K
		36K	20K	
	500 to 6K			2N 4E
K = 1000	3N, 1E 20К	3N, 2E 1К to 7К	3N, 3E	3N, 4E 500 to 2K
All scan readings in net cpm All alpha readings were < 200 cpm		IN to 7 N	IN 10 2K	
	1K to 1.5K	ay 12K		
	2N, 1E	<sup>8K</sup> ☉ 0 <sup>13K</sup> 2N, 2E 8K	2N, 3E	2N, 4E
	⊚ 45K	1K to 4K	500 to 3K	500 to 1K
	<u>о</u> 4К			
	1K to 3K	1K to 4K	1K to 2K	500 to 1K
5K to 36K~	1N, 1E	1N, 2E	1N, 3E	1N, 4E
		8K to 26K		
Vault 6 Floor After Decon.des			Tradition and the stand of the	en filmen men en e

Ν

W ~ E

## Vault 6 Floor Initial Scan Survey

	⊙7K	2K to 3K	©17K	©12K
	8N, 1E	8N, 2E	<sub>⊚</sub> 6к 8N, 3Е	8N, 4E
	2K to 4K	©11K	2K to 3K	1K to 3K
	_ <sub>6к</sub> ⊙6к 7N, 1Е	9 <sup>K to 18K</sup> 7N, 2E	21K⊙ 24K⊙ 7N, 3E	₀12ĸ 7N, 4E
lor Code, Max Readings (net cpm)	2K to 4K	2K to 4K	2K to 8K	1K to 3K
< 100			80K	
100 to 5K	<sup>48K</sup> ⊖ 6N, 1E	6N, 2E с 1к to 4к	) 6N, 3E	6N, 4E
4999 to 10K	1K to 4K	1K to 4K	1K to 3K	500 to 1K
>= 10K				
Hot Spot	5N, 1E 500 to 2K	5N, 2E 500 to 1.5K	5N, 3E 500 to 2K	5N, 4E 500 to 2.5K
	1K to 3K	36K©		
1 meter by 1 meter grids (except for remnants).	4N, 1E обк	4N 2E 8K to 30A 100K 160K O	4N, 3E 1K to 2K	4N, 4E 1K to 2.5K
	30К[]	0/VK	20K	
K = 1000 All scan readings in net cpm	500 to 6K 3N, 1E 20K ©	0 <sup>50К</sup> ЗN, 2Е 1К to 7К	3N, 3E 1к to 2к	3N, 4E 500 to 2К
	1K to 1.5K 2N, 1E ⊙ 45K ⊙ 4K	200K 8K 0 13K 2N, 2E 8K 1K to 4K	2N, 3E 500 to 3K	2N, 4E 500 to 1K
5K to 36K-	1К to 3К 1N, 1Е	1K to 4K 1N, 2E 8K to 26K	1K to 2K 1N, 3E	500 to 1K 1N, 4E
Vault 6 Floor Initial Scan.des	$\mathbf{C}$	$\leq$		

 $W \xrightarrow{N} E$ S

### Vault 6 North Wall Initial and Final Survey

	8U, 1E < 100	8U, 2E < 100	8U, 2E < 100	8U, 2E < 100
	< 100	< 100	< 100	< 100
	7U, 1E	7U, 2E ⊚500	7U, 3E	7U, 4E
		⊚900		
Color Code, Max Readings (net cpm)	6U, 1E < 100	6U, 2E < 100	6U, 3E < 100	6U, 4E < 100
< 100				
100 to 5K 4999 to 10K	5U, 1E < 100	5U, 2E < 100	5U, 3E < 100	5U, 4E < 100
>= 10K				
Hot Spot	4U, 1E < 100	4U, 2E < 100	4U, 3E < 100	4U, 4E < 100
		< 100	< 100	< 100
1 meter by 1 meter grids	3U, 1E < 100	3U, 2E	3U, 3E	3U, 4E
(except for remnants).		2U, 2E < 100	2U, 3E < 100	
	2U, 1E		NT	2U, 4E
	< 100	< 100	to 400	< 100
K = 1000 All scan readings in net cpm All alpha readings < 200 cpm	< 100 1U, 1E	< 100 1U, 2E	< 100 1U, 3E	< 100 1U, 4E
	The second se	1K to 2K	1K to 2K	1K

 $W \xrightarrow{U} E$ 

1 meter by 1 meter grids (except for remnants).

### Vault 6 South Wall Initial and Final Survey

, ee		·····		
	8U,1W < 100	8U, 2W < 100	8U, 3W < 100	8U, 4W < 100
	7U,1W	7U, 2W	7U, 3W	7U, 4W
	< 100	< 100	< 100	< 100
-	< 100	6U, 2W < 100	6U, 3W	< 100
Color Code, Max Readings (net cpm)	6U,1W	< 100 t Outlet	o 200	6U, 4W
100 to 5K				
4999 to 10K	5U,1W	5U, 2W	5U, 3W	5U, 4W
>= 10K	< 100	< 100	< 100	< 100
Hot Spot	4U, 1W	4U, 2W	4U, 3W	4U, 4W
	< 100	< 100	< 100	< 100
	3U, 1W	3U, 2W	3U, 3W	3U, 4W
1 meter by 1 meter grids (except for remnants).	< 100	< 100	< 100	< 100
(except for remnance).				
	2U, 1W	2U, 2W	2U, 3W	2U, 4W
	< 100	< 100	< 100	< 100
K = 1000 All scan readings in net cpm	< 100	< 100	< 100	< 100
All alpha readings < 200 cpm	1U, 1W	1U, 2W	1U, 3W	1U, 4W
		161	o 2K	
	L	<b>* 18 %</b>		

 $E \xrightarrow{U} W$ 

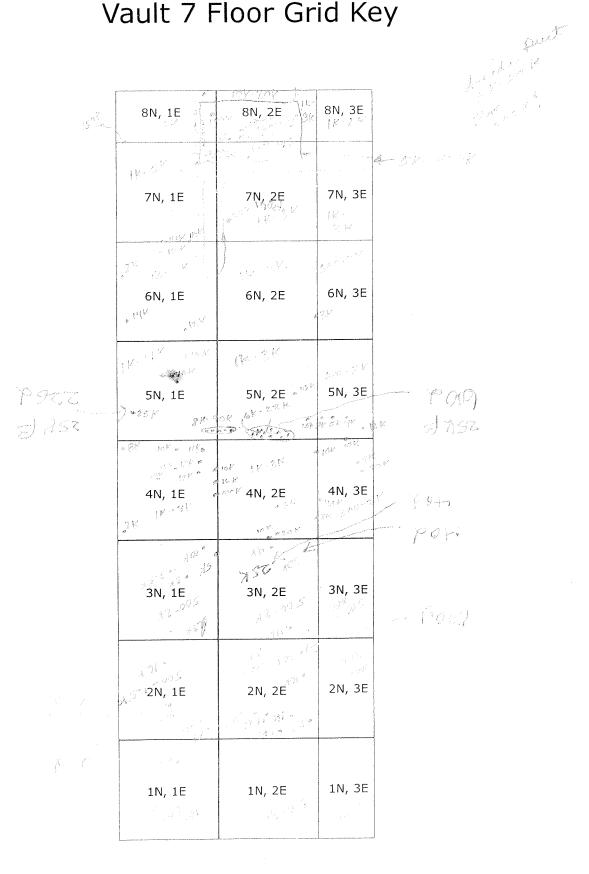
Vault 6 West Wall Initial and Final Survey

