

## LAB ATTIC PIPE SURVEY

When decommissioning started in the Laboratory area the laboratory attic was isolated from the laboratory rooms by a sheetrock ceiling. This attic area contained three contaminated systems plus numerous electrical, plumbing and duct systems.

The contaminated systems were:

1. Hood and slotbox exhaust system:

Approximately 500 dpm/100 cm<sup>2</sup> smearable maximum internal contamination that was processed as LSA waste.

2. Glovebox exhaust system:

Approximately 20,000 dpm/100 cm<sup>2</sup> smearable maximum internal contamination that was processed as TRU waste.

3. Vacuum transfer system:

Approximately 100,000 dpm/100 cm<sup>2</sup> smearable maximum internal contamination that was processed as TRU waste.

After these systems were removed and all the equipment was removed from the rooms below, we removed the sheetrock ceiling and steam cleaned the entire attic area. After steam cleaning, we surveyed the attic area with an Eberline PRM-6 and removed all hot spots that were found. We followed our PRM-6 survey with a spot release instrument survey (PRS-2-Ludlum 43-5 detector) and removed all hot spots that were found. Before the final release survey was started we used a water hose and wet vac and washed down the entire laboratory.

We removed approximately 50% of the laboratory attic piping during this clean-up, but approximately 2000 meters of piping remained to be surveyed. To simplify this survey and increase the sensitivity of our release survey instrumentation, two Ludlum 43-4 (60 cm<sup>2</sup> active area) air proportional probes were modified to use propane gas. We added a liquid propane bottle (AC-2G) and valve system to two Ludlum 2220. This resulted in an instrument that had approximately 18% efficiency with a long narrow detector allowing approximately 50% detector coverage for each direct reading on small diameter pipe. We used a cut off of 4 cpm maximum permissible background which would be equivalent to 44 dpm/100 cm<sup>2</sup>.

Each pipe that was longer than one meter was direct surveyed on two sides (top and bottom if accessible) every two meters and one smear was taken of approximately 100 cm<sup>2</sup> at that point. All smears were taken on Whatman smear paper and counted in Hewlett--Packard 5560A automatic sample counter. No smear results were above 20 dpm/100 cm<sup>2</sup>. Of the approximately 2000 direct readings taken 30 readings were greater than 100 dpm/100 cm<sup>2</sup> and nine of those were greater than 300 dpm/100 cm<sup>2</sup>. We surveyed around these hot readings and cleaned all areas greater than 100 dpm/100 cm<sup>2</sup> to less than 100 dpm/100 cm<sup>2</sup>.

Since no maps were available of the remaining piping systems in the laboratory attic area, I decided to place permanent numbers on each line for identification and to reference each survey to this numbering system. All direct and smearable readings recorded on these survey sheets are recorded in disintegrations per minute above background. I have included in this survey a control chart for a 95% confidence level with daily source and background responses for the instruments used for this attic pipe survey.

*W. A. Rogers*

W. A. Rogers

Pu-Plant Lab Area Pipe Survey

	<u>DIRECT</u>	<u>SMEAR</u>
TOTAL DPM	60,907	2517
# READINGS	2643	1337
AVG. DPM/100cm <sup>2</sup>	23.04	1.88
MAX READING	99	15
MDA DPM/100cm <sup>2</sup>	60.99	4.55

W.A. Rogers



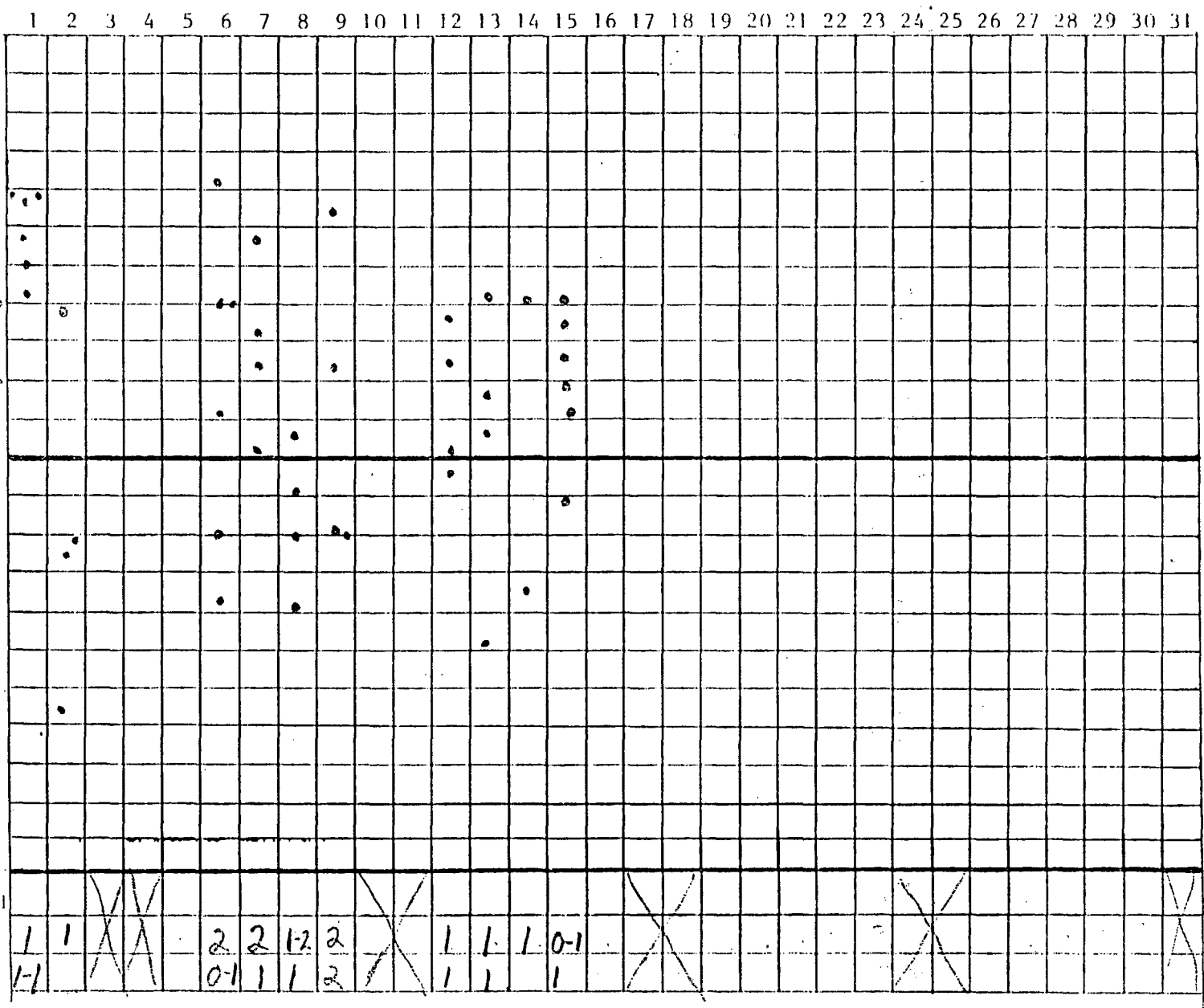
Month - Sept  
 Instrument - Lucas 2220  
 Detector - 43-4 propane  
 Date of Calibration - 9-1-88  
 Operator - Marge Lintz

Serial - 50058  
 Source Number Value  
 SN 112 1113 2/10/47

$\bar{x} + \sigma$  309

$\bar{x} = 276$

$\bar{x} - \sigma$  243



instrument background  
 Morning CPM  
 Evening CPM

Month - Aug

Instrument - Lumbee 2220

Detector - 43-4 propane

Date of Calibration - 8-1-88

Operator - M. J. [unclear]

Serial - 50064

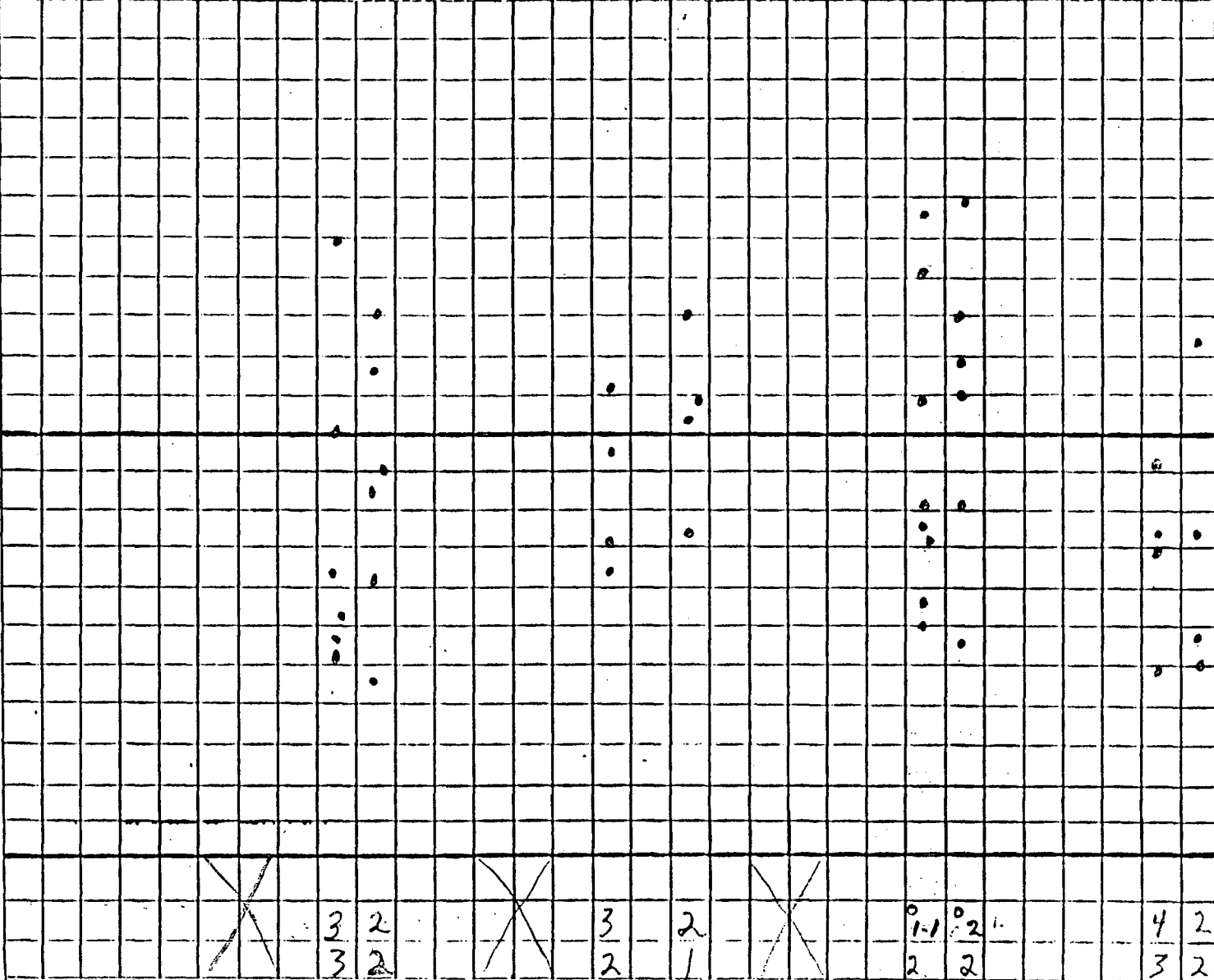
Source Number Value

112      1113 @/m 477

~~1~~ 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

+ σ 305

308  
303  
298  
293  
288  
283  
278  
273  
268  
263  
258  
253  
248  
243



7-273

- σ 241

Month - Sept  
 Instrument - Ludlum 2220  
 Detector - 43-4 propane  
 Date of Calibration - 9-1-88  
 Operator - Margie Monty

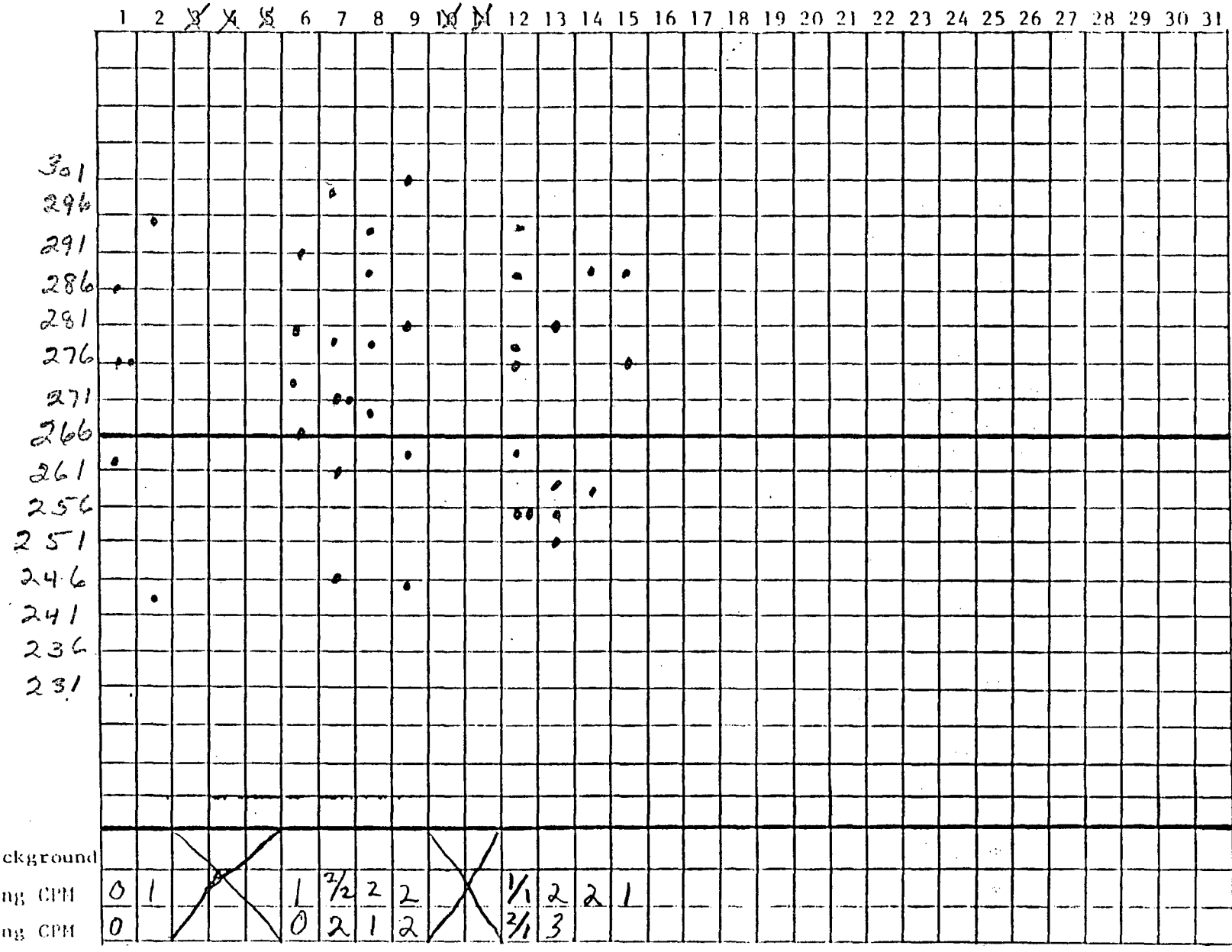
Serial - 50064

Source Number Value  
112 1113 d/m 47T

Σ + σ 298

Σ - 266

Σ - σ 234



Instrument background

Morning CPM

Evening CPM

LINE NUMBER \_\_\_\_\_ DATE *9-15-88*  
 INSTRUMENT *Ludlum 2220* SERIAL NUMBER *50058-50064*  
 DETECTOR *43-4 Propane Gas Prop.* OPERATOR *W. C. Rogers*  
 SOURCE NUMBER AND VALUE # *112 1113 dpm 4 π*  
 SOURCE RESPONSE AND BACKGROUND AM *50058 Bkg-1 289-297*  
 SOURCE RESPONSE AND BACKGROUND PM *50064 Bkg-1 276-289*

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
<i>Line # 14</i>	<i>Alum.</i>	<i>2 1/2"</i>	<i>6 meters B</i>	<i>1</i>	<i>11</i>	<i>N/A</i>
<i>18</i>	<i>Copper</i>	<i>5"</i>	<i>2 meters B</i>	<i>0</i>	<i>0</i>	<i>N/A</i>
<i>19</i>	<i>Black Iron</i>	<i>1 1/4"</i>	<i>19 meters B</i>	<i>2</i>	<i>22</i>	<i>N/A</i>
<i>20</i>	<i>Black Iron</i>	<i>1 1/4"</i>	<i>0 meters T</i>	<i>3</i>	<i>33</i>	<i>N/A</i>
			<i>6 meters T</i>	<i>7</i>	<i>77</i>	<i>N/A</i>
			<i>6 meters B</i>	<i>0</i>	<i>0</i>	<i>N/A</i>
<i>39</i>	<i>Alum.</i>	<i>3/4"</i>	<i>10 meters T</i>	<i>6</i>	<i>66</i>	<i>N/A</i>
<i>70</i>	<i>Alum.</i>	<i>1/2"</i>	<i>0 meters T</i>	<i>5</i>	<i>55</i>	<i>N/A</i>
			<i>B</i>	<i>7</i>	<i>77</i>	<i>N/A</i>
			<i>2 meters T</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
			<i>B</i>	<i>5</i>	<i>55</i>	<i>N/A</i>
			<i>4 meters T</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
			<i>B</i>	<i>5</i>	<i>55</i>	<i>N/A</i>
			<i>6 meters T</i>	<i>3</i>	<i>33</i>	<i>N/A</i>
			<i>B</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
			<i>8 meters T</i>	<i>5</i>	<i>55</i>	<i>N/A</i>
			<i>B</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
			<i>10 meters T</i>	<i>8</i>	<i>88</i>	<i>N/A</i>
			<i>B</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
<i>77</i>	<i>Alum.</i>	<i>1/2"</i>	<i>2 meters B</i>	<i>8</i>	<i>88</i>	<i>N/A</i>
<i>85</i>	<i>Alum.</i>	<i>1/2"</i>	<i>0 meters N</i>	<i>2</i>	<i>22</i>	<i>N/A</i>
			<i>S</i>	<i>1</i>	<i>11</i>	<i>N/A</i>
<i>105</i>	<i>Alum.</i>	<i>1/2"</i>	<i>2 meters E</i>	<i>6</i>	<i>66</i>	<i>N/A</i>
			<i>W</i>	<i>4</i>	<i>44</i>	<i>N/A</i>
<i>125</i>	<i>Alum</i>	<i>1/2"</i>	<i>4 meters T</i>	<i>0</i>	<i>0</i>	<i>N/A</i>



LINE NUMBER \_\_\_\_\_ DATE 9-15-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 - 50064  
 DETECTOR 43-4 Propane Gas Prop. OPERATOR W.A. Rogers  
 SOURCE NUMBER AND VALUE # 112 1113 dpm 4  $\pi$   
 SOURCE RESPONSE AND BACKGROUND AM 50058 Bkg.-1 289-297  
 SOURCE RESPONSE AND BACKGROUND PM 50064 Bkg.-1 276-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Line 138	Alum.	1/2"	0 meters T	1	11	N/A
			B	2	22	N/A
			2 meters N	2	22	N/A
			S	1	11	N/A
			4 meters T	2	22	N/A
			B	3	33	N/A
			5 meters T	2	22	N/A
			B	2	22	N/A
141			2 meters N	4	44	N/A
165	Alum.	1/2"	1 meter T	3	33	N/A
193	Alum.	1/2"	0 meters S	3	33	N/A
199	Alum.	3/4"	4 meters B	0	0	N/A
280	Durcon	1 1/2"	10 meters N	0	0	N/A
282	Durcon	1 1/2"	0 meters N	1	11	N/A
			SE	4	44	N/A
			11 meters T	1	11	N/A
292	Black Iron	2"	0 meters E	8	88	N/A
			W	1	11	N/A

LINE NUMBER 1 DATE 8-9-88/8-10-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 GAS PROPORTIONAL OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-9-88</sup> 294-242-246 Bkg 3/8-10-88 254-265-241 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 255-273-246 Bkg 3/8-10-88 288-268-280 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm. 129 FLOOR LEVEL	Aluminum	1 1/2"	Rm 129 West Wall			
	CONDUIT		FLOOR LEVEL			
0 meters			North Side	0	0	0
"			East Side	0	0	
			WEST WALL			
2 meters			North Side	1	11	0
"			East Side	0	0	
4 meters			North Side	1	11	3
			East Side	0	0	
END: Attic Ceiling						
into Motor Control						

LINE NUMBER 2 DATE 8-9-88/8-10-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4Ti  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-9-88</sup> 294 - 242 - 246 Bkg 3 / 254 - 265 - 241 Bkg 2 8-10-88  
 SOURCE RESPONSE AND BACKGROUND PM 255 - 273 - 246 Bkg 3 / 288 - 268 - 280 Bkg 2 8-10-88

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum	1 1/2"	129-WEST WALL			
0 meters	CONDUIT		East Side	2	22	3
2 meters			East Side	0	0	6
4 meters			East Side	1	11	3
END: ATTIC CEILING						
INTO MOTOR CONTROL						

