



Cardiology and Vascular Associates, P.C.

November 19, 2010

United States Nuclear Regulatory Commission
Region III, Materials Licensing Division
801 Warrenville Road
Lisle, IL 60532

Re: License No.: 21-3217701

Please accept the attached close out surveys and my request to decommission our facilities located at 43344 Woodward Ave, Ste. 111, Bloomfield Hills Michigan 48302 and 1135 W. University, Ste 440, Rochester Michigan 48307. I am requesting both locations be removed from our license.

If there are any questions please feel free contact me at 248-396-5336.

Sincerely,

Joe Mueller, RSO
Cardiology and Vascular Associates, P.C.



Cardiology and Vascular Associates, P.C.

November 19, 2010

UNITED STATES NUCLEAR REGULATORY COMMISSION
Region III, Materials Licensing Section
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Re: Close out request for NRC License # 21-32177-01

Dear Sir/Madam:

Please accept this close out request for NRC license # 21-32177-01 at the following address.

ADDRESS: 1135 W. University, Suite 440, Rochester Hills, Michigan 48307

The results of the close-out are enclosed for your review.

If you have any questions or require additional information please contact myself, Joe Mueller at 248-844-1010, ext. 204.

Sincerely,

Joe Mueller, RSO
Technical Director of Nuclear Cardiology

Close-out Survey Information License

Close-out Location:

ADDRESS 1135 W. University, Ste 440, Rochester Hills, Michigan 48307

Date Performed: November 9, 2010

Performed By: Joe Mueller, NMT

Comments: All sealed sources were properly transferred to Cardiology and Vascular Associates, P.C. 645 Barclay Circle, Rochester Hills Michigan 48307. NRC License # 21-3217701 (Sealed source leak test enclosed.) If there are any question regarding Cardiology and Vascular Associates, PC., please contact The RSO Joe Mueller at 248-396-5336

Instruments:

Wipes for contamination performed with the following well counter:

Manufacturer: Capintec
Model Number: CRC-15W
Serial Number: 171588
Efficiency Factor: 1.17 dpm/cpm

Area survey performed with the following survey meter:

Manufacturer: Ludlum
Type: GM
Model Number: Model 14 C
Serial Number: 226161
Probe Model: End Window
Calibration Date: 7/21/2010

Battery check acceptable: YES
Operational check acceptable: YES
Constancy check acceptable: YES
Check source value: 0.65 mR/h

Radionuclides Used:

Unsealed

Tc-99m and Tl-201

Special Note: No PET isotopes were ever used at this facility.

Sealed

Cs-137, Co-57, Ba-133 (leak tests attached)

Visual Check: The area was checked to ensure that all radioactive waste had been removed. No evidence of radioactive material was noted.

Radiation Level Survey: No area within the lab demonstrated radiation levels in excess of the background reading of 0.02 mR/hr.

Removable Contamination: No area within the lab demonstrated removable contamination in excess of established trigger levels.

Sealed Sources: All sealed sources were properly transferred to 645 Barclay Circle, Rochester Hills Michigan 48307. NRC License # 21-3217701

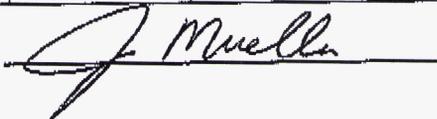
Surveys, Wipes, and Diagrams are attached for review.

Sealed Source Leak Test Attached

Also attach close-out survey Diagram

Location	Survey Bkg	Results	Wipe Bkg	Results
1. Counter top scan room	.02 mRh	.02 mRh	182 DPM	58 DPM
2. Gamma Camera	.02 mRh	.02 mRh	182 DPM	58 DPM
3. Acq / Process area	.02 mRh	.02 mRh	182 DPM	58 DPM
4. Treadmill	.02 mRh	.02 mRh	182 DPM	58 DPM
5. Counter top area	.02 mRh	.02 mRh	182 DPM	58 DPM
6. Dose Calb.	.02 mRh	.02 mRh	182 DPM	58 DPM
7. Dose Draw area	.02 mRh	.02 mRh	182 DPM	58 DPM
8. Package receipt area	.02 mRh	.02 mRh	182 DPM	58 DPM
9. Injection area	.02 mRh	.02 mRh	182 DPM	58 DPM