[].	8U, 1N < 100	8U, 2N < 100	8U, 3N < 100	8U, 4N < 100	8U, 5N < 100	8U, 6N < 100	8U, 7N < 100	8U, 8N < 100
	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Color Code, Max Readings (net cpm) < 100	7U, 1N	7U, 2N	7U, 3N	7U, 4N	7U, 5N	7U, 6N	7U, 7N	© 7U, 8N 2K © 3.4K © 460 ©
3	- former in							© 3.4K
	6U, 1N < 100	6U, 2N < 100	6U, 3N < 100	6U, 4N < 100	6U, 5N < 100	6U, 6N < 100	6U, 7N < 100	6U, 8N < 100
_ <b>_</b>	5U. 1N	5U, 2N	5U, 3N	5U, 4N	5U, 5N	5U, 6N	5U, 7N	5U, 8N
	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
K = 1000 All scan readings in net com	4U, 1N	4U, 2N	4U, 3N	4U, 4N	4U, 5N	4U, 6N	4U, 7N	4U, 8N
All alpha readings < 200 cpm	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	100 to 300	006						
	3U, 1N < 100	3U, 2N < 100	3U, 3N < 100	3U, 4N < 100	3U, 5N < 100	3U, 6N < 100	3U, 7N < 100	3U, 8N < 100
	2U, 1N	2U, 2N	2U, 3N	2U, 4N	2U, 5N	2U, 6N	2U, 7N	2U, 8N
	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
I	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	1U, 1N	1U, 2N	1U, 3N	1U, 4N	1U, 5N	10, 6N	1U, 7N	1U, 8N
<u>[]</u>				V 500 t	500 to 2000	/		/

Vault 6 West Wall Initial and Final.des

1 meter by 1 meter grids (except for remnants).





E S

1 meter by 1 meter grids (except for remnants).

Vault 7 East Wall Grid Key

	5U, 8S	4U, 8S	30, 85	2U, 8S	1U, 8S
	5U, 7S	4U, 7S	3U, 7S	2U, 7S	1U, 7S
	< ∵> 5U, 6S	4U, 6S	3U, 6S	2U, 6S	1U, 6S
	5U, 5S	4U, 5S	3U, 5S	2U, 5S	1U, 5S
and the second se	5U, 4S	4U, 4S	3U, 4S	2U, 4S	1U, 4S
	5U, 3S 24	4U, 3S	3 <b>U, 3S</b>	2U, 3S	1U, 3S
	ح 'جا 5U, 2S	4U, 2S	3 <b>U, 2S</b>	2U, 2S	1U, 2S
	5U, 1S	4U, 1S	3U, 1S	2U, 1S	1U, 1S

1 meter by 1 meter grids

n v v

- 0

Vault 7 East Wall Key.dsf

Vault 7 West Wall Grid Key

5U, 8N		4U, 8N		3U, 8N		2U, 8N		1U, 8N	
5U, 7N		4U, 7N	120	3U, 7N		2U, 7N		1U, 7N	
5U. 6N	XA 1	4U, 6N		3U, 6N		2U, 6N	2. 2. 4.	10, 6N	e e e e e e e e e e e e e e e e e e e
50. 5N		4U, 5N	N.	3U, 5N		2U, 5N		, 100 - 100	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
511 4N		4U, 4N		3U, 4N		2U, 4N	۲. ا د د د	10, 4N	
EL 3NON	SC LA	1,5 K <100-300	< 106-160 A	3U, 3N	е. 	2U, 3N		1U, 3N	
		3	N 100	3U, 2N	Ç.	2U, 2N		10, 2N	
		4U, 1N		3U, 1N	)	2U, 1N	  	راند المراجع المراجع المراجع 10, 11	• 2

1 meter by 1 meter grids

Vault 7 West Wall Key.dsf

## Vault 7 North Wall Grid Key

1.00		······	-]
5U, 1E	لم (میں 5U, 2E	5U, 3E	
			_
< 15 参	and the same	· · · · ·	
4U, 1E	4U, 2E	4U, 3E	
<100	2 Ion	1 merelyn	
3U, 1E	<sup>و الملاق</sup> 3U, 2E	3U, 3E	
4100	2.100-1a:	L. 100 "	130
2U, 1E	2U, 2E	2U, 3E	
2-100-300	1 209 - 200	L I stranger	
1U, 1E	1U, 2E	1U, 3E	
	the state of the s	an <sup>d th</sup> e	



## Vault 7 South Wall Grid Key

ر / ۵۵ 5U, 1W	5U, 2W	5U, 3W
<100	2100	1.5%
4U, 1W	4U, 2W	4U, 3W
1100	and Region groups and a second s	<100
3U, 1W	3U, 2W 100-300 4100	3U, 3W
2U, 1W	31 2U, 2W	2U, 3W
e James a tarres	an a	
1U, 1W	1U, 2W	1U, 3W