LINE NUMBER 3

DATE 8-9-88/8-10-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR 43-4 GAS PROPORTIONAL

OPERATOR D. Ford

SOURCE NUMBER AND VALUE #112 1113 d/m 4π

SOURCE RESPONSE AND BACKGROUND AM <sup>8-9-88</sup> 294-242-246 Bkg3/254-265-241 Bkg2 8-10-88

SOURCE RESPONSE AND BACKGROUND PM 255-273-246 Bkg3/288-268-280 Bkg2 8-10-88

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum	1 1/2"	129 West Wall			
0 meters	Conduit		East Side	1	11	0
2 meters			East Side	0	0	3
4 meters			East Side	1	11	0
END: Attic Ceiling into Motor Control						

LINE NUMBER 4 DATE 8-9-88/8-10-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-9-88</sup> 294-242-246 Bkg3 / 254-265-241 Bkg2 8-10-88  
 SOURCE RESPONSE AND BACKGROUND PM 255-273-246 Bkg3 / 288-268-280 Bkg2 8-10-88

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
129 Floor Level	Aluminum	1 1/2"	129 WEST WALL			
0 meters	CONDUIT		East Side	1	11	0
2 meters			East Side	0	0	0
4 meters			East Side	1	11	0
END: Attic Ceiling into Motor Control						

LINE NUMBER 5 DATE 8-9-88/8-10-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 8-9-88 294-242-246 Bkg 3/8-10-88 254-265-241 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 8-9-88 255-273-246 Bkg 3/8-10-88 288-268-280 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Rm. 129 Floor Level	Aluminum	1 1/2"	129 WEST WALL			
0 meters	CONDUIT		East Side	0	0	3
2 meters			East Side	0	0	0
4 meters			East Side	0	0	0
END: Attic Ceiling						
into Motor CONTROL						

LINE NUMBER 6 DATE 8-9-88 / 8-10-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 8-9-88 294-242-246 Bkg3 / 8-10-88 254-265-241 Bkg2  
 SOURCE RESPONSE AND BACKGROUND PM 8-9-88 255-273-246 Bkg3 / 8-10-88 288-268-280 Bkg2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
129 Floor Level	Aluminum	1 1/2	129 WEST WALL			
0 meters	CONDUIT		East Side	0	0	0
"			South Side	0	0	
2 meters			East Side	0	0	0
"			South Side	0	0	
4 meters			East Side	0	0	3
			South Side	0	0	
END: Attic Ceiling into Motor CONTROL						

LINE NUMBER 7 DATE 8-10-88/8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg 2 / <sup>8-16-88</sup> 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum CONDUIT	4"	Rm 129 North by Rm 130			
0 meters			South Side	5	55	15
			West Side	7	77	
			East Side	5	55	
2 meters			West Side	2	22	3
			South Side	3	33	
			East Side	1	11	
129 ATTIC 4 meters			West Side	0	0	3
			South Side	5	55	
			East Side	1	11	
6 meters			Top Side	0	0	0
			Bottom Side	0	0	
8 meters			Top Side	2	22	3
			Bottom Side	2	22	
10 meters			Top Side	4	44	6
			Bottom Side	5	55	
12 meters			Top Side	0	0	6
			Bottom Side	1	11	
14 meters			South Top	4	44	3
			North Bottom	1	11	
END: Attic Ceiling into Motor Control						



LINE NUMBER 8 DATE 8-10-88/8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg 2 / 8-16-88 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 8-16-88 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum	4"	Rm 129 North by Rm 130			
0 meters	CONDUIT		West Side	5	55	3
			East Side	3	33	
2 meters			West Side	2	22	6
			East Side	0	0	
Attic 4 meters			East Side	1	11	3
			West	3	33	
6 meters			Top	0	0	0
			Bottom	5	55	
8 meters			Top	0	0	3
			Bottom	0	0	
10 meters			Top	0	0	6
			Bottom	0	0	
12 meters			Top	0	0	3
			Bottom	3	33	
14 meters			South Top	1	11	6
			Bottom	1	11	
END: Attic Ceiling into Motor Control						

LINE NUMBER 9 DATE 8-10-88/8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE #112 1113 dlm 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg. 2 / <sup>8-16-88</sup> 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg. 2 / 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum	4"	129 North by Rm 130			
0 meters	CONDUIT		West Side	2	22	0
			East "	5	55	
2 meters			West "	1	11	3
			East "	0	0	
ATTIC 4 meters			East "	1	11	9
			West "	1	11	
6 meters			Top Side	1	11	0
			Bottom "	0	0	
8 meters			Top "	2	22	0
			Bottom "	1	11	
10 meters			Top "	6	66	3
			Bottom "	0	0	
12 meters			Top "	1	11	0
			Bottom "	1	11	
14 meters			Top "	4	44	3
			Bottom "	0	0	
END: Attic Ceiling into Motor Control						

LINE NUMBER 10 DATE 8-10-88 / 8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg 2 / <sup>8-16-88</sup> 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Room 129 Floor Level	Aluminum	4"	129 North by Rm 130			
0 meters	Conduit		West Side	7	77	6
			East "	2	22	
2 meters			West "	0	0	3
			East "	0	11	
Attic 4 meters			West "	1	11	6
			East "	1	11	
6 meters			Top Side	1	11	0
			Bottom "	0	0	
8 meters			Top "	1	11	6
			Bottom "	1	11	
10 meters			Top "	1	11	6
			Bottom "	0	0	
12 meters			Top "	2	22	0
			Bottom "	2	22	
14 meters			Top "	4	44	3
			Bottom "	2	22	
END: Attic Ceiling into Motor Control						

LINE NUMBER 11 DATE 8-10-88/8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg 2 / <sup>8-16-88</sup> 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Rm 129 Floor Level	Aluminum	4"	129 North by Rm 130			
0 meters	Conduit		West Side	3	33	0
			East "	2	22	
2 meters			West "	0	0	0
			East "	0	0	
Attic 4 meters			West "	2	22	3
			East "	1	11	
6 meters			Top Side	4	44	3
			Bottom "	4	44	
8 meters			Top "	2	22	0
			Bottom "	1	11	
10 meters			Top "	1	11	0
			Bottom "	0	0	
12 meters			Top "	0	0	3
			Bottom "	2	22	
14 meters			Top "	2	22	0
			Bottom "	1	11	
END: Attic Ceiling						
into Motor Control						

LINE NUMBER 12

DATE 8-10-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR 43-4 Gas Proportional

OPERATOR D. Ford

SOURCE NUMBER AND VALUE 11/2 1113 d/m 4π

SOURCE RESPONSE AND BACKGROUND AM <sup>8-10-88</sup> 254-265-241 Bkg 2 / <sup>8-10-88</sup> 271-255 Bkg 3

SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Room 129 Floor Level	Aluminum	4"	129 North by Rm 130			
0 meters	Conduit		North Side	2	22	3
			East	3	33	
			West	3	33	
2 meters			West	3	33	6
			North	2	22	
			East	1	11	
Attic 4 meters			West	1	11	3
			East	1	11	
6 meters			Top	1	11	6
			Bottom	0	0	
8 meters			Top	2	22	3
			Bottom	1	11	
10 meters			Top	1	11	0
			Bottom	2	22	
12 meters			Top	2	22	0
			Bottom	2	22	
14 meters			Top	2	22	0
			Bottom	3	33	
END: Attic Ceiling into Motor Control						

LINE NUMBER 13 DATE 8-10-88/8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Gas Proportional OPERATOR D. Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 254-265-241 Bkg 2 / 8-16-88 271-255 Bkg 3  
 SOURCE RESPONSE AND BACKGROUND PM 288-268-280 Bkg 2 / 8-16-88 279-259 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Room 129 (3 meters from floor)	Aluminum	2 1/2"	Rm 129 North by Rm 130			
Cable			North Side	1	11	
Attic 0 meters			East "	2	22	0
			West "	2	22	
2 meters			Top "	0	0	0
			Bottom "	0	0	
			North "	0	0	
4 meters			Top "	0	0	0
			Bottom "	2	22	
6 meters			Top "	1	11	0
			Bottom "	1	11	
8 meters			Top "	2	22	0
			Bottom "	2	22	
10 meters			Top "	1	11	3
			Bottom "	1	11	
12 meters			Top "	2	22	3
			Bottom "	2	22	
END: Attic Ceiling into Motor Control						

LINE NUMBER 14 DATE 8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 GAS Proportional OPERATOR R. Brooks  
 SOURCE NUMBER AND VALUE 112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 277-266 Bkg:3  
 SOURCE RESPONSE AND BACKGROUND PM 288-295 Bkg:2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Room 130 Floor Level	Aluminum	2 1/2"	Room 130 West			
0 meters	Conduit		South Side	2	22	9
			West "	2	22	
			East "	2	22	
2 meters			South "	1	11	3
			West "	0	0	
			East "	2	22	
4 meters			South "	5	55	0
			West "	1	11	
			East "	2	22	
6 meters			West "	5	55	3
			East "	5	55	
			Top Side	2	22	
			Bottom "	12	132	
" Turns South						

LINE NUMBER #14 DATE 9-12-88  
 INSTRUMENT Ludlum 2200 PROBE GAS SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR W. Dennis Dard  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 274 - 277 Bkg. 1 dpm  
 SOURCE RESPONSE AND BACKGROUND PM 288 - 294 " 1 dpm

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Comes out of	Flum	2 1/4"	6 meters T	1	11	6
Rm 130 goes up mt.	Elec		B	2	22	
LAB ATTIC goes EAST	conduit					
over EAST WALL of			8 meters T	1	11	3
Rm 129 & goes WEST			B	3	33	
To Block <sup>WEST</sup> wall IN						
LAB ATTIC over Rm 129			10 meters <del>E</del> N	4 2	44 22	0
			12 meters T	1	11	3
			B	0	0	
			14 meters T	2	22	0
			B	4	44	
			16 meters N	1	11	9
			B	1	11	
			18 meters T	2	22	3
			B	0	0	
			19 meters T	1	11	0
			B	1	11	



LINE NUMBER #16 DATE 8-16-88  
 INSTRUMENT Ludlum 2720 SERIAL NUMBER SN-57058  
 DETECTOR Ludlum 434-Gasprop. OPERATOR R. Brooks  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Bkg 3 c/m - Hel/277 Trc 26  
 SOURCE RESPONSE AND BACKGROUND PM Bkg 2 c/m Neel 286 Trc 295

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Rm 130 floor level	Alum	3"	Rm 130 W Side			
0 meters	Conduit		East Side	1	11	3
			West Side	3	33	
2 meters			East	1	11	0
			West	3	33	
4 meters			West	2	22	0
			East	2	22	
6 meters			Top	4	44	0
			Bottom	5	55	

LINE NUMBER #16 DATE 9-12-88  
 INSTRUMENT Ludlum 2220 PROBE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 274 - 279 Bkg. 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 288 - 294 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Comes out of Rm 130 and goes into Attic	Alum	3"	8 meters	T	4	44	3
	Elec			B	1	11	
over Rm 129 & goes South west to & into west Block wall in Attic over Rm 129	Conduit		10 meters	T	4	44	3
				B	1	11	
			12 meters	T	2	22	3
				B	3	33	
			14 meters	T	2	22	0
				B	0	0	
			16 meters	T	4	44	0
				B	4	44	

LINE NUMBER #17 DATE 8-16-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058  
 DETECTOR Ludlum 434 Gas Prop OPERATOR R. Burns  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM BKG 3 cpm Heel 277 Top 266  
 SOURCE RESPONSE AND BACKGROUND PM BKG 2 cpm Heel 288 Top 295

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Rm 130 floor Sewer A-line 0 meters		3"	Rm 130 W Side			
			EAST	3	33	0
			west	0	0	
2 meters			North	0	0	
			East	0	0	3
			west	2	22	
4 meters			North	0	0	
			East	1	11	0
			west	1	11	
6 meters			North	5	55	
			TOP	5	55	3
			North	0	0	
			Bottom	2	22	

LINE NUMBER #17 DATE 9-12-88  
 INSTRUMENT Ludlum 2200 PROBE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Bond  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 274-277 Bkg. 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 288 294 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes OUT OF Rm 130 AND goes INTO Attic over Rm 129;	Alum	3"	8 meters T	1	11	3
	Elec		N	3	33	
* goes Southwest To & INTO west Black wall <del>over</del> IN Attic over Rm 129	Conduit		10 meters T	1	11	3
			B	3	33	
			12 meters T	1	11	3
			B	3	33	
			14 meters N	2	22	3
			S	4	44	
			16 meters T	3	33	0
			B	2	22	

LINE NUMBER 18 DATE 8-18-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064-50058  
 DETECTOR 43-4 GAS PROPORTIONAL OPERATOR K. Kegin  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 50058: 276-256 Bkg 2 / 50064: 275-277 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 50058: 288-276 Bkg 1 / 50064: 288-260 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Room 142 East Wall	Copper	5"	0 meters Top	2	22	0
			Bottom	0	0	
			2 meters Top	4	44	0
			Bottom	13	143	
			4 meters Top	3	33	3
			Bottom	1	11	
			6 meters Top	1	11	0
			Bottom	0	0	
			8 meters Top	5	55	0
			Bottom	3	33	
Room 140 ATTIC			10 meters Top	0	0	0
			Bottom	0	0	
			12 meters Top	1	11	3
			Bottom	3	33	
Room 132 Attic			14 meters Top	3	33	0
			Bottom	1	11	
			16 meters Top	4	44	3
			Bottom	4	44	
			18 meters Top	2	22	0
			Bottom	7	77	
Room 131 Attic			20 meters Top	0	0	6
			Bottom	2	22	
			22 meters Top	0	0	6
			Bottom	0	0	
Room 130 Attic			24 meters Top	3	33	3
			Bottom	4	44	
			26 meters Top	0	0	0
			Bottom	4	44	
Line Ends Above Room 130 North						

LINE NUMBER 19 DATE 8-18-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064 - 50058

DETECTOR 43-4 Gas Proportional OPERATOR Mervin Kegan

SOURCE NUMBER AND VALUE # 112 1113 d/m 4π

SOURCE RESPONSE AND BACKGROUND AM 50058 276-256 Bkg 2 / 50064 275-277 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM 50058 288-276 Bkg 1 / 50064 288-260 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
East wall 142	Black P.	1 1/4"	0 Meter T	1	11	
			B	1	11	
			1 meters T	0	0	0
			B	4	44	
			3 meters T	2	22	3
			B	0	0	
			5 meters T	3	33	3
			B	2	22	
			7 meters T	5	55	0
			B	3	33	
Above Rm 140			9 meters T	0	0	3
			B	5	55	
			11 meters T	0	0	3
			B	5	55	
			13 meters T	1	11	3
			B	4	44	
Above Rm 132			15 meters T	4	44	3
			B	1	11	
			17 meters T	3	33	0
			B	0	0	
			19 meters T	0	0	0
			B	13	143	
Above Rm 131			21 meters T	8	88	3
			B	0	0	
			23 meters T	2	22	0
			B	1	11	
Above Rm 130			25 meters T	1	11	3
			B	1	11	

LINE NUMBER 20 DATE 8-18-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064 - 50058  
 DETECTOR Gas Proportional 43-4 OPERATOR Kewin Kegan  
 SOURCE NUMBER AND VALUE # 117 241 - 305 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM 50058 276-252 Bkg 2 / 50064 275-277 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 50058 288-276 Bkg 1 / 50064 288-260 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable			
				cpm	dpm/100cm <sup>2</sup>				
East Wall 142	Black	1 1/4"	0 Meters T	10	110	0			
			B	1	11				
			2 Meters T	3	33	3			
			B	0	0				
			4 Meters T	4	44	9			
			B	1	11				
Above Rm 140			6 Meter T	46	506	0			
			B	18	198				
			8 Meter T	6	66	0			
			B	5	55				
			10 Meter T	3	33	0			
			B	1	11				
Above Rm 132			12 meters T	0	0	0			
			B	1	11				
			14 meters T	9	99	3			
			B	1	11				
			16 meters T	2	22	3			
			B	1	11				
Above Rm 131			18 meters T	2	22	6			
			B	6	66				
			20 meters T	4	44	0			
			B	4	44				
			22 meter T	0	0	0			
			B	2	22				
above Rm 130			24 meter T	1	11	6			
			B	1	11				
			26 meter T	2	22	0			
			B	2	22				
			End of Lines						

LINE NUMBER 21 DATE 8-18-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064-50058  
 DETECTOR 43-4 GAS PROPORTIONAL OPERATOR K. Kegin  
 SOURCE NUMBER AND VALUE #112 1113 d/m 4π  
 SOURCE RESPONSE AND BACKGROUND AM <sup>50064</sup> 275-277 Bkg 2 / 276-256 Pkg 2 <sup>50058</sup>  
 SOURCE RESPONSE AND BACKGROUND PM N/A

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>			
Room 141 East Wall	Copper	1/2"	0 meters Top	2	22	3			
			Bottom	0	0				
			2 meters Top	9	99	3			
			Bottom	5	55				
			4 meters Top	4	44	3			
			Bottom	1	11				
			6 meters Top	5	55	0			
			Bottom	4	44				
			8 meters Top	6	66	3			
			Bottom	2	22				
			10 meters Top	3	33	3			
			Bottom	2	22				
			END: Rm 142						
			South Wall						





LINE NUMBER 23

DATE 8-18-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064/50058

DETECTOR Gas Proportional 43-4

OPERATOR Kevin Kevin Shirley, Ueaden

SOURCE NUMBER AND VALUE #112 241-305 1113 d/m 4π

SOURCE RESPONSE AND BACKGROUND AM 50058 276-256 Bkg 2 - 50064 275-277 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM C/m 288-276 50058 C/m 288-268 50064 Bkg 1 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 140	Copper	3/4"	0 meter T	3	33	3
			B	1	11	
			2 meter T	0	0	3
			B	7	77	
Above Rm 133			4 meter T	3	33	0
			B	3	33	
			6 meter T	4	44	6
			B	2	22	
Above Rm 136			8 meter T	3	33	6
			B	4	44	
			10 meter T	3	33	0
			B	2	22	
End on west wall 136			12 meter T	2	22	0
			B	5	55	

LINE NUMBER 24

DATE 8-18-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064 - 50058

DETECTOR Gas Proportional 43-4

OPERATOR Kevin Kegan - Shirley Vandy

SOURCE NUMBER AND VALUE #112 - 244 305 1113 d/m 4π

SOURCE RESPONSE AND BACKGROUND AM 9m 276-256 50058 Bkg 2 / 275-277 50064 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM 9m 288-276 50058 50064 288-260  
B61 B61

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 140	Copper	1/2"	0 meters T	3	33	0
			B	4	44	
			2 meters T	6	66	6
			B	4	44	
			4 meters T	4	44	0
			B	3	33	
			6 meters T	1	11	6
			B	1	11	
Ends Rm 140						

LINE NUMBER 25 DATE 8-18-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064-50058  
 DETECTOR Gas Prod. 43-4 OPERATOR Kevin Kegin Shirley Dancy  
 SOURCE NUMBER AND VALUE #112 241-305 1113 d/m 4Ti  
 SOURCE RESPONSE AND BACKGROUND AM 9m 276-256 50058-50064 275-277 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 9m 288-276 50058-50064 288-260  
 Bkg-1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
above Rm 140	Copper	3/4"	0 meters	T	1	11	3
				B	4	44	
			2 meters	T	9	99	3
				B	6	66	
End above Rm 140							



*Copper lines lab-attic*

LINE NUMBER 27

DATE 8-24-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50058

DETECTOR Gas bottle 43-4

OPERATOR C. Johnson

SOURCE NUMBER AND VALUE # 1125

1113 Rm 4 TT

SOURCE RESPONSE AND BACKGROUND AM  $\mu$ m 275-288

BKG 2

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
above Rm 136 West wall	Copper	1/2"	0 meters	T	3	33	3
				B	0	0	
			1 meters	T	3	33	3
				B	0	0	
			3 meters	T	5	55	0
				B	2	22	
above Rm 140			5 meters	T	0	0	0
				B	7	77	
			7 meters	T	3	33	0
				B	0	0	
			9 meters	T	7	77	0
				B	3	33	
			11 meters	T	3	33	3
				B	0	0	
			13 meters	T	3	33	6
				B	1	11	
133			15 meters	T	3	33	0
				B	0	0	
above Rm 140			17 meters	T	2	22	6
				B	0	0	
End of line 27 Rm 140			19 meters	T	4	44	3
				B	2	22	

LINE NUMBER 28

DATE 8-24-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR Gas Bottle -43-4

OPERATOR Shirley Veasley

SOURCE NUMBER AND VALUE #112

1113 dpm 4/11

SOURCE RESPONSE AND BACKGROUND AM  $261 - 294$

BKG 0

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above R136 westwall	Copper	3/4"	0 meters	T	20	22	0
				B	0	0	
			1 meters	T	1	11	0
				B	1	11	
Above Rm 140			4 meters	T	2	22	0
				B	1	11	
			6 meters	T	5	55	0
				B	0	0	
33			8 meters	T	5	55	0
				B	0	0	
Above Rm 140			10 meters	T	1	11	0
				B	2	22	
End of line 28 Rm 140			12 meters	T	6	66	0
				B	0	0	
F			14 meters	T	1		
				B	4		