Performed By Joe Mueller on Nov 09, 2010

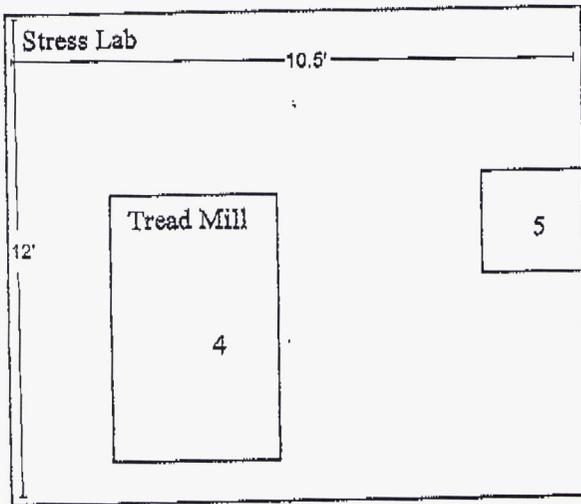
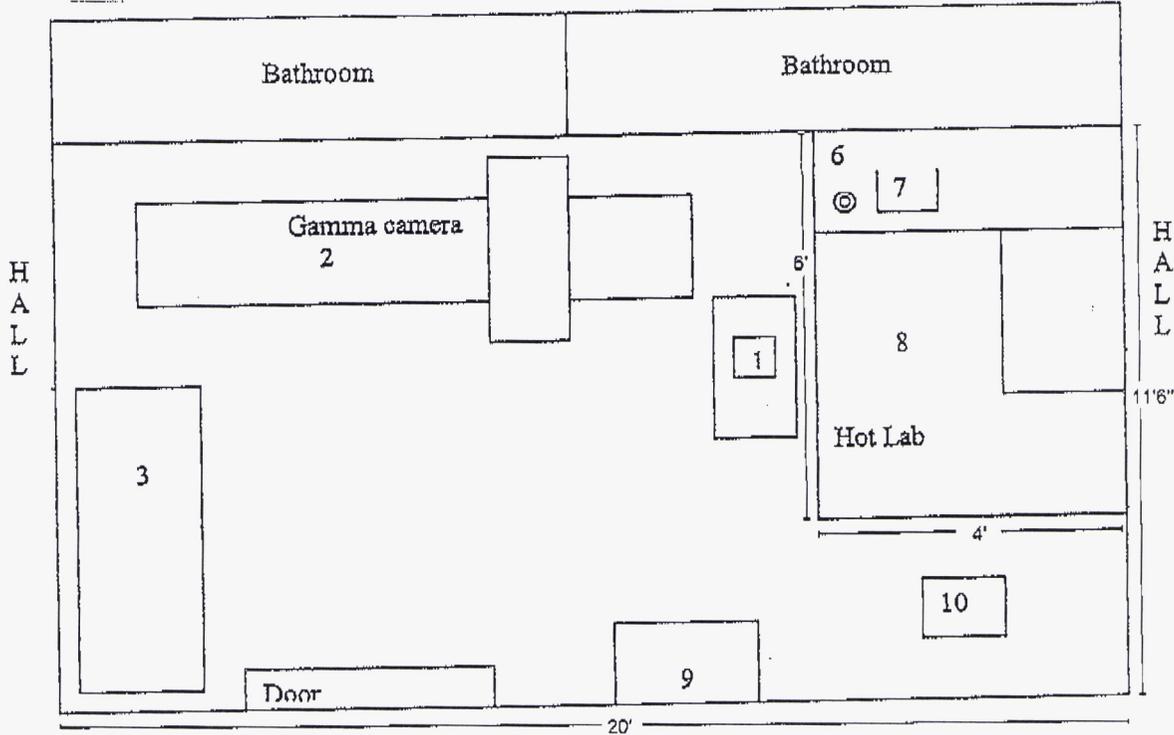


Cardiology and Vascular Associates

NRC Byproduct Material License Renewal #21-32177-01
May 2009

Security-Related Information – Withhold Under 10CFR2.390

Cardiology and Vascular Associates
1135 W. University Suite 440
Rochester Hills, MI 48307



- Key:
- 1. Nuclear Acq. Station
 - 2. Imaging Table
 - 3. Computer
 - 4. Treadmill
 - 5. Stress Room / crash cart
 - 6. Dose calibrator
 - 7. Hot Lab – shielded area – counter top
 - 8. Hot Lab Floor
 - 9. Injection Chair



Directly above the department is the roof.

Directly below the department is Ophthalmology medical practice.