1 meter by 1 meter grids

T-022 Exhaust Tunnel

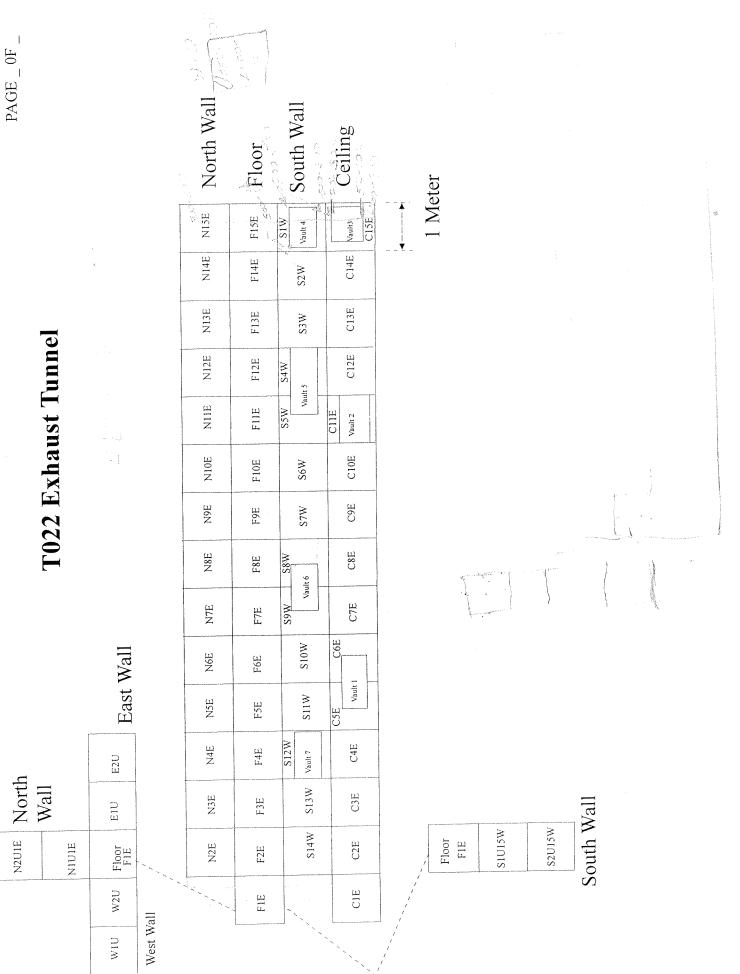
North Wall

ш
L

	North Wall	Floor	South Wall	Ceiling
16 11	300	Y Contraction	H N	And the second
	20%			500-52 Vo.
14			an a	00 X - 00 X
	1.100 200	54 55 11 14 14	100 C	
	2 mo	े २ की ा		•
андальные на	1	95 - 5 96 - 5 7	, 5 . 4 , 5 . 4	1. 0 A.
0/	100, 2 do		000 000	2 'ed ' ' 00'
0				Co1 1
Ś	1100-		James Connection	Q.0.] 7
1		7		
0	1 (00 - 1 (00 -	14. 3K	100 - 2001	41,000
5	1.500	1.512- 4.K. 7.K. 1.K. 3.K.		1 1 1
77	1. 500 1.500°	1 c) : : : :		2500 - 3500 2500 - 3500
Ю	19. 19. 19.	N SA	1 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1-500°
2	1	24	1 C C C C C C C C C C C C C C C C C C C	2) 22 20 2 7
			\$. 	С. Х. Ч.
Ļ			L	··· .

South Wall

2004 (1



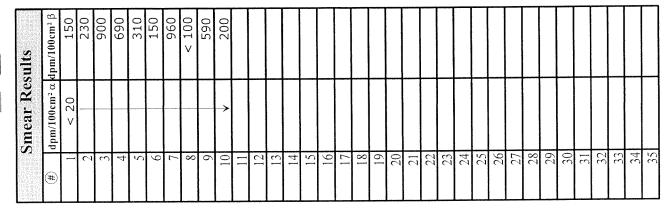
Vent Tunnel Key Map.des

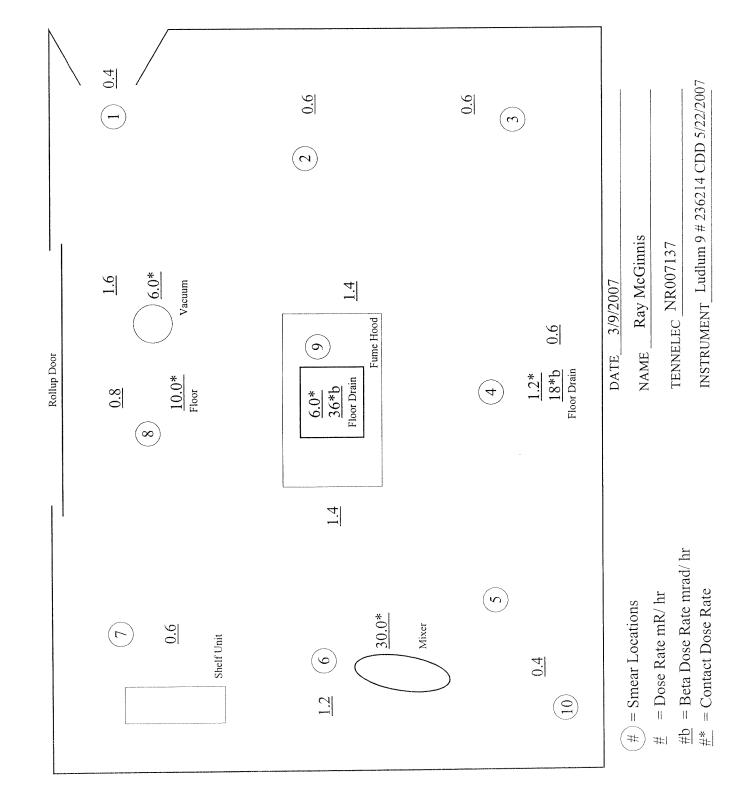


**Building 4021** 

00	BOEING						FACILITY:	RMHF			7
			RADIA'	<b>RADIATION SURVEY RE</b>	REPORT		LOCATION:	4021 Package Room	om		T
SAMPLE	DATE	DATE	PURPOSE:	Job Coverage and Condition Check	ĊĊ	UNITS	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$	mR/hr		T
NUMBER	SAMPLED	ANALYZED		DESCRIPTION		LIMIT	AN	NA	NA		
1 to 10	1/15/2007	1/15/2007	See Attached	, be				See Attached			Т
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COMMENTS:	NTS:				INSTRUMENT		Tenr	Tennelec	Ludlum 9		Т
				NA= Not Applicable	<b>IDENTIFICATION</b>		NR00	NR007137	236214		Т
					CALIBRATION DUE	ш	D	Daily	5/22/2007		T
Tennele	c MDA = 13	dpm/100 cr	$m^2 \alpha$ and 24	Tennelec MDA = 13 dpm/100 cm <sup>2</sup> $\alpha$ and 24 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND		0.15 cpm $\alpha$	3.65 cpm β	AN		
					EFFICIENCY		32.68%	38.99%	AN		
SAMPLED BY:	¢	E. R. McGinnis		ANALYZED BY: 2 R. M & D. Mur .	COUNT TIME			1 Min	NA		l
REVIEWED BY:	Mr. N	W.N.		DATE: 3-16-07			Page	~	of	3	
AD A COL MOVE	-/ +D 000E										

RMHF T021 PACKAGE ROOM SURVEY DIAGRAM





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#### Sample Report

Batch ID:	Smears 1 Minute	Count - 200	070309105	3	Count	Date:	3/9/2007	10:58:37AM
Group:	А				Count	Minutes:	1.00	
Device:	RMHF Tennelec (	NR 007137	7)		Count	Mode:	Simultane	eous
Batch Key:	462				Opera	ting Volt	s: 1477	
Selected	Swipe/Smear		Comme	nts: Packa	ge Room			
Back	ground (cpm)		Eff	íciency (%)				
Alpha Rate: Beta Rate:		).07 ).35	Alpha: Beta:	32.68 ± 38.99 ±	0.97 0.99			
Sample ID	Sample Type	<u>Alpha</u> (dpm)	Unc	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)	
20070309105837-A1	Unknown	2.60	3.07	13.00	149.66	20.57	24.00	
20070309110007-A2	Unknown	5.66	4.34	13.00	226.61	25.28	24.00	
20070309110117-A3	Unknown	5.66	4.34	13.00	906.31	53.62	24.00	
20070309110228-A4	Unknown	-0.46	0.22	13.00	690.86	45.85	24.00	
20070309110347-A5	Unknown	2.60	3.07	13.00	308.69	29.62	24.00	
20070309110458-A6	Unknown	-0.46	0.22	13.00	149.66	20.57	24.00	
20070309110608-A7	Unknown	-0.46	0.22	13.00	960.18	55.47	24.00	
			0.07	40.00	00.40	15 00	24.00	