LINE NUMBER 29 DATE 8-24-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #50064 #1 50058  
 DETECTOR Gas bottle 43-4 OPERATOR S. Versley - C. Johnson  
 SOURCE NUMBER AND VALUE #112 - 1113 dpm 4 TI  
 SOURCE RESPONSE AND BACKGROUND AM 261 - 294 BK40  
 SOURCE RESPONSE AND BACKGROUND PM #1 cm 309 - 260 Bkg #1 0  
 #2 50064 264 - 300 Bkg #2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
above Rm 140	copper	1/2	0 meters	T	7	77	0
				B	0	0	
			1 meter	T	4	44	3
				B	0	0	
			3 meters	T	4	44	0
				B	0	0	
			5 meters	T	4	44	0
				B	0	0	
			7 meters	T	1	11	0
				B	0	0	
			9 meters	T	1	11	0
				B	2	22	
			11 meters	T	3	33	3
				B	0	0	
			13 meters	T	8	88	3
				B	0	0	
above Rm 142			15 meters	T	2	22	3
				B	1	11	
			17 meters	T	4	44	0
				B	2	22	
End of 29 above Rm 141			19 meters	T	5	55	6
				B	3	33	
			20 meters	T	1	11	0
				B	4	44	



LINE NUMBER 30 DATE 8-24-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058

DETECTOR Gas bottle 43-4 OPERATOR S. Wesley-C Johnson

SOURCE NUMBER AND VALUE #112 - 1113 apm 4 TI

SOURCE RESPONSE AND BACKGROUND AM c/m 275 - 288 BKG 2

SOURCE RESPONSE AND BACKGROUND PM BKG 0  
50058

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
above	Cooper	5"	0 meters T	6	66	3
			B	1	11	
			2 meters T	2	22	6
			B	0	0	
			4 meters T	0	0	0
			B	3	33	
			6 meters T	2	22	0
			B	1	11	
			8 meters T	5	55	0
			B	0	0	
above Rm 142			10 meters T	4	44	0
			B	0	0	
End of Line 30 above Rm 141			12 meters T	4	44	9
			B	0	0	

LINE NUMBER 31 DATE 8-24-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 <sup>#2</sup> 50064  
 DETECTOR #112-Gas bottle 43-4 OPERATOR S. Veasley - C. JOHNSON  
 SOURCE NUMBER AND VALUE #112-1113 dpm 4 11  
 SOURCE RESPONSE AND BACKGROUND AM 2  
 SOURCE RESPONSE AND BACKGROUND PM #2 50064 264-300 <sup>#1</sup> 309-260  
BKB 2 BKB 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION		Direct		Smearable dpm/100cm <sup>2</sup>
					cpm	dpm/100cm <sup>2</sup>	
Above Rm 133	Copper	1/2"	0 meters	T	2	22	9
				B	1	11	
Above Rm 139			2 meters	T	4	44	0
				B	3	33	
Above Rm 140			4 meters	T	0	0	3
				B	2	22	
Above Rm 140			6 meters	T	1	11	0
				B	0	0	
Above Rm 142			8 meters	T	2	22	6
				B	0	0	
Above Rm 142			10 meters	T	3	33	0
				B	3	33	

LINE NUMBER 32 DATE 8-24-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #150058 #250064  
 DETECTOR Gas bottle 43-4 OPERATOR C. Johnson - S. Veasley  
 SOURCE NUMBER AND VALUE #112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM #1309-260 #2 50064 - 264-300  
BKB 0 BKB 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above Rm 133	Copper	1/2"	0 Meters	T	3	33	3
				B	4	44	
			1 Meters	T	1	11	3
				B	2	22	
Above Rm 139			3 meters	T	0	0	0
				B	2	22	
			5 meters	T	3	33	3
				B	3	33	
			7 meters	T	1	11	3
				B	3	33	
Above Rm 140			9 meters	T	5	55	0
				B	2	22	
			11 meters	T	2	22	3
				B	1	11	
			13 meters	T	4	44	3
				B	1	11	
Above Rm 142			15 meters	T	1	11	3
				B	1	11	
Above Rm 142			17 meters	T	1	11	3
				B	5	55	

LINE NUMBER 33 DATE 8-24-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #1 50058 #2 50064  
 DETECTOR Gas bottle OPERATOR C. Johnson - S. Veasley  
 SOURCE NUMBER AND VALUE #112-1113 dpm 4 ↑  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM #1-309-260 #2 50064-264-300  
BKB 0 BKB 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above 132	copper	1/2"	0 meters	T	0	0	0
				B	7	77	
			1 meters	T	3	33	0
				B	3	33	
			3 meters	T	1	11	0
				B	1	11	
			5 meters	T	6	66	0
				B	2	22	
			7 meters	T	0	0	3
				B	1	11	
			9 meters	T	4	44	6
				B	4	44	
11 meters	T	0	0	3			
	B	0	0				
Above Rm 131			13 meters	T	0	0	3
				B	8	33	
			15 meters	T	2	22	0
				B	3	33	
17 meters	T	1	11	3			
	B	0	0				
19 meters	T	1	11	3			
	B	2	22				
End of line 33			21 meters	T	0	0	0
				B	0	0	

LINE NUMBER 34 DATE 8-24-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #50058 #2 50064  
 DETECTOR Gas bottle 43-4 OPERATOR W.C. Powers  
 SOURCE NUMBER AND VALUE #112-1113 dpm 4TT  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM #1 309-260 #2 50064-264-300  
RKB 0 BKG 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 132	copper	1/2"	0 meters T	0	0	3
			B	2	22	
			2 meters T	2	22	0
			B	2	22	
			4 meters T	3	33	3
			B	1	11	
Above Rm 131			6 meters T	5	55	6
			B	2	22	
			8 meters T	0	0	3
			B	1	11	
End of line 34			10 meters T	0	0	3
			B	1	11	
			12 meters T	0	0	3
			B	0	0	

LINE NUMBER 35 DATE 9-24-88  
 INSTRUMENT Lud Lum 2220 SERIAL NUMBER 50068-50064  
 DETECTOR 43-4 Gas Prop. Propane OPERATOR Kevin Martin  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND 50058-305-306  
 SOURCE RESPONSE AND BACKGROUND PM 50064-259-277

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
about RM 133	copper	1/2	0 Meters T	3	33	3
			" " B	0	0	
			2 Meters T	6	66	6
			" " B	2	22	
			4 Meters T	8	88	0
			" " B	3	33	
Above 129			6 Meters T	4	44	0
			" " B	0	0	
			8 meters T	2	22	3
			" " B	2	22	
			10 meters T	1	11	0
			" " B	0	0	
END OF LINE North wall 129			12 meters T	1	11	0
			" " B	1	11	

LINE NUMBER 36 DATE 8-24-88  
 INSTRUMENT Judlum 2220 SERIAL NUMBER 50068 - 50084  
 DETECTOR 43-4 OPERATOR K. Kegin  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND PM BG-1 259-277  
 SOURCE RESPONSE AND BACKGROUND PM BG-1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Rm 133	Cooper	1/2	1 meters T	8	88	0	
			B	1	11		
			3 meters T	2	22	3	
			B	1	11		
			5 meters T	1	11	0	
			B	0	0		
			7 meters T	2	22	3	
			B	1	11		
			9 meter T	3	33	3	
			B	0	0		
			11 meters T	2	22	0	
			B	0	0		
			End of Line	13 meters T	0	0	0
			North Walk 129	B	2	22	







LINE NUMBER 39 DATE 8-24-85  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #50058 + 50060  
 DETECTOR OPERATOR Kevin Kym Shultz/Kenly  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM #1 0276-272 BKC 0 #2 251-248 BKC 1  
 SOURCE RESPONSE AND BACKGROUND PM 136 - 1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 138	Conduits	3/4	0 Meters T	1	11	0
			B	0	0	
			2 meters T	2	22	3
			B	7	77	
			4 meters T	2	22	6
			B	1	11	
Above Rm 139			6 meter T	9	99	0
			B	0	0	
Above Rm 140			8 meter T	7	77	6
			B	2	4	
End of 33 Above Rm 140			10 meters T	17	187	3
			B	3	9	

LINE NUMBER 40 DATE 8-24-88 + 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 & 50064  
 DETECTOR Gas Bottle 43-4 OPERATOR Kevin Higin SV - (C)  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM <sup>8-25-88</sup> #1 290-285 Bkg1 #2 302-264 Bkg2  
 SOURCE RESPONSE AND BACKGROUND PM B6 - 1 - 221 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 138	Conductit	3/4	0 Meters T	1	11	6
			B	1	11	
			2 meters T	4	44	3
			B	4	44	
			4 meters T	0	0	3
			B	3	33	
			6 Meters T	4	44	0
			B	2	22	
Above Rm 139			8 Meters T	9	99	0
			B	0	0	
			10 Meters T	2	22	3
			B	1	11	
Above Rm 143			12 meters T	4	44	0
			B	4	44	
			14 meters T	3	33	3
			B	0	0	
End of line 40			16 meters T	8	88	3
			B	2	22	

LINE NUMBER 41 DATE 8-24-88 + 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR K. Kegin  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM BG-1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 138	Conduit	3/4	0 meter T	4	44	0
			B	1	11	
			2 meter T	2	22	0
			B	2	22	
			4 meter T	3	33	3
			B	2	22	
Above Rm 139			6 meter T	4	44	0
			B	0	0	
			8 meter T	3	33	0
			B	1	11	
Along Rm 133			10 meter E	1	11	3
			W	2	22	
			12 meter T	1	11	3
End less than a 2 meter			B	0	0	
			T	4	44	3
			B	0	0	

8-25-88 1600 hrs 50058 Source - 278 - 251

LINE NUMBER 42 DATE 8-24-88 or 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER #50058 #50068

DETECTOR 43-4 OPERATOR Kevin Kegan Shirley Wesley Carolyn Johnson

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM 126-1- 281-278 - 66-2 50058

8-25-88 1600 hrs 50058 66-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 138	Conduit	3/4	0 meters	T 1	11	3
				B 2	22	
			2 meters	T 3	33	0
				B 2	22	
			4 meters	T 1	11	0
				B 2	22	
above Rm 139			6 meters	T 2	22	0
				B 4	44	
			8 meters	T 0	0	0
				B 2	22	
Above Rm 140			10 meters	T 5	55	3
				B 1	11	
			12 meters	T 6	66	3
B 3	33					
Above Rm 143			14 meters	T 2	22	0
				B 3	33	
Above Rm 142			16 meters	T 6	66	9
				B 1	11	
			18 meters	T 3	33	0
				B 5	55	
			20 Meter	T 0	0	3
				B 0	0	
			22 meter	T 8	88	6
				B 2	22	
			24 meter	T 6	66	9
				B 1	11	



LINE NUMBER 44 DATE 8-24-88 - 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 & 50069  
 DETECTOR 43-4 OPERATOR Kevin Kegan SD-CJ  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM BG-1 - 281-278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>			
				cpm	dpm/100cm <sup>2</sup>				
West wall of Rm 138	conduit	3/4	0' Meter T	4	44	3			
			B	3	33				
			2 meters T	4	44	0			
			B	2	22				
			4 meter T	6	66	9			
			B	5	55				
			6 Meter T	2	22	3			
			B	3	33				
			End of Line 4 <sup>th</sup> in 138			8 Meter T	3	22	0
						B	6	66	

LINE NUMBER 45 DATE 8-24-88 - 8-28-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 - 50064  
 DETECTOR Gas Bottle 43-4 OPERATOR Kevin Kegan SV-CJ-  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM BG-1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
West wall of Rm 138	conduit	1/2	0 meters T	1	11	3		
			B	0	0			
			2 meters T	2	22	0		
			B	1	11			
			4 meters T	1	11	3		
			B	4	44			
			<del>6 meters T</del>					
			B					
			End of line 45 in Rm 138		6 meters T	5	55	3
					B	7	77	



LINE NUMBER 46 DATE 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 50064  
 DETECTOR 43-4 OPERATOR W. A. Rogers  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 50064 278-251 Bkg-2  
 SOURCE RESPONSE AND BACKGROUND PM 50058 287-289 Bkg-2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Room-142	Conduit	3/4"	0 Meters T	6	66	9
			B	1	11	
			2 Meters T	8	88	6
			B	2	22	
			4 Meters T	0	0	3
			B	0	0	
			6 Meters T	3	33	0
			B	5	55	
			8 Meters T	6	66	9
			B	1	11	
			10 Meters T	2	22	0
			B	3	33	
			12 Meters T	6	66	3
			B	3	33	
			14 Meters T	5	55	3
			B	1	11	
			16 Meters T	0	0	0
			B	2	22	
			18 Meters T	2	22	0
			B	4	44	
			20 Meters T	1	11	0
			B	2	22	
			22 Meters T	3	33	0
			B	2	22	
			24 Meters T	1	11	3
			B	2	22	



8-25-88 1600 hr 50064 Source Reading 278-251 B6-2

LINE NUMBER 48 DATE 8-24-88 & 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058

DETECTOR OPERATOR Kevin Kegan Carolyn Johnson

SOURCE NUMBER AND VALUE # 112 - 1113 dpm Shibley Veasley

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM B6-1 - 281-278

8-25-88 1600 hr 50058 B6-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
west wall of Rm 136	Conduit	1/2	0 meters T	1	11	0
			B	0	0	
Rm 138 west wall			2 meters NB	0	0	0
			S	3	33	
			4 meters T	2	22	6
			B	4	44	
			6 meters T	0	0	3
			B	2	22	
Above Rm 139			8 meters T	2	22	0
			B	1	11	
			10 meters T	2	22	0
			B	5	55	
			12 meters T	1	11	6
			B	2	22	
			14 meters T	1	11	12
			B	4	44	
Above Rm 143			16 meters T	4	44	0
			B	0	0	
			18 meters T	4	44	6
			B	7	77	
			20 meters T	6	66	3
			B	3	33	
Above Rm 142			22 meters T	1	11	0
			<del>22 meters NB</del>	1	11	
			T	0	0	6
			24 meters B	3	33	

LINE NUMBER 49 DATE 8-24-88 & 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #50058 #250064  
 DETECTOR 43-4 OPERATOR Kewei Kwan Carolyn Johnson  
 SOURCE NUMBER AND VALUE #112 - 1113 dpm Shirley Wensley  
 SOURCE RESPONSE AND BACKGROUND AM 8-25-88 #1 2.2 BGG  
 SOURCE RESPONSE AND BACKGROUND PM BG - 1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 136	Conduit	3/4	0 meters T	3	33	6
			B	1	11	
Rm 138 west wall			2 meters T	2	22	6
			B	1	11	
			4 meters T	3	33	0
			B	6	66	
			6 meters T	1	11	0
			B	1	11	
			8 meters T	1	11	3
			B	3	33	
Above Rm 139			10 meters T	3	33	0
			B	N/A	—	
			12 meters T	5	55	0
			B	4	44	
			14 meters T	6	66	6
Above Rm 140			B	2	22	
			16 meters T	1	11	0
Above Rm 143			B	2	22	
			18 meters T	7	77	0
			B	1	11	
Above Rm 142			20 meters T	8	88	0
			B	2	22	
Above Rm 142 <small>End of 49</small>			22 meters T	N/A	—	3
			B	3	33	

8-25-88 1600 hr 50064 Lower Reading 278-251

LINE NUMBER 50 DATE 8-24-88 + 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER #1 50058 #2 50064

DETECTOR 43-4 OPERATOR Kevin Kevin Carolyn Johnson Shirley Veasley

SOURCE NUMBER AND VALUE #112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM BG-1- 281-278

8-25-88 1600 hr 50058 BG-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 136	Conduit	3/4	0 meters T	2	22	0
			B	0	0	
West wall of Rm 138			2 meters T	2	22	0
			B	3	33	
			4 meters T	2	22	0
			B	0	0	
Above Rm 139			6 meters T	2	22	3
			B	4	44	
			8 meters T	3	33	6
			B	0	0	
			10 meters T	3	33	0
			B	N/A	—	
			12 meters T	4	44	0
			B	0	0	
Above Rm 140			14 meters T	2	22	3
Above Rm 143			B	4	44	
			16 meters T	1	11	0
Above Rm 142			B	2	22	
			18 meters T	2	22	0
			B	2	22	
			20 meters T	T	11	0
			B	2	22	
			22 meters T	1	11	0
			B	2	22	

8-25-88 1600 hrs 50064 Source Reading 278 - 251

LINE NUMBER 51 DATE 8-24-88 - 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER #1 50058 - #2 50064

DETECTOR 43-4 OPERATOR Kevin Kigen <sup>Shirley Neal</sup> Carolyn Johnson

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM B6-1-281-278

8-25-88 1600 hrs 50058 B6-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
west wall of Rm 136	Conduit	3/4	0 meters T	1	11	0
			B	N/A	-	
Rm 138 west wall			2 meters T	3	33	0
			B	3	33	
			4 meters T	2	22	0
			B	2	22	
Above Rm 139			6 meters T	1	11	0
			B	2	22	
			8 meters T	3	33	0
			B	5	55	
			10 meters <del>meter</del> T	2	22	0
			B	N/A	-	
			12 meters T	8	88	0
			B	0	0	
Above Rm 140			14 meters T	3	33	0
Above Rm 143			B	1	11	
			16 meters B	1	11	0
			T	1	11	
			18 meters B	1	11	0
			T	1	11	
			Above Rm 142			20 meters T
			B	5	55	
			22 meters T	6	66	9
			B	1	11	

LINE NUMBER 52 DATE 8-24-88 + 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER #50058 #2 50064  
 DETECTOR 43-4 OPERATOR Kevin Kegin + Shirley Kearly Carolyn Johnson  
 SOURCE NUMBER AND VALUE #112 - 1113 dPM  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM B6 -1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 136	Conducta	3/4	0 meters T	4	44	0
			B	N/A	—	
Rm 138 West wall			2 meters T	0	0	0
			B	0	0	
			4 meters T	0	0	3
			B	0	0	
Above Rm 139			6 meters T	2	22	0
			B	7	77	
			8 meters T	7	77	3
			B	2	22	
Above Rm 140			10 meters T	2	22	0
			B	3	33	
			12 meters T	2	22	0
			B	2	22	
Above Rm 143			14 meters T	3	33	3
			B	2	22	
			16 meters T	8	88	3
			B	4	44	
End of line 52			18 meters T	2	22	0
			B	2	22	

LINE NUMBER 53 DATE 8-24-88 - 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR Kevin Kegan - SV - CD  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM B6 -1- 281 -278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of Rm 136	ConductA	3/4	0 Meters T	2	22	3
			B	1	11	
Rm 138 West wall			2 meter T	3	33	0
			B	2	22	
			4 meters T	6	66	3
			B	6	66	
Above RM 139			6 meters T	0	0	3
			B	5	55	
			8 Meters T	4	44	0
End of 53 Above Rm 140			B	5	55	
			10 meters T	3	33	0
			B	2	22	



LINE NUMBER 54 DATE 8-24-88 - 8-25-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058 - 50064  
 DETECTOR 43-4 OPERATOR Kevin Ryan SV-CJ  
 SOURCE NUMBER AND VALUE # 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM BG - 1 - 281 - 278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 136 west wall	Conductit	3/4	0 Meters T	0	0	0
			B	2	22	
Rm 138 west wall			2 meters T	4	44	0
			B	3	33	
			4 meters T	8	88	0
			B	0	0	
Above Rm 139			6 Meters T	5	55	3
			B	4	44	
Above Rm 139			8 Meters T	3	33	3
			B	1	11	
End of line 54 Above Rm 139			10 Meters T	7	77	0
			B	2	22	









LAB ATTIC PIPE SURVEY

8-26-88 0800 50064 BG-2 272-258  
 8-25-88 1600 hrs 50064 BG-2- 278-251

LINE NUMBER 59 DATE 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064 - 50058

DETECTOR 43-4 OPERATOR Kevin Hagan

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM  
 8-26-88 0800 50058 BG-2 286-255  
 8-25-88 1600 hrs 50058 BG-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 138	Conduit	3/4	0 meters T	4	44	3
			B	2	22	
			2 meters T	0	0	3
			B	1	11	
			4 meters T	1	11	3
			B	0	0	
			6 meters T	6	66	0
			B	2	22	
			8 meters T	4	44	0
			B	0	0	
			10 meters T	1	11	0
			B	1	11	
			12 METERS T	2	22	0
			B	0	0	
ENDS ABOVE Rm 129			14 METERS T	1	11	0
			B	0	0	

LAB ATTIC PIPE SURVEY

8-26-88 0500 50064 BG-2 272-258  
 8-25-88 1600 hrs 50064 BG-2 278-251

LINE NUMBER 60 DATE 8-28-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064 - 50058

DETECTOR OPERATOR Kevin Hagan

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-26-88 0500 50058 BG-2 280-255  
 8-25-88 1600 hrs 50058 BG-2 289-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE RM 138	Conduit	3/4	0 meters T	1	11	3
			B	1	11	
			2 meters T	0	0	6
			B	2	22	
			4 meters T	0	0	0
			B	1	11	
			T	2	22	0
			6 meters B	0	0	
			T	3	33	6
			8 meters B	2	22	
			10 meters T	1	11	0
			B	1	11	
			12 METERS T	0	0	3
			B	0	0	
14 METERS T	0	0	0			
B	0	0				
ENDS ABOVE RM 129						

LINE NUMBER 61

DATE 8-25-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50058 - 50064

DETECTOR 43-4

OPERATOR K. Kegin

SOURCE NUMBER AND VALUE # 112 - 1113 dpm 4π

SOURCE RESPONSE AND BACKGROUND AM 50058 - 278 - 289 - 2 Bkg.