4 of 7 university close out



Sealed Source Inventory

Licensee: Cardiology & Vascular Assoc.-Crittenton MOB

Date: 11-9-10

Performed by: Joe Mueller

Nuclide	Type	Calibration		Location	M/N	S/N
		Activity	Date			
Cs-137	Vial	198.5 uCi	05/01/06	Hot Lab	RV-137-200U	1145-61-19
Current Activity: 180.1 uCi						
Cs-137	Rod	0.5 uCi	03/01/06	Hot Lab	GF-0008	1159-59-71
Current Activity: 0.452 uCi						
Cs-137	Spot	1 uCi	02/06/07	Meter		608
Current Activity: 0.923 uCi						
Co-57	Flood	10 mCi	04/01/06	Hot Lab	NES 8400	1183-062
Current Activity: 0.18 mCi						

Crittenton office closed 11-9-10 all sources moved to 645 Barclay circle

Joe Mueller

SEALED SOURCE AMBIENT EXPOSURE SURVEY

Meter:

Max Reading

RADIATION SAFETY OFFICER:

Joe Mueller

5 of 7 UNIVERSITY CLOSE OUT



Sealed Source Leak Test

Licensee: Cardiology & Vascular Assoc.-Crittenton MOB

Date: 07/19/10

Performed by: Joe Mueller

Nuclide	Type	Calibration Activity	Calibration Date	Location	M/N	S/N
Cs-137	Vial	198.5 uCi	05/01/06	Hot Lab	RV-137-200U	1145-61-19
		Current Activity: 180.1 uCi				
Co-57	Flood	10 mCi	04/01/06	Hot Lab	NES 8400	1183-062
		Current Activity: 0.18 mCi				

Comment: The sources listed above were leak tested using a dry wipe technique and were found to have less than 0.005 uCi removable activity. The following Minimum Detectable Activities are based upon a background at the indicated value. Background was at or below these levels when the above tests were completed.

Well Counter: Captus 3000

Nuclide	MDA	Background
Cs-137	2.0×10^{-4} uCi	145 counts/1 min
Ba-133	8.8×10^{-5} uCi	204 counts/1 min
Co-57	1.7×10^{-5} uCi	53 counts/1 min

RADIATION SAFETY OFFICER: _____



Facility: Cardiology & Vascular Assoc.-Crittenton MOB
1135 W. University, Suite 440
Rochester MI 48307

Instrument: Manufacturer: Luldum
Type: GM
Model #: 14C
Serial #: 226161
Probe Type: E.W.
Probe Serial #: 239110

Calibration Geometry: Probe perpendicular to source, cap on.

Calibration Source: Cs-137 calibrated on 10/1/07 (+/- 3% NBS). Exposure Rate on 10/1/07: 59.1 mR/h at 1 meter. (NRC License No. 21-20153-01)

Calibration Data:

Scale	Exposure	Reading	Exposure	Reading	Correction Factor
	mR/h	mR/h	mR/h	mR/h	
x0.1	0.06	0.065	0.13	0.125	1.0
x1	0.6	0.65	1.3	1.25	1.0
x10	6	6	13	12.5	1.0
x100	60	60	130	130	1.0
x1000	300	300	700	700	1.0

Date Received: 7/21/2010 **Date Calibrated:** 7/12/2010

Check Source Reading: 0.65 mR/h Source to End window, cap off.

Battery Check: Bat. Ok

High Voltage: 908 Volts

Repairs: None

Comments: All instrument readings are within +/- 10% for all scales used.
Drift check was acceptable. Please note applicable scale correction factors in order to obtain accurate readings in mR/h.

Note: This instrument must be checked for proper operation with its dedicated check source prior to use. A reading as described above denotes proper operation.

Calibrated by:

Ryan Dzanbazoff

11809

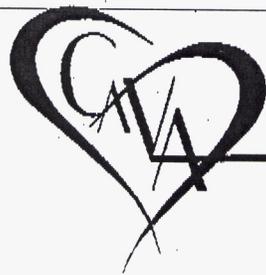
2309 Shelby Avenue
Ann Arbor, MI 48103
(734) 662-9224 Fax
(734) 662-3197

70 E. 91st Street, Suite 106
Indianapolis, IN 46240
(317) 581-1931 Fax
(317) 581-1911

4806 Mile High Drive
Salt Lake City, UT 84124
(801) 272-2952 Office & Fax

N7375 Crystal Ridge Drive
Beaver Dam, WI 53916
(920) 885-9872 Fax
(920) 885-9870

University Closeout



Cardiology and Vascular Associates, P.C.