13.00

13.00

13.00

3.07

0.22

0.22

2.60

-0.46

-0.46

Unknown

Unknown

Unknown

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15.99

42.10

23.64

88.10

593.39

198.40

24.00

24.00

24.00

3/9/2007 11:11:02AM

20070309110718-A8

20070309110837-A9

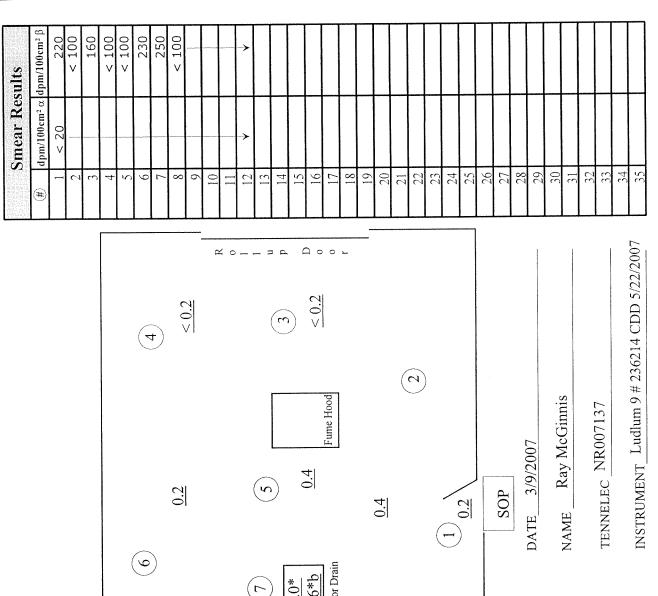
20070309110948-A10

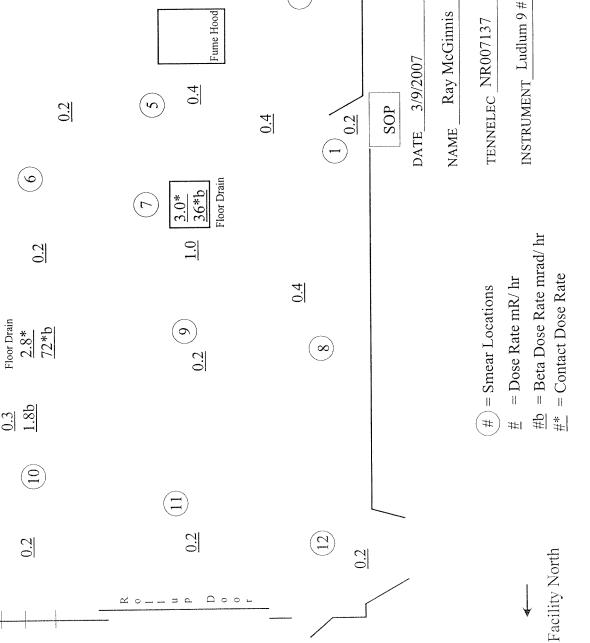
BDE	BDEING				FACILITY:		RMHF		
			RADIATION SURVEY RE	REPORT	LOCATION:		4021 Decon Room	u	
SAMPLE	DATE	DATE	PURPOSE: Job Coverage and Condition Check		UNITS dpm/10	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$	mR/hr	
	SAMPLED	ANALYZED			LIMIT		NA	NA	
1 to 12 1,	1/15/2007	1/15/2007	See Attached				See Attached		
ļ			1						
								-	
COMMENTS:	TS:		<b>.</b>	INSTRUMENT		lennelec	elec		
			NA= Not Applicable	<b>IDENTIFICATION</b>		NR007137	7137	236214	
				CALIBRATION DUE		Daily	lly	5/22/2007	
Tennelec N	MDA = 13 (	dpm/100 ci	Tennelec MDA = 13 dpm/100 cm <sup>2</sup> $\alpha$ and 24 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND	0.15	0.15 cpm $\alpha$	3.65 cpm β	NA	
				EFFICIENCY	32.	32.68%	38.99%	NA	
SAMPLED BY:	<	E. R. McGinnis	ANALYZED BY: GR. MEDUNN	COUNT TIME		1 Min	u	NA	
REVIEWED BY:		$\tilde{N}$	DATE: 3-16-07			Page	~	of	3
FORM 732-A REV 10-2005	)-2005								



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PAGE\_OF





### Sample Report

Batch ID:	Smears 1 Minute	Count - 200	070309103	8	Count	Date:	3/9/2007	7 10:38:56AM
Group:	А				Count	Minutes	<b>s:</b> 1.00	
Device:	RMHF Tennelec (	NR 007137	7)		Count	Mode:	Simultar	neous
Batch Key:	461				Opera	ting Vol	<b>ts:</b> 1477	
Selected	Swipe/Smear		Comme	nts: Decon	Room			
Backg	ground (cpm)		Eff	ficiency (%)				
Alpha Rate: Beta Rate:		0.07 0.35	Alpha: Beta:	32.68 ± 38.99 ±	0.97 0.99			
Sample ID	Sample Type	Alpha	Unc	Alpha MDA	Beta	<u>Unc</u>	Beta MDA	
		<u>(dpm)</u>	0.07	(dpm)	<u>(dpm)</u> 224.05	25.13	<u>(dpm)</u> 24.00	
20070309103856-A1	Unknown	2.60	3.07	13.00	224.05 93.23	16.42	24.00	
20070309104027-A2	Unknown	-0.46	0.22	13.00	93.23 159.92	21.25	24.00	
20070309104137-A3	Unknown	5.66	4.34	13.00 13.00	18.85	8.57	24.00	
20070309104257-A4	Unknown	2.60	3.07 0.22	13.00	65.02	13.94	24.00	
20070309104407-A5	Unknown Unknown	-0.46 2.60	0.22 3.07	13.00	231.74	25.57	24.00	
20070309104517-A6	Unknown	2.60 5.66	4.34	13.00	254.82	26.83	24.00	
20070309104627-A7 20070309104747-A8	Unknown	-0.46	0.22	13.00	62.46	13.69	24.00	
20070309104747-A8 20070309104857-A9	Unknown	-0.40 5.66	4.34	13.00	67.59	14.18	24.00	
20070309104837-A9	Unknown	-0.46	0.22	13.00	41.94	11.56	24.00	
20070309105007-A10	Unknown	2.60	3.07	13.00	21.42	8.95	24.00	
20070309105237-A12	Unknown	-0.46	0.22	13.00	98.36	16.83	24.00	

 $\mathsf{Page}\underline{\overset{9}{\_}}\mathsf{of}\underline{\overset{7}{\_}}$ C:\Eclipse\sample report.rpt