SOURCE RESPONSE AND BACKGROUND PM 50064 - 282 - 288 - 2 Bkg.

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Above Rm 138	conduit	3/4	0 meters T	0	0	3		
			B	0	0			
			2 meters T	3	33	0		
			B	1	11			
			4 meters T	0	0	3		
			B	0	0			
			6 meters T	2	22	6		
			B	4	44			
			8 meters T	2	22	3		
			B	0	0			



LAB ATTIC PIPE SURVEY

8-26-88 0500 hrs 50064 BG-2 272-258  
 8-25-88 1600 hrs 50064 BG-2- 278-251

LINE NUMBER 62 DATE 8-25-88

INSTRUMENT Ludlum 7220 SERIAL NUMBER 50064-50058

DETECTOR 43-4 OPERATOR Kevin Kegan

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-26-88 0500 hrs 50058 BG-2 280-255  
 8-25-88 1600 hrs 50058 BG-2- 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
above west wall of 136	Conduit	1"	0 meters T	0	0	9
			B	0	0	
			2 meters T	0	0	6
			B	2	22	
			4 meters T	0	0	6
			B	1	11	
			6 meters T	1	11	3
			B	2	22	
			8 meters T	0	0	0
			B	0	0	
			10 meters T	3	33	0
			B	4	44	
			12 METERS T	6	66	0
			B	0	0	
			14 METERS T	3	33	6
			B	0	0	
ENDS ABOVE RM 129			16 METERS T	1	11	3
NORTH WALL			B	2	22	

8-25-88 1600 hr 50064 BG-2-278-251

LINE NUMBER 62

DATE 8-25-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064-50058

DETECTOR 43-4

OPERATOR Kevin Kegan

SOURCE NUMBER AND VALUE # 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-25-88 1600 hr 50058 BG-2-287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall above 134	<del>3/4</del> Conduit	3/4	0 Meter T	0	0	0
			B	1	11	
			2 Meter T	1	11	6
			B	4	44	
			4 Meter T	0	0	0
			B	0	0	
			6 Meter T	1	11	0
			B	1	11	
End			8 Meter T	2	22	6
			B	0	0	

LAB ATTIC PIPE SURVEY  
~~8-25-88~~ 1600 HRS 50064 BG-2 272-258 PAGE 68 OF 299  
 8-25-88 1600 HRS 50064 BG-2 278-251

LINE NUMBER 64 DATE 8-25-88

INSTRUMENT LUDLUM 2220 SERIAL NUMBER 50064-50058

DETECTOR 43-4 OPERATOR W. A. Rogers

SOURCE NUMBER AND VALUE #112 - 1113 dPM

SOURCE RESPONSE AND BACKGROUND AM

SOURCE/RESPONSE AND BACKGROUND PM 58 BG-2 280-255  
~~8-25-88~~ 1600 HRS 50058 BG-2 287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE RM 136	CONDUIT	3/4	0 METERS T	0	0	6
			B	1	11	
			2 METERS T	0	0	6
			B	0	0	
			4 METERS T	2	22	0
			B	4	44	
			6 meters T	2	22	0
			B	1	11	
			8 METERS T	6	66	3
			B	0	0	
			10 METERS T	3	33	3
			B	2	22	
			12 METERS T	3	33	0
			B	0	0	
			14 METERS T	5	55	0
			B	2	22	
			16 METERS T	0	0	0
			B	1	11	
ENDS ABOVE RM 129						
NORTH WALL						



LAB ATTIC PIPE SURVEY

50064

BG-2

8-25-88 1600 hr

50064

BG-2

272-258

278-251

LINE NUMBER

66

DATE

8-25-88

INSTRUMENT

Ludlum 2220

SERIAL NUMBER

50058-50064

DETECTOR

43-4

OPERATOR

Kew Rign

SOURCE NUMBER AND VALUE

112

- 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-25-88

1600 hr

50058

BG-2

280-255

8-25-88

1600 hr

50058

BG-2

287-289

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall of 138	Conduit	3/4	0 meter	T	0	0
				B	2	22
			2 meter	T	2	22
				B	5	55
			4 meters	T	1	11
				B	0	0
			6 meter	T	4	44
				B	0	0
			8 meter	T	1	11
				B	0	0
			10 meter	T	2	22
				B	4	44
<del>End above 129</del>			12 meter	T	0	0
				B	0	0
			14 METERS	T	0	0
				B	0	0
			16 METER	T	1	11
				B	1	11
End above 129 WEST WALL			18 METERS	W	0	0
				E	3	33



LAB ATTIC PIPE SURVEY

~~8-26-88~~ 5800 hrs 50064 BG-2 272-238  
 8-28-88 1600 m. 50064 BG-2- 282-288

LINE NUMBER 68 DATE 8-25-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50068-50058

DETECTOR 43-4 OPERATOR Kevin Kegan

SOURCE NUMBER AND VALUE #112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM  
~~8-26-88~~ 5800 hrs 50058 BG-2 280-255  
 8-28-88 1600 m. 50058 BG-2- 285-272

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
about Rm 136	Conduit	3/4	0 meters T	0	0	12		
			B	1	11			
			2 meters T	2	22	0		
			B	4	44			
			4 METERS T	1	11	0		
			B	0	0			
			6 METERS T	0	0	0		
			B	1	11			
			8 METERS T	0	0	3		
			B	2	22			

~~ENDS~~  
 ENDS ABOVE RM129

8-26-88 0800 HRS 50064 BG-2 272-258

LINE NUMBER 69 DATE

INSTRUMENT LUDLUM 2220 SERIAL NUMBER 50064-50058

DETECTOR 43-4 OPERATOR E. POWELL

SOURCE NUMBER AND VALUE #112 -1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-26-88 0800 HRS 50058 BG-2 280-255

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
above Rm 129	Conduit	1/2	0 METER T	1	11	3
			B	0	0	
			2 METERS T	5	55	0
			B	1	11	
			4 METERS T	2	22	6
			B	0	0	
			6 METERS T	0	0	3
			B	1	11	
			8 METER T	0	0	3
			B	2	22	
ENDS ABOVE RM 129						
NORTH WALL						



LAB ATTIC PIPE SURVEY

3-26-88 12:30 50064 BG-1 - 255,255 PAGE 74 OF 299  
 8-29-88 0815 50064 Br-1 - 260-

LINE NUMBER 70 DATE 8-26-88  
 INSTRUMENT LUDLUM 2220 SERIAL NUMBER 50064-50058  
 DETECTOR 43-4 OPERATOR I POWELL D. FORD  
 SOURCE NUMBER AND VALUE #112 -1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM  
 8-26-88 12:30 50058 BG-1 272-290  
 8-29-88 0815 50058 Br-1 261-

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Above Rm 143	Elec Conduit	1/2"	0 METERS	T 35	385	0
				B 27	297	
			2 METERS	T 4	44	6
				B 5	55	
			4 METERS	T 20	220	6
				B 43	473	
			6 METERS	T 63	693	3
				B 125	1375	
			8 METERS	T 5	55	0
				B 4	44	
			10 METERS	T 8	88	3
				B 4	44	
ENDS ABOVE						
AIR LOCK Rm 137						

LAB ATTIC PIPE SURVEY 50064 BG-1 -255,255

8-26-88 12:30 50058 BG-1 260  
 8-29-88 8:15 50058 BG-1 260

LINE NUMBER 71

DATE 8-26-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER 50064-50058

DETECTOR 43-4

OPERATOR J POWELL

SOURCE NUMBER AND VALUE #112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-26-88 12:30 50058 BG-1 272-290  
 8-29-88 8:15 50058 BG-0 261

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above RM 143	Conduit	1/2	0 METERS	T	2	22	0
				B	0	0	
			2 METERS	T	2	22	0
				B	0	0	
			4 METERS	T	5	55	3
				B	4	44	
			6 METERS	T	2	22	0
				B	3	33	
			8 METERS	T	4	44	0
				B	5	55	
ENDS ABOVE							
AIRLOCK RM 137							





LAB ATTIC PIPE SURVEY

50064

BG-1

255-255

8-26-88 12:30

8-29-88 8:15

50064

BG-1

260

LINE NUMBER 74

DATE 8-29-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER 50064, 50058

DETECTOR 43-4

OPERATOR I. POWELL, D. FORD

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-26-88 12:30 BG-1 272-290 50058  
8-29-88 8:15 BG-0 50058 261

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>			
				cpm	dpm/100cm <sup>2</sup>				
Above Rm 143	Conduit	1"	0 METERS	T	0	0	0		
				B	1	11			
			2 METERS	T	4	44	3		
				B	1	11			
			4 METERS	T	3	33	0		
				B	3	33			
			6 METERS	T	2	22	0		
				B	1	11			
			8 METERS	T	4	44	0		
				B	5	55			
			ENDS ABOVE						
			AIR LOCK Rm 137						











LAB ATTIC PIPE SURVEY

~~8-29-88 8:15 50064 BG.1 260~~

LINE NUMBER

79

DATE

8-29-88

INSTRUMENT

LUDLUM 2220

SERIAL NUMBER

50058, 50064

DETECTOR

43-4

OPERATOR

I.C.P., & D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

~~8-29-88 8:15 50058 BG.-0 261-~~

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above Rm 143 W. to E.	Conduit	1"	0 METERS	T	4	44	3
				B	1	11	
			2 METERS	S	3	33	3
				B	4	44	
			4 METERS	S	4	44	0
				B	5	55	
			6 METERS	T	4	44	0
				B	1	11	
			7 METERS	T	2	22	3
				B	2	22	
ENDS ABOVE RM 143							

~~8-29-88 50064 BE-1 260-~~

LINE NUMBER 80

DATE 8-29-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER 50064, 50058

DETECTOR 43-4

OPERATOR I.L.P. & D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

~~8-29-88 50058 BG. 0 261~~

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Above Rm 143 W. to E.	Conduit	1"	0 METERS	T	5	55	9
				B	3	33	
			2 METERS	T	4	44	3
				S	3	33	
			4 METERS	T	5	55	0
				S	0	0	
			6 METERS	T	5	55	0
				B	3	33	
			8 METERS	T	9	99	6
				B	3	33	
			10 METERS	T	6	66	0
				B	3	33	
			12 METERS	T	4	44	0
				B	5	55	
			14 METERS	T	5	55	0
				B	5	55	
ENDS Above Rm 141 EAST WALL			16 METERS	T	3	33	6
				B	1	11	

8-29-88 50064 8:15 BG-1 260

LINE NUMBER 81

DATE 8-29-88

INSTRUMENT L4DLUM 2220

SERIAL NUMBER 50058, 50064

DETECTOR 43-4

OPERATOR I.L.P. + D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88 8:15 50058 BG-1 261

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE Rm 137 AIR LOCK W. to E	Conduit	3/4"	0 METERS T	3	33	0
			B	1	11	
			2 METERS T	5	55	0
			B	2	22	
			4 METERS T	6	66	0
			B	2	22	
			6 METERS T	2	22	3
			B	5	55	
			8 METERS T	5	55	0
			B	6	66	
			10 METERS T	2	22	3
			B	2	22	
			12 METERS T	3	33	3
			<del>12 METERS</del> B	3	33	
			14 METERS T	4	44	3
			B	2	22	
			16 METERS S	2	22	3
			N	8	88	
17 METERS S	2	22	0			
N	4	44				
LINE END RM 140 SO.	EAST	WALL				

LAB ATTIC PIPE SURVEY

8-29-88 815 50064 BG-1 260- 2504272 BG-0

LINE NUMBER 82 DATE 8-29-88

INSTRUMENT LUBLUM 2220 SERIAL NUMBER 50058, 50064

DETECTOR 43-4 OPERATOR I.L. + D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88 815 50058 BG-0, 261-260 BG-0-296-288

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE ROOM 137	Conduit	3/4	0 METERS T	3	33	3
Above Rm 137			<del>0 METERS</del> B	2	22	
			2 METERS T	4	44	6
			B	1	11	
			4 METERS T	7	77	0
			B	3	33	
			6 METERS T	2	22	0
			B	3	33	
			8 METERS T	2	22	6
			B	2	22	
			10 METERS T	5	55	6
			B	3	33	
			12 METERS T	8	88	3
			B	2	22	
	<del>14 METERS</del> T					
	B					
END RM 142 EAST	WALL					

LINE NUMBER 83 DATE 8-29-88

INSTRUMENT LUDLUM 2220 SERIAL NUMBER 50064, 50058

DETECTOR OPERATOR I.L.P. & D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

~~8-29-88~~ 8-15 50058 BG-0 261-

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>			
				cpm	dpm/100cm <sup>2</sup>				
ABOVE Rm 137	Conduit	3/4	0 METERS T	4	44	0			
			B	2	22				
			2 METERS T	2	22	0			
			B	3	33				
			4 METERS T	1	11	9			
			B	2	22				
			6 METERS T	7	77	3			
			B	1	11				
			8 METERS T	3	33	0			
			B	6	66				
			10 METERS T	2	22	0			
			B	2	22				
			12 METERS T	2	22	0			
			<del>N</del>	6	66				
			14 METERS S	7	77	3			
			N	0	0				
			END RM 142 EAST WALL						

LAB ATTIC PIPE SURVEY

8-29-88 8:15 50064 BG-1 260-

LINE NUMBER 84 DATE 8-29-88

INSTRUMENT 24DLUM 2220 SERIAL NUMBER 50064, 50058

DETECTOR 43-4 OPERATOR I.C.P. & D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88 8:15 50058 BG-0 261

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE RM 137	Conduit	1/2"	0 METERS T	7	77	0
			<del>0 METERS</del> B	6	66	
			2 METERS T	0	0	6
			B	3	33	
			4 METERS T	4	44	3
			B	2	22	
			6 METERS T	3	33	6
			B	1	11	
			8 METERS T	2	22	3
			B	6	66	
			10 METERS T	3	33	3
			B	3	33	
			12 METERS T	2	22	0
			B	0	0	
			<del>0 METERS</del>			
LINE END RM140	GOES N+S					

8-29-88 8:15 50064 BG-1 260-

LINE NUMBER 85 DATE 8-29-88

INSTRUMENT LUDLAM 2220 SERIAL NUMBER 50058 50064

DETECTOR 43-4 OPERATOR J.L.P. & D.F.

SOURCE NUMBER AND VALUE #112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88 8:15 50058 B.G.-0 261-

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>			
				cpm	dpm/100cm <sup>2</sup>				
ABOVE RM. 140 N+S	CONDUIT	1/2	0 METERS	S 13	143	0			
				N 9	99				
			2 METERS	T 3	33	3			
				B 4	44				
			4 METERS	T 5	55	0			
				B 2	22				
			6 METERS	T 4	44	3			
				B 2	22				
			8 METERS	T 4	44	0			
				B 3	33				
			10 METERS	S 1	11	0			
				N 1	11				
			END RM 140 N+S						



8-29-88-50064 B.G.-0 250+292

LINE NUMBER 86

DATE 8-29-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER 50058 50064

DETECTOR 43-4

OPERATOR ILP Y D.F

SOURCE NUMBER AND VALUE #112, 1113 dPM

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88-50058 B.G.-0 296-288

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
ABOVE RM 140						
" " "	CONDUIT	1/2	0 METERS	S 1	11	0
				N 2	22	
			2 METERS	S 4	44	3
END. RM. 140 <sup>W</sup> IN T.	BOX RUNS	EAST* WEST		N 0	0	
LINE GOES INTO	LIGHT FIXTURE					

8-29-88-50064 BG-0 250-272

LINE NUMBER 87

DATE 8-29-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER 50064-50058

DETECTOR 43-4

OPERATOR I.L.P. + D.F.

SOURCE NUMBER AND VALUE #112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88-50058 BG-0 - 296-288

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
STARTS AT LIGHT	CONDUIT	3/4	0 METERS	N	4	44	0
FIXTURE OVER RM				S	5	55	
143 STOPS AT LIGHT			2 METERS	T	4	44	3
FIXTURE OVER RM				B	4	44	
138			4 METERS	T	4	44	3
				B	0	0	
			6 METERS	T	6	66	3
				B	4	44	
			8 METERS	T	4	44	3
				B	3	33	
ENDS AT LIGHT FIXTURE							
OVER RM 138							



8-29-88 50064 - BG-0 250-272

LINE NUMBER 89

DATE 8-29-88

INSTRUMENT LUDLUM 2220

SERIAL NUMBER

DETECTOR 43-4

OPERATOR I.L.P. & D.F.

SOURCE NUMBER AND VALUE #112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88-50058 - BG-0

296-288

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Above Rm 137 - OUT OF WEST WALL - UP TO TBOX AND THEN INTO EAST BLACK WALL & ENDS	Elec. Cond	1/2"	0 meters	T	2	22	0	
				B	2	22		
			2 meter	T	2	22	6	
				B	1	11		
			4 meter	T	3	33	3	
				B	1	11		
			5 meter	N	0	0	0	
				S	1	11		

~~8-29-88~~ 12:30 50064 BG-0 250-272

LINE NUMBER

90

DATE

8-29-88

INSTRUMENT

LUDLUM 2220

SERIAL NUMBER

50064, 50058

DETECTOR

43-4

OPERATOR

I.L.P. + D.F.

SOURCE NUMBER AND VALUE

#112, 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-29-88 12:30 50058 BG-0 296-288

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Above Rm 138              ENDS AT LIGHT Above Rm 134	Conduit	3/4"	0 METERS N	6	66	0		
			B	2	22			
			2 METERS T	3	33	6		
			B	7	77			
			4 METERS T	4	44	0		
			B	3	33			
			6 METERS T	2	22	3		
			B	2	22			
			8 METERS W	3	33	3		
			E	6	66			

LINE NUMBER 91 DATE 8-29-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064-50058  
 DETECTOR 43-4 OPERATOR D. D. [unclear]  
 SOURCE NUMBER AND VALUE #112; 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM Br 0-0 - 296-288  
 SOURCE RESPONSE AND BACKGROUND PM " 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF T Box oven	Elec	1/2"	0 meter T	2	22	0
Rm 137 into WEST	Conduit		B	2	22	
Block wall + ENDS			2 meter T	2	22	0
			B	1	11	
			3 meter S	2	22	3
			E	1	11	

8-30-88-50064-BG-4-257-267

LINE NUMBER 92 DATE 8-30-88

INSTRUMENT LUDLUM 2220 SERIAL NUMBER 50064 + 50058

DETECTOR 43-4 OPERATOR R.H. + J.H.

SOURCE NUMBER AND VALUE #112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM

8-30-88-50058-BG-2-262-278

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	dpm/100cm <sup>2</sup>
out of box over Airlock into west wall + Ends	Conduit	3/4"	0. METERS E	1	11	0
			<del>0. METERS</del> W	3	33	
			1 M T	4	44	3
			B	1	11	
			2 M T	3	33	0
			B	7	77	







LINE NUMBER 95 DATE 9-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR J.H.  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
STARTS ABOVE #140 WEST END -	Conduit	$\frac{3}{4}$ "	0 METERS F	0	0	6
			B	0	0	
			2 METERS F	4	44	6
			B	0	0	
			4 METERS T	1	11	0
			B	4	44	
			5 METERS T	3	33	3
Ends OVER Rm # 140 IN JUNCTION BOX			B	0	0	

LINE NUMBER 96 DATE 9-30-88  
 INSTRUMENT Wellman 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B.H.  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 257 & 269 Bkg 4  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Right Fixture Above East end of 139.	Conduit	1/2"	0 meters N	0	0	0
			S	2	22	
			1 meter T	0	0	6
			B	0	0	
Ends over hallway of Rm # 140			2 meter N	0	0	0
			S	0	0	



LINE NUMBER 98 DATE 8-30-88  
INSTRUMENT Lucas 2220 SERIAL NUMBER 50058  
DETECTOR 43-4 OPERATOR J.H.  
SOURCE NUMBER AND VALUE 112 - 1113 dpm  
SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Bkg 2  
SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction box over West Hall in Rm # 140 and ends in top of South East Wall of Rm # 139.	Conduit 1/2"		0 meters E	0	0	0
			W	0	0	
			1 meter E	0	0	0
			W	0	0	
			2 meter E	0	0	3
			W	0	0	

LINE NUMBER

99

DATE

9-30-88

INSTRUMENT

Hydram 2220

SERIAL NUMBER

50064

DETECTOR

43-4

OPERATOR

BH.