BDEING	EING				FACILITY:	RMHF		
2		ERHERET.	RADIATION SURVEY REP	REPORT	LOCATION:	4021 Decon and	4021 Decon and Package Rooms	
SAMPLE	DATE	DATE	PURPOSE: Job Coverage and SCO	UNITS	$dpm/100 cm^2 \alpha$	dpm/100 cm <sup>2</sup> $\beta$	dpm/100 cm <sup>2</sup> $\beta$	
NUMBER	SAMPLED	ANALYZED				NA	NA	
-	1/15/2007	1/15/2007	Crane Exterior		<20	640	250,000	
2	1/15/2007	1/15/2007	Crane Interior and cable		<20	1200	150,000	
<i>с</i> о	1/15/2007	1/15/2007	Decon Room horizontal surfaces		<20	830	100,000	
4	1/15/2007	1/15/2007			<20	690	to	
5	1/15/2007	1/15/2007			<20	680	300,000	
0	1/15/2007	1/15/2007			40	3300		
2	1/15/2007	1/15/2007			50	4700		
ω	1/15/2007	1/15/2007			20	3800		
0	1/15/2007	1/15/2007	•		<20	3700		
07	1/15/2007	1/15/2007	Package Room horizontal surfaces		<20	2500		
	1/15/2007	1/15/2007			20	430		
12	1/15/2007	1/15/2007			<20	3200		
13	1/15/2007	1/15/2007			<20	290		
14	1/15/2007	1/15/2007			20	2100		
15	1/15/2007	1/15/2007			<20	2000		
16	1/15/2007	1/15/2007	•		<20	1300		
COMMENTS:	NTS:		NDA= No Detectable Activity	INSTRUMENT	Tei	Tennelec	Ludlum 12	
			NA= Not Applicable	<b>IDENTIFICATION</b>	NR	NR007137	125264	
				CALIBRATION DUE		Daily	4/20/2007	
Tennele	c MDA = 13	dpm/100 ci	Tennelec MDA = 13 dpm/100 cm <sup>2</sup> $\alpha$ and 25 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND	0.15 cpm $\alpha$	3.90 cpm β	500 to 2000 cpm $\beta$	
2.00.00 <sup>.00</sup> .00.00				EFFICIENCY	32.95%	38.60%	10.00%	
SAMPLED BY:		E, R. McGinnis	ANALYZED BY: G. MEN uni	COUNT TIME	~	1 Min	NA	
REVIEWED BY:		N. 11. N.	DATE:		Page	e	l of 2	
ECOM 732 A DD	N/ 40-2005							

FORM 732-A REV 10-2005

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### Sample Report

Batch ID:	Smears 1 Minute Count - 200	701150851		Count Date:	1/15/2007 8:51:49AM
Group:	А			Count Minutes:	1.00
Device:	RMHF Tennelec (NR 007137	)		Count Mode:	Simultaneous
Batch Key:	231			<b>Operating Volts</b> :	1477
Selected	Swipe/Smear	Comment	ts: Decon Ro	oom Horizontals and E	quipment
Back	ground (cpm)	Effic	iency (%)		
Alpha Rate: Beta Rate:	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	Alpha: Beta:	02.00 =	).98 ).98	
Sample ID	Sample Type <u>Alpha</u>	<u>Unc</u>	Alpha MDA (dpm)		a MDA dpm)

		(dpm)		<u>(dpm)</u>	<u>(dpm)</u>		<u>(dpm)</u>	
20070115085149-A1	Unknown	8.65	5.27	13.00	642.69	44.24	25.00	
20070115085320-A2	Unknown	2.58	3.04	13.00	1160.79	62.43	25.00	
20070115085440-A3	Unknown	2.58	3.04	13.00	834.39	51.33	25.00	
20070115085550-A4	Unknown	8.65	5.27	13.00	689.32	46.02	25.00	
20070115085700-A5	Unknown	2.58	3.04	13.00	684.14	45.83	25.00	
20070115085810-A6	Unknown	39.00	11.01	13.00	3290.15	124.41	25.00	
20070115085930-A7	Unknown	48.10	12.23	13.00	4720.09	162.82	25.00	
20070115090040-A8	Unknown	23.82	8.62	13.00	3828.97	139.02	25.00	
20070115090150-A9	Unknown	8.65	5.27	13.00	3686.49	135.18	25.00	
20070115090310-A10	Unknown	20.79	8.06	13.00	2448.25	101.02	25.00	
20070115090420-A11	Unknown	-0.46	0.22	13.00	430.28	35.52	25.00	
20070115090530-A12	Unknown	5.61	4.30	13.00	3170.99	121.15	25.00	
20070115090640-A13	Unknown	5.61	4.30	13.00	285.21	28.62	25.00	
20070115090800-A14	Unknown	20.79	8.06	13.00	2134.80	92.06	25.00	
20070115090910-A15	Unknown	5.61	4.30	13.00	1994.92	87.99	25.00	
20070115091020-A16	Unknown	5.61	4.30	13.00	1282.54	66.36	25.00	

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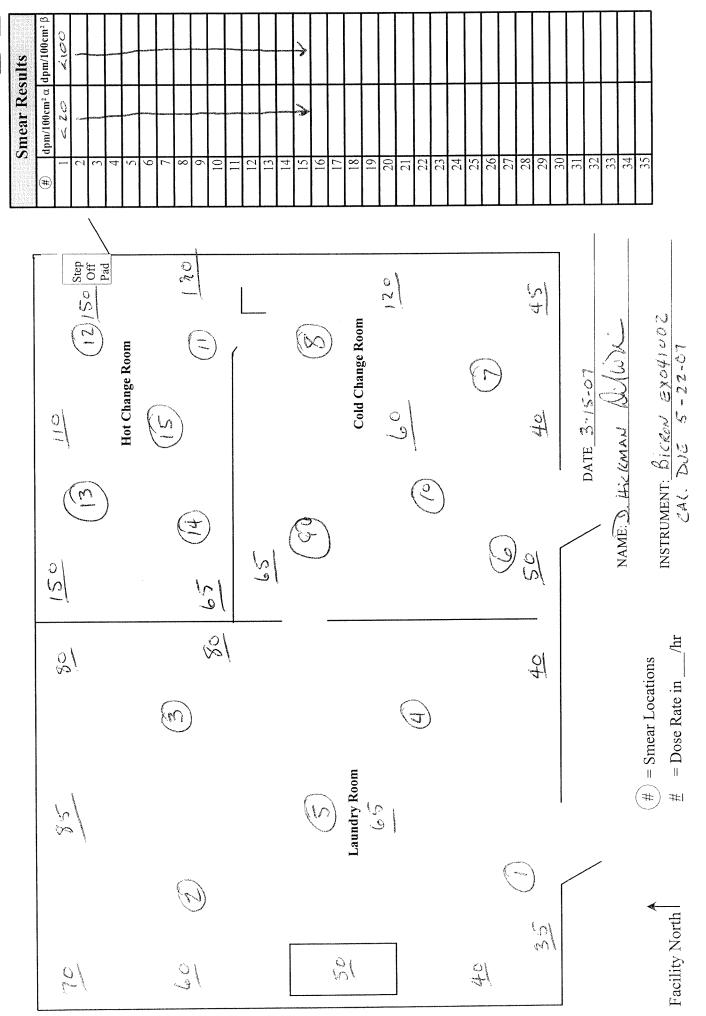
1/15/2007 9:11:35AM

ן ן א					L				
	BUEINE					FACILII Y:	RIVITI		
٢			<b>RADIATION SURVEY REP</b>	REPORT		LOCATION:	4021 Decon a	4021 Decon and Packaging Room	Room
SAMPLE	DATE	DATE	PURPOSE: Pre Removal Survey		UNITS	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$
NUMBER	SAMPLED	ANALYZED				Removable NA	Removable NA	Total NA	Total NA
~	3/2/2007	3/2/2007	Package Room Duct 1			< 72	5,000	NA*	100,000
. ~	3/2/2007	3/2/2007	Package Room Duct 2			< 72	10,000	NA*	25,000
I	3/2/2007	3/2/2007	Package Room Duct 3			< 72	40,000	NA*	2,000,000
4	3/2/2007	3/2/2007	Package Room Duct 4			200	100,000	NA*	2,500,000
. v.	3/2/2007	3/2/2007	Package Room Duct 5			200	1,200,00	NA*	20,000,000
ی ر <u>د</u>	3/2/2007	3/2/2007	Decon Room Duct 6			140	80,000	NA*	2,000,000
~ ~	3/2/2007	3/2/2007	Decon Room Duct 7			72	60,000	NA*	1,800,000
-									
					<b> </b>				
						-	-		C. E
COMMENTS:	INTS:			INSTRUMENT		Ludium 12	Luaium 12		10200111 12
			NA= Not Applicable	IDEN IIFICATION		964522	+07C71	223430	+07071
Ludlum	12 meters	used for sm	Ludlum 12 meters used for smear analysis.	CALIBRATION DUE		4/23/2007	4/20/2007	4/23/2007	4/20/2007
Smear a	activity was	too hight fo	inalysis.	BACKGROUND		0 cpm α	400 cpm β	0 cpm α	400 cpm β
1001.00 TO 1001.00	۱.			EFFICIENCY		28.00%	10.00%	28.00%	10.00%
SAMPLED BY:	) ВҮ: Е.	. R. McGinnis	ANALYZED BY: E.D. ANGED JUNN	COUNT TIME		NA	NA	NA	NA
REVIEWED BY:		N. N. N.C.	DATE:			Page	1	1 of	1
FORM 732-A REV 10-2005									

BDEING	*9	TADIATION SUBVEV BEDODT		FACILITY:	RMHF		
、 、		LAUIALION SURVEI		LOCATION:	4021		
SAMPLE DATE	TE DATE	Purpose: Status/Routine	UNITS	S $\alpha  dpm/100 \text{cm sq}$	βγ dpm/100cm sq	uR/Hr	
Ś	AP	DESCRIPTION	LIMIT	20	100	N/A	
1 3/15/2007	2007 3/15/2007	Status/routine Survey of Building 4021 Change room.	n.	<20	<100	See Attached	
2							
3							
4							
5							
6							
7							
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							
6							
10							
11							
12							
13							
14							
15							
COMMENTS:		4	INSTRUMENT	TEN	TENNELEC	Bicron	
			<b>IDENTIFICATION</b>	NRO	NR007137	EX041002	
			CALIBRATION DUE	DA	DAILY	5/22/2007	
Tennelec MD,	A = 11 dpm/10	Tennelec MDA = 11 dpm/100 cm <sup>2</sup> $\alpha$ and 24 dpm/ 100 cm <sup>2</sup> $\beta$	BACKGROUND	.05 cpm	3.25 cpm	NA	
NA=Not Applicable	cable	\ F	EFFICIENCY	33.07%	38.84%	NA	
SAMPLED BY:	D.W. Hickman	ANALYZED BY: () ()	COUNT TIME		1 MIN	NA	
REVIEWED BY:	GR MED.	(MAN DATE: 3-16-0)	See Attachment 🛒	Page		of	3
FORM 732-A REV 10-05							



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### Sample Report

Batch ID:	Smears 1 Minute	Count - 200	070315122	6	Coun	t Date:	3/15/2007 12:26:59PM
	A				Count	t Minutes	<b>s:</b> 1.00
Group:		ND 00740	7)				Simultaneous
Device:	RMHF Tennelec (	NR 007137	()		Coum	Mode:	
Batch Key:	493				Opera	ating Vol	<b>ts:</b> 1477
Selected	Swipe/Smear		Comme	nts: Change	e room bldg	j 21	
Background (cpm)			Eff	iciency (%)			
Alpha Rate: Beta Rate:	•••• =	).07 ).21	Alpha: Beta:	33.07 ± 38.84 ±	0.99 0.98		
Sample ID	Sample Type	<u>Alpha</u> (dpm)	Unc	<u>Alpha MDA</u> (dpm)	<u>Beta</u> (dpm)	<u>Unc</u>	<u>Beta MDA</u> (dpm)
20070315122659-A1	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315122829-A2	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315122939-A4	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315123050-A3	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315123209-A5	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315123320-A6	Unknown	-0.15	0.21	11.00	7.08	6.33	24.00
20070315123430-A7	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315123540-A8	Unknown	-0.15	0.21	11.00	14.80	7.75	24.00
20070315123700-A9	Unknown	5.90	4.29	11.00	-0.64	4.49	24.00
20070315123810-A10	Unknown	2.87	3.03	11.00	19.95	8.57	24.00
20070315123919-A11	Unknown	-0.15	0.21	11.00	4.51	5.78	24.00
20070315124029-A12	Unknown	-0.15	0.21	11.00	1.93	5.18	24.00
20070315124150-A13	Unknown	-0.15	0.21	11.00	35.40	10.67	24.00
20070315124259-A14	Unknown	-0.15	0.21	11.00	27.67	9.67	24.00
20070315124410-A15	Unknown	-0.15	0.21	11.00	25.10	9.32	24.00