SOURCE NUMBER AND VALUE

112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

257 & 269 Bkg 4

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
Starts at Pneumatic	Conduit	3/4"	0 Meter N	1	11	3
Control Box Above			S	0	0	
Wall + Ends			1 Meter N	0	0	0
into East wall			S	3	33	
OVER Rm 139						

LINE NUMBER 100 DATE 8-30-88  
 INSTRUMENT Lucas 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B.H.  
 SOURCE NUMBER AND VALUE 112 1113 (pm)  
 SOURCE RESPONSE AND BACKGROUND AM 257 + 269 Brig 4  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts Above North Wall Over Rm #139 and Ends in Junction Box Over Rm #140 Hallway.	Conduit	1/2"	0 METERS E	0	0	0
			W	0	0	
			1 METERS E	0	0	0
			W	0	0	
			2 METERS E	0	0	6
			W	0	0	
			<del>3 METERS E</del>			
			#			

LINE NUMBER 101 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR \_\_\_\_\_ OPERATOR J.H.  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Blg 2  
 SOURCE RESPONSE AND BACKGROUND PM \_\_\_\_\_

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts At Light	Conduit	1/2"	0 meter N	0	0	3
Fixture over Rm			S	1	11	
#139 And Ends			2 meter N	0	0	0
At Light fixture			S	0	0	
over Rm #140			4 meter N	3	33	0
			S	0	0	
			5 meter N	3	33	0
			S	0	0	
			<del>6 meter N</del>			
			<del>S</del>			



LINE NUMBER 102

DATE 8-30-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR 43-4

OPERATOR B.H.

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 257 + 269

Blg 4

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm²	
				cpm	dpm/100cm²		
Starts in Junction Box over East Wall of Rm #137 and ends in the North Wall of Rm #137.	Conduit	1/2"	0 meter N	1	11	0	
			S	0	0		
			1 meter N	0	0	6	
			S	0	0		
			2 meter T	1	11	0	
			B	2	22		

LINE NUMBER 103

DATE 8-30-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR 43-4

OPERATOR B. H.

SOURCE NUMBER AND VALUE 112 - 1143 dpm

SOURCE RESPONSE AND BACKGROUND AM 257 + 269

Bkg 4

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable		
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>	
Starts in Junction Box above #138 and ends in the North wall of the Highway of Rm #140.	Conduit	1/2"	0 meters T	0	0	0		
			B	0	0			
			2 meters T	2	22	3		
			B	0	0			
			3 meters T	1	11	0		
			B	0	0			

LINE NUMBER 104 DATE 8-30-84  
 INSTRUMENT Kudlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR J.H.  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm

8:15 AM SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Bkg 2  
 12:45 PM SOURCE RESPONSE AND BACKGROUND PM 252 + 297 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
starts at south end of Rm # 140	Conduit	1/2"	0 meters N	0	0	0
			S	0	0	
in plug-in box and ends on east wall above emergency light in general lab (129) in plug-in box.	Conduit	1/2"	2 meters T	0	0	3
			B	4	44	
	Conduit	1/2"	4 meter T	2	22	0
			B	2	22	
	Conduit	1/2"	6 meter T	2	22	3
			B	0	0	
	Conduit	1/2"	8 meters T	1	11	0
			B	1	11	
	Conduit	1/2"	10 meters T	5	55	0
			B	1	11	
	Conduit	1/2"	12 meters T	1	11	0
			B	0	0	
	Conduit	1/2"	14 meters T	0	0	6
			B	3	33	
	Conduit	1/2"	16 meters T	6	66	0
			B	3	33	
	Conduit	1/2"	18 meters T	2	22	3
			B	3	33	
	Conduit	1/2"	19 meters N	2	22	3
			S	2	22	



LINE NUMBER 106 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B. Hoskins  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 257 + 269 Bkg 4  
 SOURCE RESPONSE AND BACKGROUND PM 242 + 260 Bkg 3

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
Starts in Junction	Conduit	1/2"	0 meters N	0	0	0
Box Above South			S	0	0	
wall of #140			1 meters N	0	0	0
hallway and ends			S	2	22	
on South wall						
of Rm #140 hallway.						

LINE NUMBER 107 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B. Haskins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 257 + 269 Bkg 4  
 SOURCE RESPONSE AND BACKGROUND PM 242 + 260 Bkg 3

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Start in Nymatic Control box above West wall over Row #140 and ends on North Wall of #140 Hallway.	Conduit	3/4"	0 meters T	0	0	0
			B	1	11	
			1 meters N	0	0	0
			S	1	11	
			2 meters E	2	22	6
			W	1	11	
			3 meters E	1	11	3
			W	0	0	
			5 meters E	0	0	0
			W	1	11	

LINE NUMBER 108 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR J. Handley  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Rm 2  
 SOURCE RESPONSE AND BACKGROUND PM 252 + 297 Rm 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>		
Starts above Rm# 139 from a 5 way box and ends in Rm # 39 in fluorescent light fixture.	Conduit	1/2"	0 meters T	1	11	0		
			B	3	33			
			2 meters E	1	11	6		
			W	2	22			
			4 meters E	1	11	0		
			W	0	0			

LINE NUMBER 109 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR J. Handley  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 252 + 297 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction	Conduit	1/2"	0 meters T	1	11	0
Box over #139			B	2	22	
And Ends in			2 meters T	2	22	0
Junction <sup>Box</sup> over #			B	3	33	
139 running EAST			3 meters T	1	11	0
+ WEST.			B	0	0	

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LINE NUMBER 111

DATE 8-30-88

INSTRUMENT Wellman 2220

SERIAL NUMBER 50064

DETECTOR 43-4

OPERATOR B. Horkin

SOURCE NUMBER AND VALUE 112 - 113 dpm

SOURCE RESPONSE AND BACKGROUND AM 257 + 269 Blk 4

SOURCE RESPONSE AND BACKGROUND PM 242 + 260 Blk 3

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box in #138	Conduit	1/2"	0 meters N	2	22	6
AND Ends in Flourescent Light fixture in #138.			S	0	0	
			1 meters N	1	11	6
			S	1	11	
			2 meters N	3	33	0
			S	2	22	
			<del>1 meters</del>			

LINE NUMBER 112 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B. Hookins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 257 + 269 Bag 4  
 SOURCE RESPONSE AND BACKGROUND PM 242 + 260 Bag 3

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box above west wall of #134 and ends to Junction Box on west wall of #135.	Conduit	1 1/2"	0 meters E	0	0	3
			W	0	0	
			2 meters T	0	0	0
			B	1	11	
			4 meters T	2	22	6
			B	0	0	
			6 meters T	0	0	0
			B	0	0	
			8 meters T	0	0	3
			B	0	0	

LINE NUMBER 113 DATE 8-30-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR J. Handley  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 262 + 278 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 252 + 297 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts at A 5 outlet junction box over Rm # 139	Conduit	1"	0 meters T	2	22	3
			B	2	22	
139 goes North to center of #133 turn back west and ends in a 4way junction box over #133.			2 meters T	2	22	0
			B	2	22	
			4 meters T	3	33	3
			B	3	33	
			6 meters T	1	11	0
			B	3	33	





LINE NUMBER 116 DATE 8-31-88  
 INSTRUMENT Lucium 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Powell  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 285 + 246 Page 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
STARTS ON WEST	Conduit	3/4"	0 meters N	5	55	3
WALL OVER #143			S	0	0	
AND ENDS OVER			2 meters T	2	22	0
#143			B	4	44	
			4 meters T	4	44	0
			B	3	33	
			6 meters T	4	44	0
			B	2	22	
			8 meters N	0	0	0
			S	2	22	
ENDS IN EAST WALL			10 METERS N	1	11	0
IN ROOM 143			S	4	44	

LINE NUMBER 117 DATE 8-31-88  
 INSTRUMENT Lucas 2220 SERIAL NUMBER 50258  
 DETECTOR 43-4 OPERATOR B. Hoskins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 264 + 274 Blk 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
STARTS IN Junction	Conduit	1"	0 METERS E	0	0	0
Box ABOVE WEST			W	0	0	
Wall ABOVE #134			2 METERS T	0	0	0
And Ends IN			B	3	33	
Junction Box South			4 METERS T	0	0	3
OVER #135			B	0	0	
			6 METERS E	0	0	0
			W	2	22	





LINE NUMBER 119 DATE 8-31-88

INSTRUMENT Wellum 2220 SERIAL NUMBER 50064

DETECTOR 43-4 OPERATOR J. Powell

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 285 + 246 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Starts over # 143 and ends at fluorescent light fixtures over # 143.	Conduit	1/2"	0 meters N	2	22	3		
			S	2	22			
			2 meters N	2	22	0		
			S	6	66			
			4 meters N	6	66	6		
			S	0	0			
			5 meters N	6	66	0		
			S	2	22			

LINE NUMBER 120 DATE 8-31-88  
 INSTRUMENT Luciani 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR B. Hopkins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 264 + 274 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts from Junction	Conduit	3/4"	0 meters E	0	0	6
Box over #138			W	0	0	
and in the west			1 meter N	0	0	0
wall over #138			S	0	0	

LINE NUMBER 121 DATE 8-31-88  
 INSTRUMENT Lucium 220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR B. Hoskins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 264 + 274 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction	Conduit	1/2"	0 meters E	0	0	0
Box Above #134			W	2	22	
on West Wall			1 meter N	1	11	0
And Ends Above			S	2	22	
#134 in West Wall						



LINE NUMBER 123

DATE 8-31-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50058

DETECTOR 43-4

OPERATOR B. Hoskins

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 264 + 274 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	dpm/100cm <sup>2</sup>	dpm/100cm <sup>2</sup>	
Starts in Junction	Conduit	1/2"	0 meter	N	0	0	3
box above #138			S	0	0		
in west wall			1 meter	T	0	0	0
and ends above				B	0	0	
#138 in west wall							

LINE NUMBER 124 DATE 8-31-88  
 INSTRUMENT Quellum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Lowery  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 285 246 Pkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Starts in # 142 North wall and ends in North wall of # 141.	Conduit	1/2"	0 meters T	0	0	0		
			B	4	44			
			2 meters T	5	55	3		
			B	0	0			
			4 meters T	8	88	3		
			B	1	11			
			6 meters T	2	22	6		
			B	4	44			
			8 meters T	4	44	0		
			B	4	44			
			9 meters T	3	33	0		
			B	0	0			

LINE NUMBER 125 DATE 8-31-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Powell  
 SOURCE NUMBER AND VALUE 112 1113 cpm  
 SOURCE RESPONSE AND BACKGROUND AM 285 + 246 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts on North Wall of #140 and ends at North Wall of #141.	Conduit	1/2"	0 METERS E	5	55	0
			W	1	11	
			2 METERS T	5	55	0
			B	1	11	
			4 METERS T	10	110	0
			B	0	0	
			6 METERS T	1	11	0
			B	1	11	
			8 METERS T	4	44	0
			B	3	33	
			10 METERS T	0	0	3
			B	0	0	
			12 METERS T	4	44	0
			B	2	22	
14 METERS T	2	22	0			
B	2	22				





LINE NUMBER 127 DATE 8-31-88  
 INSTRUMENT Wellum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR B. Hastings  
 SOURCE NUMBER AND VALUE 112 113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 264 + 274 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM 277 + 279 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box above North-west corner over #143 and ends in top ceiling above North west corner of #135.	Conduit	1"	0 meters N	0	0	0
			S	1	11	
			2 meters E	0	0	0
			W	0	0	
			4 meters T	2	22	0
			B	1	11	
			6 meters T	0	0	0
			B	1	11	
			8 meters T	0	0	6
			B	1	11	
			10 meters T	0	0	0
			B	0	0	
			12 meters T	1	11	0
			B	0	0	
			14 meters T	1	11	0
			B	1	11	
16 meters E	1	11	0			
W	1	11				

LINE NUMBER 128 DATE 8-31-88

INSTRUMENT Ludlum 2250 SERIAL NUMBER 50064

DETECTOR 43-4 OPERATOR J. Powell

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 285 & 246 Bldg 2

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Starts WEST wall OVER #142 and ends AT EAST WALL OVER #142.	Conduit	3/4"	0 METERS N	0	0	0		
			S	1	11			
			2 METERS T	4	44	0		
			B	3	33			
			4 METERS T	9	99	3		
			B	1	11			
			6 METERS N	6	66	0		
			S	2	22			

LINE NUMBER 129 DATE 8-31-88

INSTRUMENT Lydlum 2220 SERIAL NUMBER 50044

DETECTOR 43-4 OPERATOR J. Powell

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 285 + 246 Bkg 2

SOURCE RESPONSE AND BACKGROUND PM 260 + 243 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Starts in the west wall of #142 and ends in east wall of #142.	Conduit	1/2"	0 meters T	3	33	0		
			B	1	11			
			2 meters T	2	22	0		
			B	3	33			
			4 meters N	5	55	0		
			S	5	55			
			5 meters N	0	0	3		
			S	0	0			

LINE NUMBER 130 DATE 8-31-88

INSTRUMENT Ludlum 2520 SERIAL NUMBER 50064

DETECTOR 43-4 OPERATOR D. Powell

SOURCE NUMBER AND VALUE 112 1113 ppm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM 260 + 243 Bldg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts at South Wall Above #140 and ends at South Wall #140.	Conduit	1/2"	0 meters T	3	33	0
			B	2	22	
			2 T	4	44	0
			B	2	22	
			4 N	2	22	3
			S	3	33	

LINE NUMBER 131 DATE 8-31-88  
 INSTRUMENT Juddum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Powell  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM 260 + 243 Big 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Starts in Rm #141 on west wall and ends in center of Rm #142.	Conduit	3/4"	0 meters T	6	11	0		
			B	6	66			
			2 meters T	4	44	3		
			B	3	33			
			4 meters T	3	33	0		
			B	1	11			
			6 meters T	6	66	0		
			B	5	55			

LINE NUMBER 632 DATE 8-31-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR B. Hoekin  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM 277 + 279 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts in Control box ABOVE WEST WALL of #136 AND ENDS IN WEST WALL OF #136.	Conduit	3/4"	0 METERS E	1	11	0
			W	2	22	
			1 METERS N	1	11	0
			S	1	11	

LINE NUMBER 133 DATE 8-31-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058

DETECTOR 43-4 OPERATOR B. Hoskni

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM 277 + 279 Bldg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts in Control	Conduit	1"	0 METERS E	0	0	0
box ABOVE WEST			W	1	22	
WALL of #136			1 METERS E	1	22	0
AND ends in			W	0	0	
WEST WALL of						
#136.						



LINE NUMBER 134 DATE 8-31-88  
 INSTRUMENT Juelly 2220 SERIAL NUMBER 50054  
 DETECTOR 43-4 OPERATOR B. Hopkins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM 277 & 279 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction	Conduit	1"	0 METERS N	2	22	3
Box ON WEST <sup>WALL</sup> SIDE			S	3	33	
#136 and Ends			2 METERS T	2	22	6
in Junction Box			B	0	0	
in Northwest corner			4 METERS T	0	0	3
of Rm #135			B	1	11	
			6 METERS T	1	11	0
			B	1	11	
			8 METERS T	2	22	3
			B	2	22	
			9 METERS E	1	11	0
			W	0	0	

LINE NUMBER 135 DATE 8-31-88-9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B. Jackson & D.D.  
 SOURCE NUMBER AND VALUE 112 1113 Cpm  
 SOURCE RESPONSE AND BACKGROUND AM 301 9 308 Bkg 1 @/m  
 SOURCE RESPONSE AND BACKGROUND PM 277 + 279 Bkg 1 "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box Above Rm # 136 and ends in wall west over #129 bedside opening in grating in #129 North West corner.	Conduit	1 3/4"	0 meters Both	0	0	3
			South	3	33	
			2 meters Top	0	0	0
			Bottom	2	22	
			4 meters T	2	22	9
			B	1	11	
			6 meters T	1	11	0
			B	1	11	
			8 meters T	2	22	0
			B	0	0	
			10 meters T	2	22	0
			B	5	55	
			12 meters T	4	44	0
			B	1	11	
			14 meters T	0	0	0
			B	2	22	
			16 meters T	2	22	0
			B	0	0	
			17 meters Top	4	44	3
			Bottom	2	22	

LINE NUMBER 136 DATE 8-31-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Powell  
 SOURCE NUMBER AND VALUE 112 1113 cpm  
 SOURCE RESPONSE AND BACKGROUND AM  
 SOURCE RESPONSE AND BACKGROUND PM 260 + 243 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable		
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>	
Starts on south wall of 140 and ends at east wall over 140	Conduit	1/2"	0 meters N	0	0	0		
			S	4	44			
			2 meters N	5	55	0		
			S	3	33			
			4 meters T	2	22	0		
			B	0	0			
			6 meters N	3	33	0		
			S	5	55			
			7 meters T	0	0	3		
			B	2	22			

LINE NUMBER 137 DATE 8-31-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064

DETECTOR 43-4 OPERATOR J. Powell

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM 260 + 243 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable			
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>		
Starts in Center of Rm # 140 and ends on east wall of Rm # 140	Conduit	1/2"	0 meters	T	1	11	3		
				B	1	11			
			2 meters	T	0	0	0		
				B	2	22			
			4 meters	T	1	11	0		
				B	1	11			
			5 meters	N	1	11	0		
				S	0	0			

LINE NUMBER 139

DATE 9-1-88

INSTRUMENT Ludlum 2220

SERIAL NUMBER 50064

DETECTOR 43-4

OPERATOR J. Powell J. HANLEY

SOURCE NUMBER AND VALUE 112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM BF-0 - 276 + 262

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts at North wall in 142 and ends at Florescent light fixture in Rm# 143.	Conduit	1/2"	0 meters T	9	99	3
			B	2	22	
			2 meters N	11	121	0
			S	6	66	
			4 meters T	9	99	0
			B	13	143	
			5 meters T	9	99	0
			B	7	77	

LINE NUMBER 139

DATE 9-1-88

INSTRUMENT Ludlum 220

SERIAL NUMBER

DETECTOR 43-4

OPERATOR D. Powell

SOURCE NUMBER AND VALUE #112

1113 dpm

SOURCE RESPONSE AND BACKGROUND AM

Bkg = 0 cpm 276-262

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts on North wall of #142 And ends on North wall of Rm #143.	Conduit	3/4"	0 meters N	1	11	0
			S	0	0	
			2 meters T	6	66	3
			B	1	11	
			4 meters E	0	0	0
			W	0	0	

LINE NUMBER 140- DATE 9-1-88  
 INSTRUMENT DuLun 2220 SERIAL NUMBER ~~50054~~ 50058  
 DETECTOR 43-4 OPERATOR ~~James H. Dennis~~ Ford  
 SOURCE NUMBER AND VALUE 112 113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 301 & 308 Bkg 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM ~~277-279~~ 297-310 Bkg 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
starts from T Bot Comes down to light fixtures in #41 line on east side.	Elec	1/2"	0 Meters E	2	22	0
	CONDUIT		W	5	55	
	ALUM	2	N	2	22	6
			S	0	0	

LINE NUMBER 141 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim H  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Bkg-0 276-262  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Chimney out of junction Box 4 way above 143 goes down to a light fitting in 143	Alum	1/2"	0 Meters T	3	33	0
			B	7	77	
			1 Meters N	10	110	0
			S	6	66	
			2 Meters N	7	77	0
			S	7	77	



LINE NUMBER 142 DATE 9-1-88

INSTRUMENT Leadlum 2220 SERIAL NUMBER 50058

DETECTOR 43-4 OPERATOR Dennis Ford

SOURCE NUMBER AND VALUE 112 - 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 301 - 308 Bkg 1 c/m

SOURCE RESPONSE AND BACKGROUND PM 297 - 310 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
<i>staircase starts from T Box at ceiling goes down to light fixture in 141. is on west side</i>	<i>Alum</i>	<i>1/2"</i>	<i>0 meters N</i>	<i>2</i>	<i>22</i>	<i>0</i>
	<i>Elec</i>		<i>E</i>	<i>1</i>	<i>11</i>	
	<i>conduit</i>		<i>2 meters N</i>	<i>2</i>	<i>22</i>	<i>6</i>
			<i>S</i>	<i>3</i>	<i>33</i>	

LINE NUMBER *143* DATE *9-1-88*  
 INSTRUMENT *Ludlum 2220* SERIAL NUMBER *50058*  
 DETECTOR *Gas Perp. 43-4* OPERATOR *Dennis Dwork*  
 SOURCE NUMBER AND VALUE *112 - 113 dpm*  
 SOURCE RESPONSE AND BACKGROUND AM *301 - 308 Bkg. 1 cpm*  
 SOURCE RESPONSE AND BACKGROUND PM *297 - 310 " 1 cpm*

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
<i>Coming out of joint</i>	<i>Flex</i>	<i>1/2"</i>	<i>0 meters N</i>	<i>1</i>	<i>11</i>	<i>3</i>
<i>Box over Rm 141</i>	<i>Conduit</i>		<i>S</i>	<i>1</i>	<i>11</i>	
<i>Down into Block</i>			<i>2 meters SN</i>	<i>2</i>	<i>22</i>	<i>0</i>
<i>Wall Northeast</i>			<i>Side</i>	<i>3</i>	<i>33</i>	
<i>Corner:</i>						