Building 4021 Drain Tank Pit

BDEING					FACILITY:	RMHF		
),		<b>RADIATION SURVEY I</b>	/EY REPORT		LOCATION:	Outside of 4021	21	
SAMPLE DATE	E DATE	PURPOSE: Characterization Survey of RA Drain Tank Pit		UNITS	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$	dpm/100 cm <sup>2</sup> $\alpha$	dpm/100 cm <sup>2</sup> $\beta$
NUMBER	ED ANALYZED			LIMIT	Removable-NA	Removable-NA	Direct-NA	Direct-NA
1-22 10/13/2006		10/13/2006 Smear survey of 4 walls, floor and pipes			see attached	see attached		
10/13/2	006 10/13/200	10/13/2006 10/13/2006 Direct reading survey of 4 walls, floor and pipes	es				see attached	see attached
COMMENTS:		NA= Not Applicable	INSTRUMENT		Tenr	Tennelec	Ludlum 12	Ludlum 12
North Sait	ack5 < 64	K = 1000	<b>IDENTIFICATION</b>		NROC	NR007137	NO381728	NO355661
with thick paint	Parist		CALIBRATION DUE		De	Daily	11/15/2006	11/13/2006
Tennelec MDA = 12	dpm/100 cm <sup>2</sup>	d 24 dpm/100 cm <sup>2</sup> $\beta$	BACKGROUND		0.10 cpm α	3.55 cpm β	0 cpm ∞	10K cpm β
			EFFICIENCY		33.68% α	38.59% β	28% α	12% ß
SAMPLED BY: A E.	E. R. McGinnis	ANALYZED BY: GRANGED AND A	COUNT TIME		1	1 Min	NA	NA
		DATE: 3-16-07			Page	4	of	7
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BDEING	° DA				L	FACILITY:	RMHF			
),			<b>RADIATION SURVEY RE</b>	<b>/EY REPORT</b>	<u></u>	LOCATION:	Outside of 4021	21		
SAMPLE	DATE	DATE	PURPOSE: Characterization Survey of RA Drain Tank Pit		UNITS	mR/hr	mrad/hr			
NUMBER	SAMPLED	ANALYZED	DESCRIPT		LIMIT	NA	NA			
	10/13/2006		10/13/2006 Gamma and beta readings in pit			see attached	see attached			
COMMENTS:			NA= Not Applicable	INSTRUMENT		Eberlin	Eberline RO-2			
				<b>IDENTIFICATION</b>		NO1	NO140572			
			CA	CALIBRATION DUE	ш	12/11	12/11/2006			
			BA	BACKGROUND		2	NA			
				EFFICIENCY		2	NA			
SAMPLED BY:		E. R. McGinnis	ANALYZED BY: GR MGS	WWW COUNT TIME		2	NA			
REVIEWED BY:			DATE:			Page		2 of	7	

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#### Sample Report

			-	-				
Batch ID:	Smears 1 Minute C	Count - 2000	610130909	9	Count	Date:	10/13/2006 9:09:21	AM
Group:	A				Count	Minutes	: 1.00	
Device:	RMHF Tennelec (N	NR 007137)	)		Count	Mode:	Simultaneous	
Batch Key:	362				Opera	ting Vol	<b>ts:</b> 1477	
Selected	Swipe/Smear		Comme	<b>nts:</b> 4021 R	A Liquid Wa	aste Drai	n Tank Pit	
Backg	ground (cpm)		Eff	iciency (%)				
Alpha Rate:	0.10 ± 0	.14	Alpha:	33.68 ±	1.00			
Beta Rate:		.49	Beta:	38.59 ±	0.98			
Sample ID	Sample Type	Alpha	Unc	Alpha MDA	Beta	Unc	Beta MDA	
		<u>(dpm)</u>		<u>(dpm)</u>	<u>(dpm)</u>		<u>(dpm)</u>	
20061013090921-A92	۱ Unknown	-0.30	0.42	12.00	68.55	14.36	24.00	
20061013091052-A94	💈 Unknown	14.55	6.67	12.00	275.88	28.09	24.00	
20061013091203-A37	💈 Unknown	5.64	4.22	12.00	229.23	25.56	24.00	
20061013091312-A20	🖉 Unknown	2.67	3.00	12.00	283.65	28.50	24.00	
20061013091432-A71	Unknown	2.67	3.00	12.00	138.52	19.92	24.00	
20061013091542-A13	🖉 Unknown	11.58	5.96	12.00	628.34	43.66	24.00	
20061013091652-A83	🧻 Unknown	-0.30	0.42	12.00	348.44	31.72	24.00	
20061013091802-A8	🧣 Unknown	5.64	4.22	12.00	571.32	41.41	24.00	
20061013091922-A17	🧳 Unknown	2.67	3.00	12.00	363.99	32.46	24.00	
20061013092032-A55	10 Unknown	5.64	4.22	12.00	200.72	23.91	24.00	
20061013092142-A60	🐧 Unknown	8.61	5.17	12.00	174.80	22.32	24.00	
20061013092253-A22	12 Unknown	-0.30	0.42	12.00	195.54	23.59	24.00	
20061013092402-A15	🔰 Unknown	5.64	4.22	12.00	148.89	20.63	24.00	
20061013092522-A9	u Unknown	2.67	3.00	12.00	164.44	21.66	24.00	
20061013092632-A11	🖌 Unknown	2.67	3.00	12.00	286.24	28.63	24.00	
20061013092742-A88	🔥 Unknown	5.64	4.22	12.00	374.36	32.94	24.00	
20061013092852-A7	Unknown	17.52	7.30	12.00	1374.72	69.26	24.00	
				10.00	070.00	45 00	04.00	