LINE NUMBER

144

DATE

9-1-88

INSTRUMENT

Ludlum 2220

SERIAL NUMBER

50058

DETECTOR

43-4

OPERATOR

Dennis Davel

SOURCE NUMBER AND VALUE

SN 112 - 1113 d/m

SOURCE RESPONSE AND BACKGROUND AM

301 - 308

Bkg 1 c/m

SOURCE RESPONSE AND BACKGROUND PM

297 - 310

" 19m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Inst. Air Lines go into this Conduit at ceiling level - ATTIC AND THEN DOWN TO Block Wall CENTER ON North WALL OF Rm 141	ALUM	1/2"	0 meters N	0	0	3
			S	1	11	
			2 meters N	0	0	3
			<del>2 meters</del> S	0	0	

LINE NUMBER 145 DATE 9-1-88  
 INSTRUMENT Radburn 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM BA-0% 276-262  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box over 143 End in wall south east 143	Conduit	1/2	0 METER T	5	55	0
			B	4	44	
			1 METER T	7	77	0
			B	1	11	
			3 METER N	4	44	6
			S	1	11	

LINE NUMBER 146 DATE 9-1-88  
 INSTRUMENT LodLom 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE SN 112 - 1113d/m  
 SOURCE RESPONSE AND BACKGROUND AM 301 - 308 BK 0 1/m  
 SOURCE RESPONSE AND BACKGROUND PM 297 - 310 " 1/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF 3-TEE Junction	Flt	1/2"	0 meters Top	2	22	0
Box-Ceiling Area	Conduit		Bottom	0	0	
LAB ATTIC OVER Rm			2 meters N	4	44	0
141 Down to Block			S	2	22	
Wall (center) North						
Wall Rm 141						

LINE NUMBER 147 DATE 9-1-88  
 INSTRUMENT Ludlum SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Hardley  
 SOURCE NUMBER AND VALUE 112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM BG-0-276-262  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
start in Junction	Conduit	1/2	0 meters N	4	44	0
Box over 143 ends			S	3	33	
in south wall East			1 meter T	3	33	0
Wall 143			B	3	33	
			1 meter N	1	11	3
			S	1	11	

LINE NUMBER 148 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058  
 DETECTOR 43-4 OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE SM 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 301 - 308 Bkg 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 297 - 310 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 3 T Junction Box Over Rm-141 & Goes Down into West Wall Block in Rm 141	Elec	1/2	0 meters T	3	33	0
	Conduit		B	4	44	
			2 meters N	3	33	3
			S	2	22	





LINE NUMBER 150 DATE 9-1-88  
 INSTRUMENT Juddon 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR Dennis Dahl  
 SOURCE NUMBER AND VALUE SN 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 301 - 308 Bkg 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 297 - 310 H<sub>s</sub> 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Elec Conduit Line	Elec	1/2"	0 meters Bottom	2	22	0
Between LAB	Conduit		South	4	44	
Attic Access Light	Alum		2 meters Bottom	3	33	6
Bulbs - Center			South	4	44	
of Attic over			4 meters South	0	22	0
Rm 143			Bottom	3	33	

LINE NUMBER 151 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Bkgd-0-276-262  
 SOURCE RESPONSE AND BACKGROUND PM Bkgd-0-276-286

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
<i>starts over Rm 142 goes down to light fixture in 142</i>	<i>conduit</i>	<i>1/2</i>	<i>0 meter N</i>	<i>5</i>	<i>55</i>	<i>0</i>
			<i>1 S</i>	<i>0</i>	<i>0</i>	<i>0</i>
			<i>1 meter N</i>	<i>0</i>	<i>0</i>	<i>0</i>
			<i>S</i>	<i>5</i>	<i>55</i>	<i>0</i>
			<i>2 meter N</i>	<i>2</i>	<i>22</i>	<i>3</i>
			<i>S</i>	<i>2</i>	<i>22</i>	<i>3</i>

LINE NUMBER 152 DATE 9-1-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058

DETECTOR 43-4 OPERATOR J. Ford

SOURCE NUMBER AND VALUE SN 112 1113 d/m

SOURCE RESPONSE AND BACKGROUND AM 301 - 308 Bkg 1 c/m

SOURCE RESPONSE AND BACKGROUND PM 304 - 310 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall over Rm 143 out of Junction Box 3T	P/Lead Conduit	1"	0 meters Top	1	11	3
			Bottom	1	11	
To Rectangular Junction Box over Rm 143 N-west wall & Rm 137 Air Lock			2 " Top	0	0	3
			Bottom	0	0	
			4 " Top	1	11	3
			Bottom	1	11	

LINE NUMBER 153 DATE 9-1-88  
 INSTRUMENT Rudlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Hanley  
 SOURCE NUMBER AND VALUE #112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Bkgnd-0-276-262  
 SOURCE RESPONSE AND BACKGROUND PM Bkgnd-0-276-286

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable		
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>	
Starts above # 142 and ends in North wall of #142	Conduit	1/2"	0 meters N	6	66	0		
			S	4	44			
			1 meter N	3	33	0		
			S	6	66			
			2 meters N	5	55	0		
			S	6	66			

LINE NUMBER 154 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR D. Jord  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 301 + 309 Bkg 1  
 SOURCE RESPONSE AND BACKGROUND PM 304 + 310 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable		
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>	
Starts in Junction Box on West Wall over Rm # 143 and ends <del>at</del> Rm # 143 in Emergency Light box.	Conduit	1/2"	0 meters E	2	22	3		
			W	2	22			
			2 meters T	0	0	0		
			S	1	11			
			3 meters T	4	44	6		
			S	2	22			
			4 meters. E	2	22	0		
			W	1	11			

LINE NUMBER 155 DATE 9-1-88  
 INSTRUMENT Quellin 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Honclley  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 276 + 262 Bkg 0  
 SOURCE RESPONSE AND BACKGROUND PM 276 + 286 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts Above # 142 And Ends in North wall of #142.	Conduit	1/2"	0 meters N	4	44	0
			S	4	44	
			2 meters N	2	22	3
			S	5	55	
			4 meters N	3	33	3
			S	4	44	

LINE NUMBER 156 DATE 9-1-88  
 INSTRUMENT Hydram 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR D. Jue  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 301 + 308 Bkg 1  
 SOURCE RESPONSE AND BACKGROUND PM 304 + 310 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction box above row #143 and ends in Row #143 in Southwest corner.	Conduit	1/2"	0 meters N	0	0	0
			S	5	55	
			2 meters N	5	55	0
			S	4	44	
			4 meters N	2	22	0
			S	1	11	

LINE NUMBER 157 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Honday  
 SOURCE NUMBER AND VALUE 112 - 1113 cpm  
 SOURCE RESPONSE AND BACKGROUND AM 276 + 262 Bkg 0  
 SOURCE RESPONSE AND BACKGROUND PM 276 + 286 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction Box over Rm #142 and ends in North Wall of #142.	Conduit	3/4"	0 meters T	5	55	9
			B	2	22	
			1 meters T	2	22	0
			B	4	44	
			3 meters N	2	22	3
			S	5	55	





LINE NUMBER 159 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Honnelly  
 SOURCE NUMBER AND VALUE 112 1113 cpm  
 SOURCE RESPONSE AND BACKGROUND AM 276 + 262 Bkg 0  
 SOURCE RESPONSE AND BACKGROUND PM 276 + 286 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in flow meter over run #143 AND ENDS IN EAST WALL OF #143.	Conduit	3/4"	0 meters E	4	44	3
			W	5	55	
			1 meters E	7	77	3
			W	6	66	
			2 meters E	3	33	6
			W	3	33	

LINE NUMBER 160 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR D. Jerd  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 301 + 309 Bkg 1  
 SOURCE RESPONSE AND BACKGROUND PM 304 + 310 Bkg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in West Wall directly over West wall of Rm #143 and ends in Rm #129 up through concrete ceiling into Motor Control	Conduit	2 1/2"	0 meters N	T	77	0
			S	1	11	
			2 meters T	5	55	0
			B	2	22	
			4 meters T	3	33	0
			B	1	11	
			6 meters T	3	33	0
			B	5	55	
			8 meters T	2	22	3
			B	2	22	
			10 meters T	0	0	0
			B	0	0	
			12 meters T	0	0	3
			B	1	11	
			14 meters T	5	55	3
			B	2	22	
			16 meters T	1	11	0
			B	3	33	
			18 meters T	1	11	6
			B	0	0	
20 meters T	2	22	0			
B	2	22				
21 meters T	1	11	6			
B	1	11				

LINE NUMBER 161 DATE 9-1-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR J. Handley  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 276 + 262 Bkg 0  
 SOURCE RESPONSE AND BACKGROUND PM 276 + 286 Bkg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in Junction box ABOVE #139 AND ENDS IN EAST WALL OF Rm #139.	Conduit	1/2"	0 meters T	2	22	0
			1 meters N	4	44	0
			2 meters N	6	66	0
			3 meters S	6	66	0
			4 meters N	4	44	0
			S	5	55	

LINE NUMBER #162 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 263 Tce 7uel 265 Bkg = 1cpm  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION		Direct		Smearable
					cpm	dpm/100cm <sup>2</sup>	dpm/100cm <sup>2</sup>
2 1/2" line, comes out of main jacket box in room 138 and goes over to another junction between rm 136	alum. conduit	1"	0 meters	T	2	22	3
				B	1	11	
	2 meters	T	4	44	0		
		B	4	44			

LINE NUMBER 163 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112 113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 243-295 Bkg=1 cpm  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
starts above the East Wall of 139 goes down in the East Wall of 139	Conduit	1"	0 meters N	5	55	0
			S	3	33	
			1 N	5	55	0
			S	4	44	
			2 meters N	2	22	0
			S	2	22	

LINE NUMBER #164 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 243 - 295 13kg1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
164 Comes out of main junction Box over Room 138, and goes over to another junction box in Room 136	Alum. Eleet Conduit	1/2"	0 Meters T	<del>1</del>	11	0
			B	1	11	
			2 meters T	2	22	3
			B	1	11	

LINE NUMBER 165 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handely  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 243-295 1 Bkg  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
starts above east Wall in Room 139 ends at junction Box over West hall in Room 140	Alum	1/2"	0 meters T	3	33	0		
			B	2	22			
			1 meters T	14	154	0		
			B	4	44			
			2 meters T	2	22	3		
			B	3	33			



LINE NUMBER #166 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 5" 50058  
 DETECTOR 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE 112 - 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Toe 263 - 265 Hand Bkg = 1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
1" Line Runs West to East comes out of junction Box over Room 136 end at Feedin Box over Room 140. at North end of Room.	Alom Elec conduit	#1"	0 meters N	1	11	0
			S	3	33	
	2 meters T		4	44	6	
	B		1	11		
	4 meters T		3	33	6	
	B		0	0		
	6 meters T		3	33	6	
	B		3	33		
	8 meters T		4	44	3	
	B		4	44		
	10 meters T		1	11	6	
	B		2	22		
12 meters T	2	22	0			
B	1	11				

LINE NUMBER 167 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handy  
 SOURCE NUMBER AND VALUE 112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 243-295 Bkg = 1 cpm  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
start at a junction Box over the East Wall of Room 139	Alum	1"	0 meters T	4	44	0
			B	2	22	
go East to East Wall of 140 and ends at junction			2 meters T	5	55	0
			B	5	55	
Box on East Wall in Rm 140			4 meters T	5	55	3
			B	2	22	
			5 meters N	5	55	3
			S	1	11	

LINE NUMBER #168 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058  
 DETECTOR 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE 112 - 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 243 - 295 Bkg. - 1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
comes out of a Feeder Box and goes from North to South then West to East down into Rm 140 in to a circuit Breaker	Elect Conduit	1"	0 Meters	EE	1	11	0	
				W	1	11		
				2 Meters	T	3	33	3
					B	4	44	
				4 Meters	T	2	22	3
					B	2	22	
				6 Meters	T	0	0	0
					B	4	44	
				8 Meters	N	2	22	3
					S	1	11	
				10 Meters	N	4	44	6
					S	4	44	

LINE NUMBER #169 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112 - 1113 d/pm  
 SOURCE RESPONSE AND BACKGROUND AM 243 - 295 Bkg of 1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable		
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>	
line starts at a junction Box over the East Wall in Rm 139 goes east to East Wall of Rm 140 and ends at junction Box on East Wall in Rm 140	Alum.	1"	0 Meters	T	2	22	3	
				B	1	11		
			2 Meters	T	6	66	3	
				B	2	22		
			4 Meters	T	2	22	3	
				B	2	22		
			5 Meters	N	3	33	3	
				S	4	44		

LINE NUMBER #170 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM ~~to~~ 263 ~~Full~~ 265 Bkg off  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Line comes off 4 Tee Elec Junction Box over Rm 133 South End - Line Runs North & Goes into North Block Wall - Rm 133	Atom	1"	0 meter T	3	33	3
	Elec		B	1	11	
	conduit					
	2 meter T	2	22	0		
	B	0	0			
	4 meter T	2	22	0		
	B	0	0			
	5 meter N	2	22	0		
	S	2	22			

LINE NUMBER 171 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Hardley  
 SOURCE NUMBER AND VALUE #112-1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM Blank 1 - 243-295  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
<i>starts at Junction Box over 133 goes east and down into southeast wall of 133</i>	<i>Conduit</i>	<i>1/2</i>	<i>0 meter</i>	<i>T</i>	<i>4</i>	<i>44</i>	<i>3</i>	
				<i>B</i>	<i>9</i>	<i>99</i>		
			<i>2 meter</i>	<i>T</i>	<i>5</i>	<i>55</i>	<i>0</i>	
				<i>B</i>	<i>1</i>	<i>11</i>		
			<i>4 meter</i>	<i>T</i>	<i>8</i>	<i>88</i>	<i>3</i>	
				<i>B</i>	<i>8</i>	<i>88</i>		
			<i>5 meter</i>	<i>N</i>	<i>2</i>	<i>22</i>	<i>0</i>	
				<i>S</i>	<i>6</i>	<i>66</i>		

LINE NUMBER # 172 DATE 9-2-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058

DETECTOR 43-4 OPERATOR Dennis Ford

SOURCE NUMBER AND VALUE 112 1113 d/m

SOURCE RESPONSE AND BACKGROUND AM 263 - 265 Flg #1

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 4 Tee Elec Junction Box over RM133 South Center to PRECAST CENTER ALLAN - IN ATTIC OVER WEST WALL - RM133	Atom Elec Conduit	'1/2"	0 meters N	0	0	6
			S	2	22	
			2 meters T	3	33	0
			B	0	0	
			4 meters N	0	0	0
			S	0	0	

LINE NUMBER 173 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE #112-1115 dp m  
 SOURCE RESPONSE AND BACKGROUND AM 243-295 Bldg-1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Comes out of Vacuum Bldg over North Wall of 139 & goes down in to south Wall of 139	Conduit	1"	0 Meters N	0	0	0	
			S	7	77		
	1 Meter		N	6	66	0	
			S	1	11		
	2 Meters		N	4	44	3	
			S	2	22		



LINE NUMBER #174 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER 50058  
 DETECTOR PROPANE GAS - PROBE 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE #112 1113 d/mc  
 SOURCE RESPONSE AND BACKGROUND AM 263 265 ~~265~~ ~~265~~ 1  
 SOURCE RESPONSE AND BACKGROUND PM 282 296 ~~296~~ ~~296~~ = 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 3T Elect junction Box Center Piece of 133 and goes in to Wall, west side of 133	Alum	1/2"	0 meter T	0	0	0
	Elec		B	3	33	
	Conduit		2 meter <del>A</del>	0	0	0
			<del>8</del>	3	33	
			<del>4 meter A</del>			
			<del>8</del>			



LINE NUMBER #176 DATE 9-2-88  
 INSTRUMENT Ludlum 2220 SERIAL NUMBER SN 50058  
 DETECTOR PROPANE GAS - Probe 43-4 OPERATOR Dennis Dool  
 SOURCE NUMBER AND VALUE #112 1113 d/m 477  
 SOURCE RESPONSE AND BACKGROUND AM 263 - 265 BKG = 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 282 - 296 " 0 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Comes out of 3T Elect meter Box <del>133</del> North, goes into from Center Pillar & goes down to Wall in 133	Alum	1/2"	0 meter T	1	11	0	
	Elec		B	3	33		
	Conduit						
				2 meter T	3	33	3
				B	1	11	
				4 meter N	4	44	3
			S	2	22		

LINE NUMBER 177 DATE 9-2-88  
 INSTRUMENT Leidlum 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE #112 1113 d/p  
 SOURCE RESPONSE AND BACKGROUND AM 243 - 295 Bkg #1  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Line starts at a junction Box above Rm 133 & goes down inside Wall in 133	Conduct	1/2"	0 meters N.	5	55	0
			S.	1	11	
			1 meter N	7	77	6
			S	2	22	
			2 meters N	3	33	0
			S	3	22	



LINE NUMBER 179 DATE 9-2-88

INSTRUMENT Ludlum 2220 SERIAL NUMBER 50064

DETECTOR 43-4 OPERATOR Jim Handely

SOURCE NUMBER AND VALUE # 112 1113 d/lm

SOURCE RESPONSE AND BACKGROUND AM 243 - 295

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
<i>line starts from junction Brd over km</i>	Alum.	1/2"	0 Meters T	5	55	3
			B	2	22	
<i>133 &amp; goes North to junction Brd over 133</i>			1 Meters T	3	33	0
			B	7	77	
			2 meters T	3	33	0
			B	4	44	

LINE NUMBER #line 180 DATE 9-2-88-9-6-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER SN 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE #112 - 1113d/m 475  
 SOURCE RESPONSE AND BACKGROUND AM 258 - 296 Bkg 2%/m 9-6-88  
 SOURCE RESPONSE AND BACKGROUND PM 282 296 Bkg = 0%/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 4 tee junction V Box at	Alum	1/2"	0 meter N	1	11	3
	Elec		S	0	0	
West wall over Rm 135 - South	Conduit		2 meter T	0	0	3
			B	0	0	
West corner - in Lab Attic			4 meter T	1	11	0
			B	1	11	
Goes West to East Then South to North * into Block wall North East top wall Rm 135			6 meter T	0	0	0
			B	0	0	
			8 meter N	0	0	0
			S	0	0	
			9 meter N	0	0	3
			S	0	0	

LINE NUMBER \*181      DATE 9-2-88-9-6-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER SN 50058  
 DETECTOR Probe-43-4 OPERATOR Dem  
 SOURCE NUMBER AND VALUE      #112      1113 d/m 477  
 SOURCE RESPONSE AND BACKGROUND AM      288 - 296 - 2 d/m 9-6-88  
 SOURCE RESPONSE AND BACKGROUND PM      282 - 296 - 0 d/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
out of 3 Tee	Alum	1/2"	0 meter T	1	11	6
Junction Box			B	1	11	
OVER S.E END OF	Elec					
Rm 135 IN LAB ATTIC			2 meter N	2	22	6
+ Goes into Block	conduit		S	1	11	
WALL TOP ON S.E						
WALL OF Rm 135						



LINE NUMBER #182

DATE 9-2-88-9-6-88

INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER

SN 50058

DETECTOR Probe 434

OPERATOR Dennis

SOURCE NUMBER AND VALUE #112 113 d/m 4.71

SOURCE RESPONSE AND BACKGROUND AM

288-296 2 d/m 9-6-88

SOURCE RESPONSE AND BACKGROUND PM

282-296 0-9/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
comes out of	Alum	1/2"	0 - meter E	1	11	0
3 Tee Suction	Elec		B	1	11	
Box over S.E.	conduit					
corner - Rm 135			2 meter T	1	11	0
+ Goes down to			B	0	0	
Block wall N.E.						
corner of Rm 136						

LINE NUMBER 183 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 Probe SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112-1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Bldg #1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Bldg #0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>
<u>starts a junction</u> <u>Box over North</u> <u>Wall of 140</u>	<u>Conduit</u>	<u>1/2"</u>	<u>0 meters</u>	<u>T</u>	<u>4</u>	<u>44</u>	<u>0</u>
				<u>B</u>	<u>4</u>	<u>44</u>	
<u>goes down into</u> <u>North Wall of 140</u>			<u>1 meter</u>	<u>T</u>	<u>5</u>	<u>55</u>	<u>0</u>
				<u>B</u>	<u>1</u>	<u>11</u>	
			<u>2 meters</u>	<u>N</u>	<u>4</u>	<u>44</u>	<u>3</u>
				<u>S</u>	<u>3</u>	<u>33</u>	
			<u>3 meters</u>	<u>N</u>	<u>1</u>	<u>11</u>	<u>3</u>
				<u>S</u>	<u>5</u>	<u>55</u>	

LINE NUMBER 184 DATE 9-6-88  
 INSTRUMENT Cudlum 2220 Propane SERIAL NUMBER SN 50058  
 DETECTOR 43-4 PROBE OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE #112 113 d/m 457  
 SOURCE RESPONSE AND BACKGROUND AM 258 - 296 Bkg 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF Block Wall	Alum	1/2"	0 meters T	0	0	0
ON S. WEST CORNER	Elec		B	0	0	
ARM 135 ACROSS	Conduit					
steel Grating in Attic			2 meters T	0	0	3
& INTO Block Wall			B	0	0	
N. WEST CORNER Rm 135			4 meters T	3	33	6
			B	1	11	
			6 meters T	1	11	6
			B	1	11	

LINE NUMBER 185 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 Probe SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112-1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Bkg of 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Bkg of 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Comes out of junction Box over North Wall of <del>Box</del> 140. It goes West to another junction Box over Wall of 140.	Conduit	1/2"	0 meters T	6	66	3		
			B	6	66			
			1 meter T	8	88	3		
			B	4	44			
			2 meters T	4	44	6		
			B	9	99			

LINE NUMBER #186 DATE 9-6-88

INSTRUMENT Ludlum 2220 PROPANE SERIAL NUMBER SN 50058  
GAS

DETECTOR PROBE 43-4 OPERATOR Dennis L. ...