672.39

2489.11

941.92

7724.16

32243.37

12.00

12.00

12.00

12.00

12.00

0.42

8.44

6.67

9.44

35.60

**\%** Unknown

9 Unknown 20 Unknown

24 Unknown

2-Unknown

20061013093012-A16

20061013093122-A63

20061013093232-A2

20061013093343-A66

20061013093502-A6

-0.30

23.45

14.55

29.39

382.67

45.36

102.18

55.08

241.28

865.33

24.00

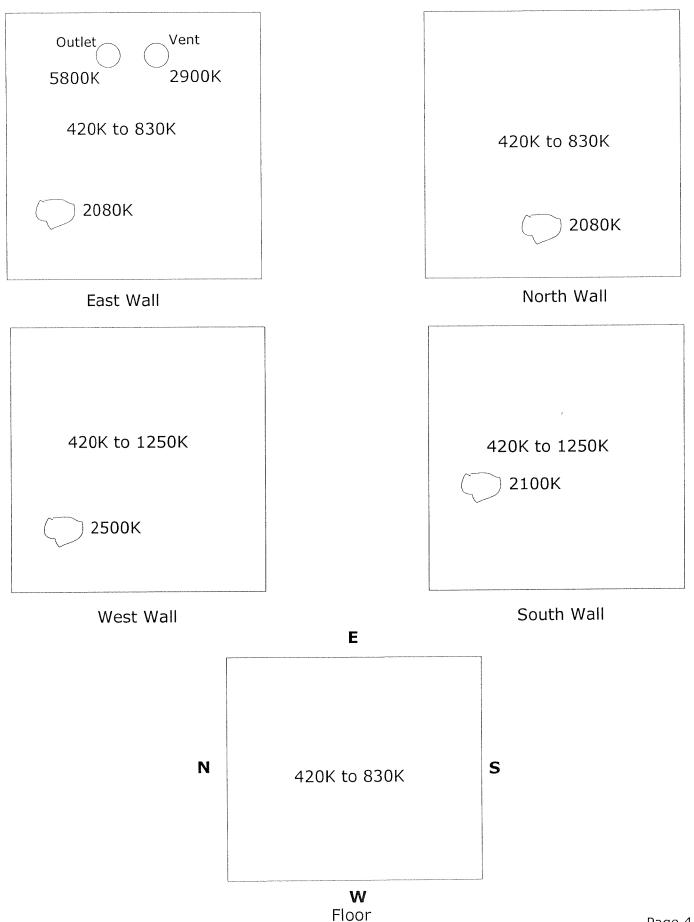
24.00

24.00

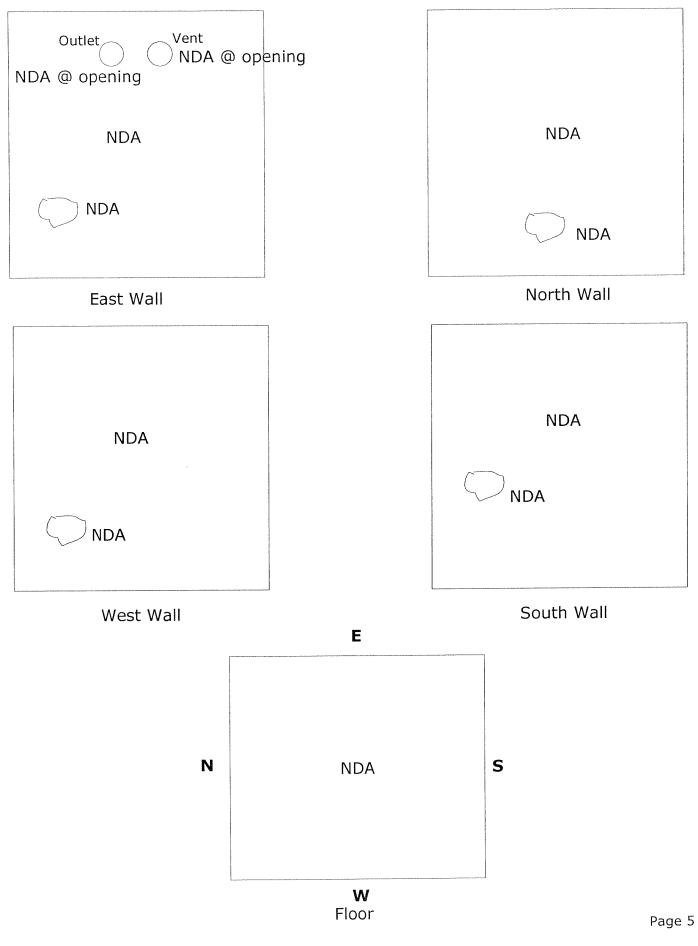
24.00

24.00

## Beta Readings (net dpm/100cm<sup>2</sup>)

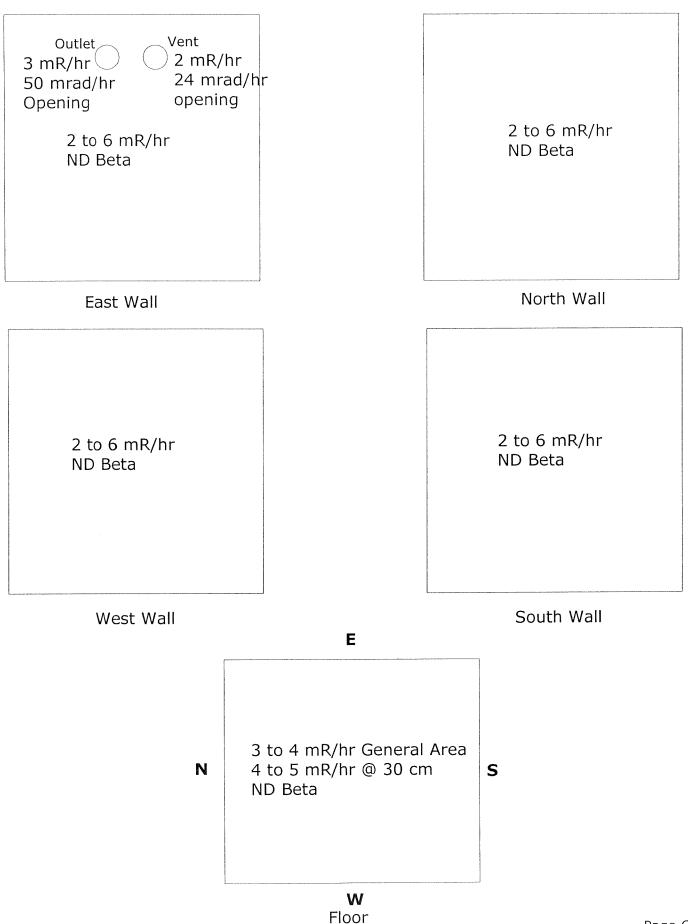


## Alpha Readings (net dpm/100cm<sup>2</sup>)

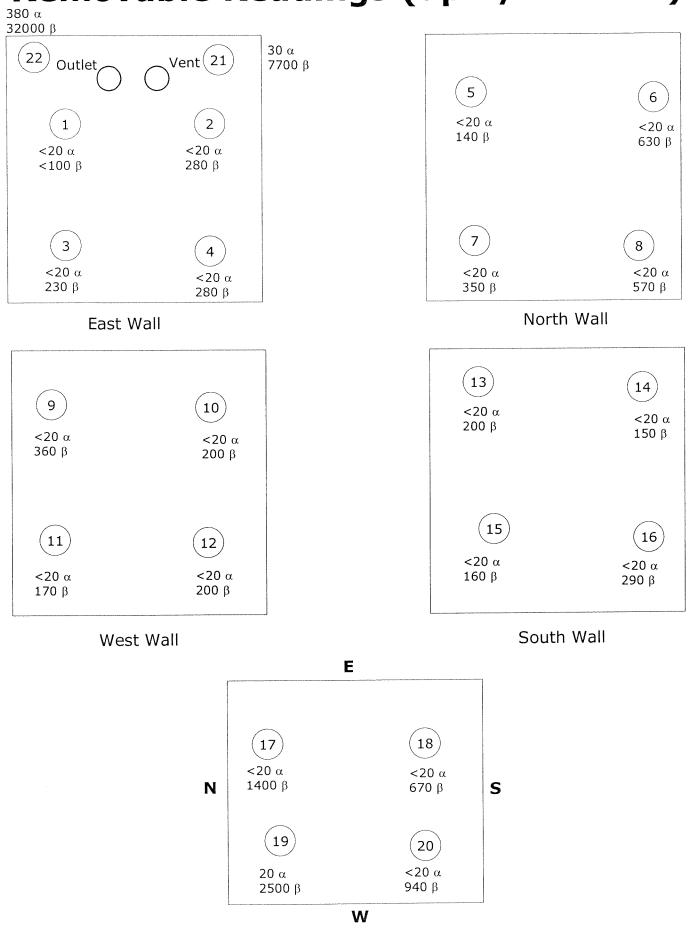


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## **Dose-Rate Readings (mR/hr & mrad/hr)**



# Removable Readings (dpm/100 cm<sup>2</sup>)



Floor

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