SOURCE NUMBER AND VALUE #112 1113 d/m 475

SOURCE RESPONSE AND BACKGROUND AM 258 - 296 Rho 2 c/m

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
OUT OF 3 Tee	Alum	1/2"	0 meter T	3	33	3
Sanction Box for	Elec		B	1	11	
Light Bulb Attic	Conduit					
over Rm 136 Attic			2 meter T	0	0	3
to Light Bulb			B	1	11	
Sanction Box over						
WEST WALL in Attic			4 meter T	4	44	3
Rm 140-NORTH.			B	5	55	
			5 meter T	3	33	0
			B	1	11	









LINE NUMBER #190

DATE 9-6-88

INSTRUMENT Ludlum 220 PROPANE GAS

SERIAL NUMBER 50058

DETECTOR PROBE 43-4

OPERATOR Dem Paul

SOURCE NUMBER AND VALUE 112 113 d/m

SOURCE RESPONSE AND BACKGROUND AM 258 - 296 2 d/m

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
out of 3 Tee Junction Box over Rm 133 to Elec Light over Rm 133 EAST side.	Alum	1/2"	0-meter N	2	22	0
	Elec		S	0	0	
	conduit		2 meter N	2	22	0
			S	2	22	
			3 meter N	2	22	3
			S	2	22	

LINE NUMBER 191 DATE 9-6-88  
INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
DETECTOR Probe 43-4 OPERATOR Jim Handley  
SOURCE NUMBER AND VALUE 112- 1113 d/lms  
SOURCE RESPONSE AND BACKGROUND AM 278-280 Blkg of 1  
SOURCE RESPONSE AND BACKGROUND PM 266-291 Blkg of 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
Comes out of Junction Box over N W corner of 140 + goes North into Junction Box in 132	Conduit	1/2"	0 Meters T	2	22	0		
			B	2	22			
			2 Meters T	2	22	0		
			B	2	22			
			4 Meters T	6	66	0		
			B	4	44			
			6 Meters N	3	33	0		
			S	2	22			



LINE NUMBER 193 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handely  
 SOURCE NUMBER AND VALUE 112- 1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Bkg of 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Bkg of 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of junction Box over 140 gas	Conduit	1/2"	0 meters N	4	44	0
			S	10	110	
North over Room 132 & turns			2 meters T	2	22	3
			B	3	33	
West & goes to junction Box over 133			4 meters T	2	22	0
			B	5	55	
			6 meters T	2	22	0
			B	0	0	
			7 meters T	2	22	0
			B	3	33	



LINE NUMBER 195 DATE 9-6-88  
 INSTRUMENT Ludlum 222 Probe SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handely  
 SOURCE NUMBER AND VALUE 112-1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Bldg 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Bldg 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Comes out of junction Box over	Conduit	1/2"	0 Meters T	5	55	3
			B	2	22	
Ln 140 goes North to junction Box over Ln 132			2 Meters T	4	44	6
			B	5	55	
			4 Meters T	2	22	6
			B	1	11	



LINE NUMBER 197 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 Probe SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112- 1113 d/l/m  
 SOURCE RESPONSE AND BACKGROUND AM 273 - 280 Bkg of 1  
 SOURCE RESPONSE AND BACKGROUND PM 266 - 291 Bkg of 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
Come out of section over <sup>Rm</sup> 133 goes West then goes down in to light fixture in Rm <sup>Rm</sup> 133	Conduit	1/2	0 Meters T	5	55	0	
			B	5	55		
			2 Meters N	6	66	0	
			S	2	22		
			3 Meters N	3	33	0	
			S	2	22		



LINE NUMBER 198 DATE 9-6-88  
 INSTRUMENT Lod/om 2220 PROPANE GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Daniel  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 258 296 29/m Bkg  
 SOURCE RESPONSE AND BACKGROUND PM 312 - 266 19/m "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 3 TEE Junction <sup>with Light</sup> OPEN	Alum	3/4"	0 meter W	2	22	0
			E	2	22	
Rm 136 S.E. corner IN Attic & goes to junction Box with Light <del>and</del> N. East corner Rm 136 Above IN Attic	Elec Conduit		2 meter T	2	22	0
			B	1	11	
			4 meter T	3	33	3
			B	1	11	
			6 meter T	0	0	3
			B	0	0	
			8 meter E	3	33	0
			W	0	0	
			10 meter T	4	44	0
			B	0	0	
			12 meter T	3	33	3
			B	5	55	

LINE NUMBER *199* DATE *9-6-88*  
 INSTRUMENT *Ludlum 2220 Probe* SERIAL NUMBER *50064*  
 DETECTOR *Probe 43-4* OPERATOR *Jim Handy*  
 SOURCE NUMBER AND VALUE *112-1113 d/pas* *Qty*  
 SOURCE RESPONSE AND BACKGROUND AM *273-280* *1 Bkg*  
 SOURCE RESPONSE AND BACKGROUND PM *266-291* *0 Bkg*

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>
<i>Comes out of Junction Box over Rm 133</i>	<i>Conduit</i>	<i>3 1/4"</i>	<i>0 meters</i>	<i>T</i>	<i>2</i>	<i>22</i>	<i>0</i>
				<i>B</i>	<i>6</i>	<i>66</i>	
<i>turns &amp; goes down towards 133 then</i>			<i>2 Meters</i>	<i>T</i>	<i>3</i>	<i>33</i>	<i>6</i>
				<i>B</i>	<i>3</i>	<i>33</i>	
<i>Turns North over 133 then</i>			<i>4 Meters</i>	<i>T</i>	<i>7</i>	<i>77</i>	<i>0</i>
				<i>B</i>	<i>24</i>	<i>264</i>	
<i>Up into Junction Box over 133.</i>			<i>6 Meters</i>	<i>N</i>	<i>6</i>	<i>66</i>	<i>0</i>
				<i>S</i>	<i>4</i>	<i>44</i>	

REPRODUCED FROM THE REPORT OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY



LINE NUMBER ~~200~~ 201 DATE 9-6-88  
 INSTRUMENT Ludlum 222 <sup>Propane Plus</sup> SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Hambley  
 SOURCE NUMBER AND VALUE 112- 1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Bkg of 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Bkg of 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
comes out of junction Box above #732 + goes East, then down to #132 to a light fixture	Conduit	1/2"	0 Meters	T	7	77	6	
				B	4	44		
			2 Meters	T	2	22	0	
				B	5	55		
			4 Meters	T	3	33	3	
				B	5	55		
			6 Meters	T	3	33	0	
				B	4	44		

LINE NUMBER	202	DATE	9-6-88
INSTRUMENT	Ludlum 220 PROANE GAS	SERIAL NUMBER	50058
DETECTOR	Probe 43-4	OPERATOR	Dennis [signature]
SOURCE NUMBER AND VALUE	112 1113 d/m		
SOURCE RESPONSE AND BACKGROUND AM		258 - 296	20/m
SOURCE RESPONSE AND BACKGROUND PM		312 266	19/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Come out of Tee Suction Box over Door to Rm 135 from	Alum	1/2"	0 meter E	1	11	3
			W	4	44	
Rm 129 IN ATTIC AT ceiling PRECAST it goes into N. EAST Block Wall - Rm 135	Flec Conduit		2 meter N	2	22	6
			S	1	11	

\*\*\* UNCALIBRATED \*\*\*





LINE NUMBER *205* DATE *9-6-88*  
 INSTRUMENT *Ludlum 2220 Probe* SERIAL NUMBER *50064*  
 DETECTOR *Probe 43-4* OPERATOR *Jim Handley*  
 SOURCE NUMBER AND VALUE *112- 1113 d/l/m*  
 SOURCE RESPONSE AND BACKGROUND AM *273-280 Rtg 1*  
 SOURCE RESPONSE AND BACKGROUND PM *266-291 Rtg 0*

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable cpm/100cm <sup>2</sup>
				cpm	cpm/100cm <sup>2</sup>	
<i>comes out of                      Vacuum Bot                      down Rm 132                      West Wall, goes                      down in to Wall                      of 132 West Wall</i>	<i>Vac Line</i>	<i>3/4"</i>	<i>0 Meter N</i>	<i>3</i>	<i>33</i>	<i>0</i>
			<i>S</i>	<i>6</i>	<i>66</i>	
			<i>1 Meter T</i>	<i>6</i>	<i>66</i>	<i>0</i>
			<i>B</i>	<i>0</i>	<i>0</i>	
			<i>2 " N</i>	<i>9</i>	<i>99</i>	<i>3</i>
			<i>S</i>	<i>5</i>	<i>55</i>	







LINE NUMBER 208 DATE 9-7-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis [Signature]  
 SOURCE NUMBER AND VALUE 112 1113d/m  
 SOURCE RESPONSE AND BACKGROUND AM 288 - 277 Bkg. 2c/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
OUT OF 2 Tee	Alum	1/2"	0 meter N	0	0	0
Sunction Box North	Elec		S	0	0	
ABove Rm135 BY	Conduit					
West Block wall			2 meter T	1	11	3
INTo 4 Tee Sunction			B	0	0	
Box Over North						
WALL Rm135			3 meter N	1	11	0
			S	1	11	

LINE NUMBER 209 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 Probe SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112-1113 d/lps  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Blg 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Blg 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	lcpm/100cm <sup>2</sup>		dbm/100cm <sup>2</sup>
starts at junction Box over 132, goes down in West Wall of Rm 132	Conduit	1/2"	0 meters N	3	33	0	
			S	3	33		
			1 Meter N	1	11	3	
			S	7	77		
			2 meters N	3	33	3	
			S	1	11		





LINE NUMBER 212

DATE 9-7-88

INSTRUMENT Ludlum 2220 Propane Gas

SERIAL NUMBER 50058

DETECTOR Probe 43-4

OPERATOR Dennis Quil

SOURCE NUMBER AND VALUE 112 1113 d/m

SOURCE RESPONSE AND BACKGROUND AM 288 - 277 Rng 20/m

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
out of 5 Tee	Alum	1/2"	0 meter E	1	11	0
Section Box	Elec		S	1	11	
over Rm 135 North	Conduit					
Black wall on west			2 meter T	3	33	0
Black wall attic			B	1	11	
Goes North Along						
west wall in Rm 129			4 meter T	1	11	3
*goes into west			B	0	0	
wall over Door in						
Rm 29 into Pre-Hall						

LINE NUMBER 213 DATE 9-6-88  
 INSTRUMENT Ludlum 2220 <sup>Propane</sup> SERIAL NUMBER 50064  
 DETECTOR Pipe 43-4 OPERATOR Jim Handley  
 SOURCE NUMBER AND VALUE 112- 1113 d/lms  
 SOURCE RESPONSE AND BACKGROUND AM 273-280 Rly 1  
 SOURCE RESPONSE AND BACKGROUND PM 266-291 Rly 0

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable cpm/100cm <sup>2</sup>
				cpm	cpm/100cm <sup>2</sup>	
comes out of junction Box	Conduit	1/2"	0 Meters N	44	44	0
			S	2	22	
over Lin. Lab 129 goes down to Light Fitter in Cm 129 Line Labs			1 Meter N	5	55	0
			S	4	44	
			2 Meters N	5	55	0
			S	5	55	



LINE NUMBER 214 DATE 9-7-88  
 INSTRUMENT Ludlum 220 PROPANE GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dem Quail  
 SOURCE NUMBER AND VALUE 112 1113d/m  
 SOURCE RESPONSE AND BACKGROUND AM 288-277 Brng 29/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
out of west Block Wall in Attic over Rm 1350 goes EAST	Alum	1"	0 meters T	1	11	0
	Flec		S	1	11	
over Rm 134 AND Turns North over Rm 1299 goes into concrete Ceiling up to motor control Room.	Conduit		2 meter. T	0	0	3
			S	1	11	
			4 meters T	1	11	0
			B	0	0	
			6 meters T	1	11	0
			B	1	11	
			<del>7 meters</del> #			
			S			

LINE NUMBER 215 DATE 9-7-88  
 INSTRUMENT 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR B. Hoskins  
 SOURCE NUMBER AND VALUE 112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 271-299 Bkg. -2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts at box in ceiling 129	conduit	1/2"	0 meters E	0	0	6
			W	0	0	
East Wall center			2 meters E	1	11	0
			W	3	33	
			4 meters T	6	66	3
			B	2	22	
			6 meters T	3	33	0
			B	4	44	
			8 meters T	1	11	3
			B	1	11	
			10 meters T	1	11	6
			B	0	0	
			12 meters T	3	33	3
			B	1	11	
			14 meters T	1	11	0
			B	6	66	
			16 meters T	2	22	0
			B	2	22	
Ends West wall			17 meters T	0	0	0
129 - NW corner			B	0	0	

LINE NUMBER 216 DATE 9-7-88  
 INSTRUMENT Ludlum 2220 PROPANE GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis Divil  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 288-277 BWG 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
out of west Block wall in Attic over Rm 135 goes EAST over Rm 134 AND Turns North over Rm 129+ goes into concrete ceiling UP to Motor Control Room.	Plum	1"	0 meter T	1	11	3
	Flec		S	1	11	
	Conduit					
	2 meter N		4	44	0	
	S		1	11		
	4 meter T		1	11	0	
	B		0	0		
	6 meters T		1	11	0	
	B		1	11		
	<del>7 meters N</del>					
	<del>S</del>					



LINE NUMBER 218 DATE 9-7-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 285 - 277 Bkg 29/m  
 SOURCE RESPONSE AND BACKGROUND PM 292 - 304 115 19/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Out of west Block wall in Attic over Rm 135 - goes EAST over Rm 135 & turns North & goes into concrete ceiling over Rm 135 into motion control Rm.	Alum Elec Conduit	1"	0 meter N	0	0	0
			B	1	11	
			2 meter N	3	33	3
			B	3	33	
			4 meter N	0	0	6
			B	0	0	
			5 meter N	1	11	0
			S	2	22	

LINE NUMBER	219	DATE	9-7-88
INSTRUMENT	2220	SERIAL NUMBER	50064
DETECTOR	43-4	OPERATOR	B. Hoskins
SOURCE NUMBER AND VALUE	#112	1113 dpm	
SOURCE RESPONSE AND BACKGROUND AM	271	-299	Bkg. - 2
SOURCE RESPONSE AND BACKGROUND PM			

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in top of East wall 129	Conduit	1/2"	0 meters E	3	33	0
			W	3	33	
Ends in Jet. box above East wall 129			1 meter E	2	22	0
			W	2	22	

LINE NUMBER 220 DATE 9-7-88  
 INSTRUMENT Ludlum 220 PROANE SERIAL NUMBER 50058  
GAS  
 DETECTOR Probe 43-4 OPERATOR Dennis [Signature]  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 288 - 277 Ring 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 292 - 304 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF West Block WALL in Attic over Rm 135 - goes EAST	Alum Elec Conduit	1"	0 Meter N	1	11	0
			B	0	0	
over Rm 135 & Turns North & goes into concrete ceiling			2 Meter N	0	0	0
			B	2	22	
over Rm 135 & into Motor Control Room			4 Meter N	3	33	0
			B	1	11	
			5 Meter N	2	22	3
			S	2	22	

LINE NUMBER 221 DATE 9-7-88  
 INSTRUMENT Ludlum 2220 Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 271-261 BKG 2  
 SOURCE RESPONSE AND BACKGROUND PM 279-246 BKG 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Starts in jet Box above E wall of 129 and ends in top of E. wall 129 (Going North)	Conduit	1/2"	0 meters T	3	33	0
			" " B	0	0	
			2 meters T	3	33	3
			" " B	4	44	
			4 meters E	1	11	0
			" " W	5	55	
			5 meters E	2	22	3
			" " W	2	22	







LINE NUMBER **224**

DATE **9-7-88**

INSTRUMENT **Ludlum 2220**

**PROPANE GAS**

SERIAL NUMBER

**50058**

DETECTOR **Probe 43-4**

OPERATOR

**Demi Paul**

SOURCE NUMBER AND VALUE

**112 1113d/m**

SOURCE RESPONSE AND BACKGROUND AM

**255 - 277 Bko 2c/m**

SOURCE RESPONSE AND BACKGROUND PM

**292 - 304 W 1c/m**

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of west Block wall in Attic	<b>Alum</b>	<b>1"</b>	<b>0 meter N</b>	<b>1</b>	<b>11</b>	<b>3</b>
	<b>Elec</b>		<b>B</b>	<b>1</b>	<b>11</b>	
over Rm 135; goes East over Rm 134	<b>Conduit</b>		<b>2 meter B</b>	<b>2</b>	<b>22</b>	<b>6</b>
			<b>S</b>	<b>0</b>	<b>0</b>	
it turns North over Rm 129 & into concrete ceiling			<b>4 meter T</b>	<b>4</b>	<b>44</b>	<b>6</b>
			<b>B</b>	<b>0</b>	<b>0</b>	
it into Motor Control Room			<b>6 meters N</b>	<b>2</b>	<b>22</b>	<b>0</b>
			<b>S</b>	<b>0</b>	<b>0</b>	



LINE NUMBER 226 DATE \_\_\_\_\_

INSTRUMENT Ludlum 2220 PROpane Gas SERIAL NUMBER 50058

DETECTOR Probe 43-4 OPERATOR Demir Durak

SOURCE NUMBER AND VALUE 112 1113 d/m

SOURCE RESPONSE AND BACKGROUND AM 288 - 277 BKG 2 g/m

SOURCE RESPONSE AND BACKGROUND PM 292 - 304 " 1 g/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF CONCRETE	Alum	2"	0 meter N	2	22	3
ceiling over	Plex		S	2	22	
Rm 129 in Attic	Conduit					
+ AN to 3 Tee			1 meter N	3	33	0
Sanction Box			S	5	55	









LINE NUMBER 230 DATE 9-7-88-9-8-88  
 INSTRUMENT Ludlum 220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis Paul  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 9-88 288 - 277 2 c/m Bkg.  
 SOURCE RESPONSE AND BACKGROUND PM 9-88 292 - 304 1 c/m 115.  
9-88 257 - 266 0 c/m Bkg.

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF CONCRETE ceiling INTO motor control over Rm 135	Alom	3/4"	0 meter N	2	22	3
	Elec Conduit		S	2	22	
OCCS EAST over Rm 129 turns North & Goes Through NORTH Block wall Rm 129.			2 meter T	1	11	0
			B	1	11	
			4 meter T	1	11	0
			B	1	11	
			6 meter T	2	22	0
			B	1	11	
			8 meter T	3	33	6
			B	1	11	
			10 meter T	2	22	3
			B	1	11	
			12 meter T	1	11	0
			B	2	22	



LINE NUMBER 232 DATE 9-8-88  
 INSTRUMENT Ludlum 2220 <sup>PROPANE</sup> <sub>GAS</sub> SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dennis [Signature]  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 257 - 266 Bkg. 14/m  
 SOURCE RESPONSE AND BACKGROUND PM "

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
out of concrete	PLum	1"	0 meter N	0	0	0
ceiling - motor	Elec		S	0	0	
concrete Rm into	Conduit					
Rm 129 - doors			2 meter T	1	11	3
North & into			B	2	22	
North Block wall			4 meter T	1	11	3
			B	0	0	
			6 meter T	2	22	3
			B	0	0	
			7 meter T	1	11	3
			B	1	11	



LINE NUMBER 234 DATE 9-8-88  
 INSTRUMENT Ludlum 220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR D. J. ...  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 257-266 Bkg 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>		
				cpm	dpm/100cm <sup>2</sup>			
out of concrete ceiling - Motion Control Rm down into Rm 129 & North through North Block wall	Flom Elec Conduit	3/4"	0 meter N	1	11	3		
			S	4	44			
			2 meter T	5	55	12		
			B	1	11			
			4 meter T	2	22	6		
			B	2	22			
			6 meter T	1	11	3		
			B	1	11			
			7 meter T	1	11	0		
			B	1	11			



LINE NUMBER 236 DATE 9-8-88  
 INSTRUMENT Ludlum 220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dominic  
 SOURCE NUMBER AND VALUE 112 1113d/m  
 SOURCE RESPONSE AND BACKGROUND AM 257 - 266 Bkg 2%/m  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
0 to 1' concrete	Plum	2"	0-meter N	0	0	0
ceiling over Rm 129	Elec		S	0	0	
By west wall - goes	Conduit					
East + Turns North			2 meter T	0	0	6
+ Goes through North			B	0	0	
Block Wall Rm 129			4 meter T	1	11	3
			B	0	0	
			6 meter T	0	0	0
			B	0	0	
			8 meter T	0	0	3
			B	1	11	
			9 meter T	1	11	0
			B	0	0	







LINE NUMBER 239 DATE 9-8-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hoskins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 288-279 BKG. 2  
 SOURCE RESPONSE AND BACKGROUND PM 269-294 BKG. 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
starts in jet.	conduit	1/2"	0 meters ST	1	11	0
box above			" "  B	1	11	
E. Wall 129			2 meters ST	2	22	0
goes S. then			" "  B	2	22	
W to 4 way			3 meters N	1	11	0
jet box above			S	2	22	
S.E. corner						
Rm 129						











LINE NUMBER 245 DATE 9-8-88  
 INSTRUMENT 2220 SERIAL NUMBER 50064  
 DETECTOR 43-4 Propane gasPROP. OPERATOR B. Hoskins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 288-279 Bkg-2  
 SOURCE RESPONSE AND BACKGROUND PM 269-294 Bkg-1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Jut. Box above Room 129	Alum. Conduit	1/2	0-meters E W	0 2	0 22	0
Ends in light Fixture 129 S.E.			1-meter E W	2 2	22 22	0



LINE NUMBER #246 DATE 9-8-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR Probe 43-4 OPERATOR Dan [Signature]  
 SOURCE NUMBER AND VALUE 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 257 - 266 Bkg 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 272 - 279 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>	
				cpm	dpm/100cm <sup>2</sup>		
OUT of west Block wall over Rm 135 DOES EAST INTO Sanctuary Box over Rm 129	Alum Elec Conduit	1"	0 meter T	0	0	6	
			S	3	33		
			2 meter T	6	66	0	
			B	3	33		
			4 meter T	1	11	0	
			B	0	0		



LINE NUMBER 248 DATE 9-8-88  
INSTRUMENT 2220 SERIAL NUMBER 50058  
DETECTOR 43-4 OPERATOR D. Ford  
SOURCE NUMBER AND VALUE #112 1113 dpm  
SOURCE RESPONSE AND BACKGROUND AM 257 -266 Bkg-2  
SOURCE RESPONSE AND BACKGROUND PM 272 -279 Bkg-1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
West wall 135	Alum.	1"	0 meters T	1	11	0
			S	2	22	
Ends motor control floor			2 meters E	1	11	0
			W	1	11	









LINE NUMBER 253 DATE 9-9-88  
 INSTRUMENT Ludlum 2220 <sup>Propane Gas</sup> SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 281-301 Bkg 2 cpm  
 SOURCE RESPONSE AND BACKGROUND PM 245-264 Bkg. 2 cpm

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in jet box above S.W. corner of Rm 129 travels N.E. approx. 6 meters then East <del>to</del> , goes down and ends in jet box on wall of 130.	Conduit	1"	0 meters T	0	0	6
			" " B	3	33	
			2 meters T	3	33	3
			" " B	0	0	
			4 meters T	3	33	0
			" " B	3	33	
			6 meters T	0	0	3
			" " B	1	11	
			8 meters T	1	11	0
			" " B	0	0	
			10 meters T	0	0	0
			" " B	1	11	
			11 meters E	2	22	0
			" " W	2	22	





LINE NUMBER 255 DATE 9-9-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 281-301 Bkg 2cpm  
 SOURCE RESPONSE AND BACKGROUND PM 945-264 Bkg 2cpm

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
Starts in jst box above Rm 133 goes N about 4 meters then E about 6 meters then down and ends in the North wall of Rm 132	Conduit	1/2"	0 meters T	3	33	0
			" " B	3	33	
			2 meters T	2	22	0
			" " B	0	0	
			4 meters T	0	0	9
			" " B	0	0	
			6 meters T	3	33	0
			" " B	0	0	
			8 meters T	1	11	3
			" " B	0	0	
			10 meters N	1	11	0
			" " S	2	22	









LINE NUMBER #260 DATE 9-9-88  
 INSTRUMENT Ludlum <sup>PROANE GAS</sup> 9220 SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Dal  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 267 - 308 Bkg. 29/m  
 SOURCE RESPONSE AND BACKGROUND PM 266 - 288 " 29/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>
out of west Block wall over Rm 135 goes EAST & turns North over Rm 129 to concrete ceiling into Motor control Rm.	Alum	4"	0 meter T	3	33	0	
	Elec		B	1	11		
	Conduit						
				2 meter T	0	0	6
				B	0	0	
				4 meter T	0	0	0
				B	0	0	
				6 meter T	1	11	3
				B	0	0	
				8 meter T	4	44	3
				B	3	33	
				9 meter N	1	11	0
				S	3	33	





LINE NUMBER #262 DATE 9-9-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Dool  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 267-308 - Bkg. 2 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 266-288 " 2 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
out of west Block wall over Rm 135, goes East & turns North over Rm 129 to concrete ceiling into Motion Control Rm.	Plum. Elec. Conduit	4"	0 meter T	0	0	0
			B	0	0	
			2 meter T	1	11	0
			B	3	33	
			4 meter T	2	22	6
			B	0	0	
			6 meter T	1	11	0
			B	0	0	
			8 meter T	6	66	0
			B	3	33	
			9 meter N	1	11	0
			S	1	11	

LINE NUMBER 263 DATE 9-12-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 255-276 Bkg 1  
 SOURCE RESPONSE AND BACKGROUND PM 263-255 Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
starts in Attic ceiling above SE corner Rm 129 goes west about 1/2 meters then North about 6 meters Ends in Wall above North Wall of Rm 130	Conduit	2 1/2"	0 meters E	3	33	3
			" " W	4	44	
			2 meters T	1	11	0
			" " B	4	44	
			4 meters T	2	22	3
			" " B	3	33	
			6 meters N	1	11	6
			" " S	1	11	
			8 meters T	1	11	3
			" " B	2	22	
			10 meters T	2	22	0
			" " B	1	11	
			12 meters T	2	22	6
			" " B	2	22	
			14 meters T	1	11	3
			" " B	1	11	
			16 meters T	1	11	0
" " B	1	11				
17 meters T	3	33	3			
" " B	2	22				

LINE NUMBER ~~#264~~ 264 DATE 9-9-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR *Delmar Doral*  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 267-308 Bkg. 29/m  
 SOURCE RESPONSE AND BACKGROUND PM 266-288 11<sup>s</sup> 29/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable	
				cpm	dpm/100cm <sup>2</sup>		dpm/100cm <sup>2</sup>
OUT OF CONCRETE CEILING FROM MOTOR CONTROL RM DOWN DOES NORTH OVER RM 129 & DOES UP INTO CONCRETE CEILING TO MOTOR CONTROL RM.	Alum	1 3/4"	0 meters N	0	0	0	
	Elec		S	0	0		
	Conduit						
				2 meters T	1	11	6
				B	3	33	
				3 meters N	1	11	0
			S	2	22		

LINE NUMBER **#265** DATE **9-12-88**  
 INSTRUMENT **Ludlum 2220** **PROPANE GAS** SERIAL NUMBER **50058**  
 DETECTOR **PROBE 43-4** OPERATOR **Dennis Dool**  
 SOURCE NUMBER AND VALUE **#112** **1113 d/m**  
 SOURCE RESPONSE AND BACKGROUND AM **274 - 277** **Bkg. 1 c/m**  
 SOURCE RESPONSE AND BACKGROUND PM **11**

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Comes out of 2 Tee Junction Box goes North - EAST ACROSS Attic then North + DOWN NORTH wall over Rm 129 into Rm 129 on North wall	Alum	1/2"	0 meter T	1	11	9
	Elec		B	1	11	
	CONDUIT					
	2 meter T		0	0	6	
	B		0	0		
	4 meter T		1	11	0	
	B		1	11		
	6 meter T		5	55	12	
	B		3	33		
	8 meter N		0	0	9	
	S		1	11		
	10 meter N		2	22	0	
	S		2	22		

LINE NUMBER **#266** DATE **9-9-88**  
 INSTRUMENT **Ludlum 2220** **DRIFTS** SERIAL NUMBER **50058**  
 DETECTOR **PROBE 43-4** OPERATOR **Hennis Ind**  
 SOURCE NUMBER AND VALUE **#112** **1113 d/m**  
 SOURCE RESPONSE AND BACKGROUND AM **267-308** **Rk. 20/4**  
 SOURCE RESPONSE AND BACKGROUND PM **266-288** **11<sup>s</sup> 20/4**

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of concrete ceiling over Rm 129, goes west & turns north over Rm 129 & goes through north block wall	Alum Elec conduit	3/4"	0 meters N	2	22	3
			E	3	33	
			2 meters N	1	11	3
			S	1	11	
			4 meters S	1	11	0
			W	0	0	
			6 meters S	0	0	0
			B	1	11	
			8 meters T	0	0	0
			B	0	0	
			10 meters T	3	33	0
			B	3	33	
12 meters T	0	0	0			
B	0	0				

LINE NUMBER **#267** DATE **9-12-88**  
 INSTRUMENT **Ludlum 2220 PROPRANE GAS** SERIAL NUMBER **50058**  
 DETECTOR **PROBE 43-V** OPERATOR **[Signature]**  
 SOURCE NUMBER AND VALUE **#112** **1113d/m**  
 SOURCE RESPONSE AND BACKGROUND AM **274-277** **Rho = 10/m**  
 SOURCE RESPONSE AND BACKGROUND PM **288-290** **" 1 1/2m**

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
OUT OF 3 TOP JUNCTION BOX IN	Alum	1/2"	0 meter N	3	33	3
	Elec		S	3	33	
LAB ATTIC OVER Rm 129 OOPS	conduit		2 meter T	1	11	12
				B	2	22
NORTH INTO NORTH WALL OF Rm 129 IN ATTIC			3 meter T	3	33	3
				B	3	33



LINE NUMBER	269	DATE	9-12-88
INSTRUMENT	Ludlum 2220 Propane Gas	SERIAL NUMBER	50064
DETECTOR	Probe 43-4	OPERATOR	Bob Hopkins
SOURCE NUMBER AND VALUE	#112		1113 dpm
SOURCE RESPONSE AND BACKGROUND AM		255-276	Bkg 1
SOURCE RESPONSE AND BACKGROUND PM		263-285	Bkg 2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts in jet	Conduit	1"	0 meters E	2	22	3
Box above N			" " W	2	22	
End of Rm 130			2 meters T	0	0	3
Runs West +			" " B	2	22	
ends in W. Wall			4 meters T	0	0	0
Rm 129			" " B	1	11	
			6 meters T	2	22	0
			" " B	2	22	
			8 meters T	1	11	0
			" " B	1	11	
			10 meters T	2	11	3
			" " B	2	22	
			12 meters T	2	22	0
			" " B	2	22	
			14 meters T	1	11	3
			" " B	1	11	













LINE NUMBER #275 DATE 9-12-88  
 INSTRUMENT Ludlum 2200 PROBE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 274 279 Bkg. 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 288 -294 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of concrete ceiling IN ATTIC OVER S.W. CORNER OF Rm 129.	Alum	4"	0 meter E	2	22	3
	Elec		W	1	11	
Line goes North into North wall of Rm 129 IN ATTIC	Conduit		2 meter T	1	11	12
			B	1	11	
			4 meter T	4	44	0
			B	5	55	
			6 meter T	4	44	0
			B	2	22	
			7 meter T	2	22	0
			B	1	11	







LINE NUMBER #278 DATE 9-12-88  
 INSTRUMENT Ludlum 2200 PROBE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Cook  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 274 - 277 Bkg. 1 d/m  
 SOURCE RESPONSE AND BACKGROUND PM 288 294 " 1 d/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of Tee under Rm 142 & goes West & turns North & goes into Blockwall North East corner of Rm 143	DURCON	1 1/2"	0 meter T	0	0	0
			B	0	0	
	VENT LINE		2 meter T	3	33	0
			B	2	22	
			4 meter E	1	11	0
			W	2	22	
			6 meter N	1	11	0
			S	2	22	
			7 meter N	0	0	0
			S	1	11	





LINE NUMBER #281 DATE 9-13-88  
 INSTRUMENT Ludlum 2200 PROBE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE #112 1113 cpm  
 SOURCE RESPONSE AND BACKGROUND AM 252 - 284 Bkg. 10/m  
 SOURCE RESPONSE AND BACKGROUND PM 279 - 297 " 19/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of Concrete ceiling	DURSON	1 1/2"	0 meter N	1	11	3
			S	3	33	
EAST WALL OVER Rm 132 - S-EAST corner of room, goes north & comes down & into block wall on north wall of Rm 132 in North East corner	Ceramic Vent LINE		2 meter T	7	44	3
			B	2	22	
			4 meter +	2	22	3
			B	1	11	
			6 meter N	3	33	3
			S	3	33	
			7 meter N	3	33	9
			S	1	11	

LINE NUMBER #282 DATE 9-13-88  
 INSTRUMENT Ludlum 2200 PRO PAPE SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR [Signature]  
 SOURCE NUMBER AND VALUE #112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 252 - 284 Bkg. 19/m  
 SOURCE RESPONSE AND BACKGROUND PM 279 - 297 " 19/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of Concrete Ceiling	DORCON	1 1/2"	0 meter N	10	110	3
			SE	29	319	
IN LAB ATTIC OVER RM 136 South West Corner. Goes	CERAMIC VENT LINE;		2 meter T	2	22	3
			B	0	0	
North & into West Wall Over Rm 135 N. West Corner.	FROM 0 to 4 meters		4 meter E	4	44	0
			W	4	44	
	Then into GALVANIZED Steel Pipe		6 meter T	4	44	0
			B	2	22	
			8 meter T	0	0	0
			B	3	33	
			10 meter T	2	22	0
			B	6	66	
			11 meter T	11	110	0
			B	3	33	





LINE NUMBER 285 DATE 9-13-88  
 INSTRUMENT Ludlum 2220 <sup>PROPANE GAS</sup> SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 251-281 BK<sub>g</sub> 2  
 SOURCE RESPONSE AND BACKGROUND PM 255-259 BK<sub>g</sub> 3

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
Starts in West	4 1/2" cast	4 1/2"	0 meter N	0	0	3
Wall above W	iron		" " S	3	33	
door of airlock	drain		2 meter E	3	33	9
Runs E, N, then	pipe		" " W	2	22	
W. again. Ends			4 meters E	3	33	0
in ceiling (attic)			" " W	6	66	
above center 129			6 meters E	3	33	0
			" " W	3	33	
			8 meters E	0	0	0
			" " W	2	22	
			10 meter E	0	0	0
			" " W	3	33	
			12 meters E	2	22	3
			" " W	0	0	
			14 meters E	0	0	0
			" " W	3	33	
			16 meters E	0	0	0
			" " W	0	0	
			18 meters E	0	0	0
			" " W	2	22	
			20 meters N	4	44	0
			" " S	2	22	
			22 meters N	0	0	3
			" " S	0	0	
			24 meters N	3	33	0
			" " S	6	66	
			26 meters E	4	44	0
			" " W	0	0	
			27 meters E	0	0	0
			27 meters W	0	0	



LINE NUMBER #286 DATE 9-13-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER 50058  
 DETECTOR PROBE-43-4 OPERATOR Dennis Ford  
 SOURCE NUMBER AND VALUE SN/12 11130/m  
 SOURCE RESPONSE AND BACKGROUND AM 252-284 Bkg. 10/m  
 SOURCE RESPONSE AND BACKGROUND PM 279-297 " 10/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Comes out of MAIN Header	CAST	4 1/2"	0 meter T	3	33	0
	IRON		B	0	6	
DRAIN PIPE over Rm 135 South End & is JUST ABOVE Floor GRATING goes EAST over Rm 134 & goes UP INTO concrete ceiling	DRAIN PIPE	4 1/2"	2 meters T	5	55	3
			B	1	11	
		4 1/2"	4 meter T	2	22	6
			B	0	0	
		4 1/2"	6 meter N	2	22	0
			S	0	0	



LINE NUMBER # 288 DATE 9-13-88  
 INSTRUMENT Ludlum 2220 PROpane GAS SERIAL NUMBER SN 50058  
 DETECTOR PROBE 43-4 OPERATOR Dennis Davel  
 SOURCE NUMBER AND VALUE SN 112 1113 d/m  
 SOURCE RESPONSE AND BACKGROUND AM 252 - 284 Bkg 1 c/m  
 SOURCE RESPONSE AND BACKGROUND PM 279 - 297 " 1 c/m  
 9-14-88 mon. 259 - 297 " 1 c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable
				cpm	dpm/100cm <sup>2</sup>	
Rm 119 Comes out of west Block wall over Duct work in Lab Attic Northwest Corner - runs East & turns North over Rm 130 North Corner & goes up through concrete ceiling into Moten Control	BLACK	8"	0 meter T	3	33	0
	IRON		B	4	44	
	PIPE		2 meter T	3	33	0
	HOT		B	4	44	
	WATER		4 meter T	5	55	0
	OUTLET		B	6	66	
	LINE		6 meter T	3	33	6
	FROM		B	2	22	
	BOILER		8 meter T	7	77	3
	ROOM		B	2	22	
			10 meter T	1	11	0
			B	4	44	
			12 meter E	0	0	3
			W	2	22	
			14 meter N	1	11	0
			S	1	11	

LINE NUMBER #289 DATE 9-13-88  
 INSTRUMENT Ludlum 2220 PROPRANE GAS SERIAL NUMBER 50058  
 DETECTOR PROBE 43-4 OPERATOR [Signature]  
 SOURCE NUMBER AND VALUE SN112 1113d/m  
 SOURCE RESPONSE AND BACKGROUND AM 252-284 Bko 1c/m  
 SOURCE RESPONSE AND BACKGROUND PM 279-297 " " 1c/m

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	dpm/100cm <sup>2</sup>	Smearable dpm/100cm <sup>2</sup>
Rm 129 comes out of west black wall oven Duct work in Lab Attic North West corner - runs East & turns North over Rm 130 North corner & goes up through concrete ceiling into Meter Control	Black IRON PIPE	8"	0 meter T	1	11	0
			B	5	55	
			2 meter T	1	11	3
			B	2	22	
			4 meter T	5	55	0
			B	9	99	
			6 meter T	7	77	3
			B	3	33	
			8 meter T	2	22	6
			B	7	77	
			10 meter T	3	33	0
			B	9	99	
			12 meter T	4	44	3
			B	5	55	
14 meter N	0	0	0			
S	1	11				

150 ft  
smearable  
only wet

LAB ATTIC PIPE SURVEY

LINE NUMBER 290 DATE 9-14-88  
 INSTRUMENT Ludlum 2220 <sup>PROPANE</sup> GAS SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 258 - 289 BK g 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts above	Black	10"	0 meters			3
the NW <del>with</del> end	Iron		" "			
Rm 129 in	Water		2 meters			3
the wall runs	process		" "			
E. to near	lines -		4 meters			0
E wall Rm 130	(inlet)		" "			
then N. then			6 meters			0
up. End in			" "			
attic ceiling			8 meters			0
above N end			" "			
of Rm 130			10 meters			0
			" "			
			12 meters			3
			" "			
			14 meters			6
			" "			
			15 meters			6
lines wet from						
condensate						
No direct						
readings taken						
W. a. Ayers						

500p  
measures  
only  
lines  
wet

LINE NUMBER 291 DATE 9-14-88  
 INSTRUMENT Ludlum 2220 Propane Gas SERIAL NUMBER 50064  
 DETECTOR Probe 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 258-289 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Starts above	Black iron	10"	0 meters			0
the NW. end	water		" "			
Rm 129 in	process		2 meters			0
attic wall	line		" "			
runs E. to	(inlet)		4 meters			3
Near E. Wall			" "			
Rm 130 then			6 meters			0
N. then up.			" "			
Ends in attic			8 meters			0
ceiling above			" "			
N end Rm 130			10 meters			0
			" "			
			12 meters			0
			" "			
			14 meters			0
			" "			
			16 meters			0
			" "			
lines wet from						
condensate						
No direct						
readings taken						
W.G. Rogers						

LINE NUMBER 292 DATE 9-14-88  
 INSTRUMENT Ludlum 2220 <sup>Propane Gas</sup> SERIAL NUMBER 50064  
 DETECTOR 43-4 OPERATOR Bob Hopkins  
 SOURCE NUMBER AND VALUE #112 1113 dpm  
 SOURCE RESPONSE AND BACKGROUND AM 258-289 Bkg 2  
 SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
Branches off line # 285 above center of 129 goes up, then N, then up again. Ends in attic ceiling above N. central 129	Black iron	2"	0 meters - E	45	495	3
	Drain line		" " N	20	240	
	cast iron		2 meters T	1	11	3
			" " B	2	22	
			4 meters T	2	22	6
			" " B	3	33	
			6 meters N	0	0	0
			" " S	0	0	







LINE NUMBER 295 DATE 9-15-88

INSTRUMENT Ludlum 2220 gas SERIAL NUMBER 50058

DETECTOR 43-4 OPERATOR Bob Hoskins

SOURCE NUMBER AND VALUE #112 1113 dpm

SOURCE RESPONSE AND BACKGROUND AM 270-285 BKg 0

SOURCE RESPONSE AND BACKGROUND PM 282-293 " 1

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct		Smearable dpm/100cm <sup>2</sup>
				cpm	dpm/100cm <sup>2</sup>	
starts at	Conduit	2 1/4"	0 meters N	3	33	0
jet box above		od	" " S	3	33	
N.E. corner			1 meter N	2	22	0
Rm 142 and <del>into E. Wall</del>			" " S	1	11	
goes down into E. Wall of 142						