November 19, 2010

UNITED STATES NUCLEAR REGULATORY COMMISSION
Region III, Materials Licensing Section
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Re: Close out request for NRC License # 21-32177-01

Dear Sir/Madam:

Please accept this close out request for NRC license # 21-32177-01 at the following address.

ADDRESS: 43344 Woodward, Ste 111, Bloomfield Hills, Michigan 48302

The results of the close-out are enclosed for your review.

If you have any questions or require additional information please contact myself, Joe Mueller at 248-844-1010, ext. 204.

Sincerely,

Joe Mueller, RSO
Technical Director of Nuclear Cardiology

Close-out Survey Information License

Close-out Location:

ADDRESS 43344 Woodward Ave, Ste 111, Bloomfield Hills, Michigan 48302

Date Performed: October 27, 2010

Performed By: Kathy Dowbenko, NMT and Joe Mueller, RSO

Comments: All sealed sources were properly transferred to Cardiology and Vascular Associates, P.C. 42557 Woodward Ave., Suite 100, Bloomfield Hills Michigan 48304. NRC License # 21-3217701 (Sealed source & leak test enclosed) If there are any question regarding Cardiology and Vascular Associates, PC, please contact myself, Joe Mueller at 248-396-5336

Instruments:

Wipes for contamination performed with the following well counter:

Manufacturer: Capintec
Model Number: CRC-15R
Serial Number: 153545
Efficiency Factor: 9.47 dpm/cpm

Area survey performed with the following survey meter:

Manufacturer: Ludlum
Type: GM
Model Number: Model 14 C
Serial Number: 156764
Probe Model: End Window
Calibration Date: 6/28/2010

Battery check acceptable: YES
Operational check acceptable: YES
Constancy check acceptable: YES
Check source value: 8.5 mR/h

Radionuclides Used:

Unsealed

Tc-99m and Tl-201

Special Note: No PET isotopes were ever used at this facility.

Sealed

Cs-137, Co-57, Ba-133 (leak tests attached)

Visual Check: The area was checked to ensure that all radioactive waste had been removed. No evidence of radioactive material was noted.

Radiation Level Survey: No area within the lab demonstrated radiation levels in excess of the background reading of 0.02 mR/hr.

Removable Contamination: No area within the lab demonstrated removable contamination in excess of established trigger levels.

Sealed Sources: All sealed sources were properly transferred to 42557 Woodward, Ste 100, Bloomfield Hills, MI 48304. NRC License # 21-3217701

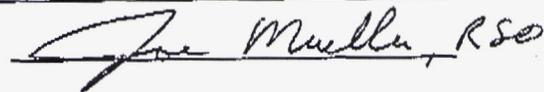
Diagrams are attached for review.

Sealed Source Leak Test Attached

Also attach close-out survey Diagram

Location	Survey Bkg	Results	Wipe Bkg	Results
1. Dose Draw area	.02 mRh	.02 mRh	368 DPM	0 DPM
2. Dose Calb	.02 mRh	.02 mRh	368 DPM	0 DPM
3. Sink in Hot Lab	.02 mRh	.02 mRh	368 DPM	0 DPM
4. RAM storage area	.02 mRh	.02 mRh	368 DPM	0 DPM
5. Hot lab floor	.02 mRh	.02 mRh	368 DPM	0 DPM
6. Injection Chair	.02 mRh	.02 mRh	368 DPM	0 DPM
7. Technologist Workstation Rm 1	.02 mRh	.02 mRh	368 DPM	0 DPM
8. Gamma Camera #1	.02 mRh	.02 mRh	368 DPM	0 DPM
9. Patient Stretcher # 1	.02 mRh	.02 mRh	368 DPM	0 DPM
10. Treadmill Stress Rm 1	.02 mRh	.02 mRh	368 DPM	0 DPM
11. Technologist Workstation Rm 2	.02 mRh	.02 mRh	368 DPM	0 DPM
12. Gamma Camera # 2	.02 mRh	.02 mRh	368 DPM	0 DPM
13. Treadmill Stress Rm 2	.02 mRh	.02 mRh	368 DPM	0 DPM
14. Patient Stretcher # 2	.02 mRh	.02 mRh	368 DPM	0 DPM

Performed By Kathy Dowbenko on October 27, 2010



Cardiology and Vascular Associates

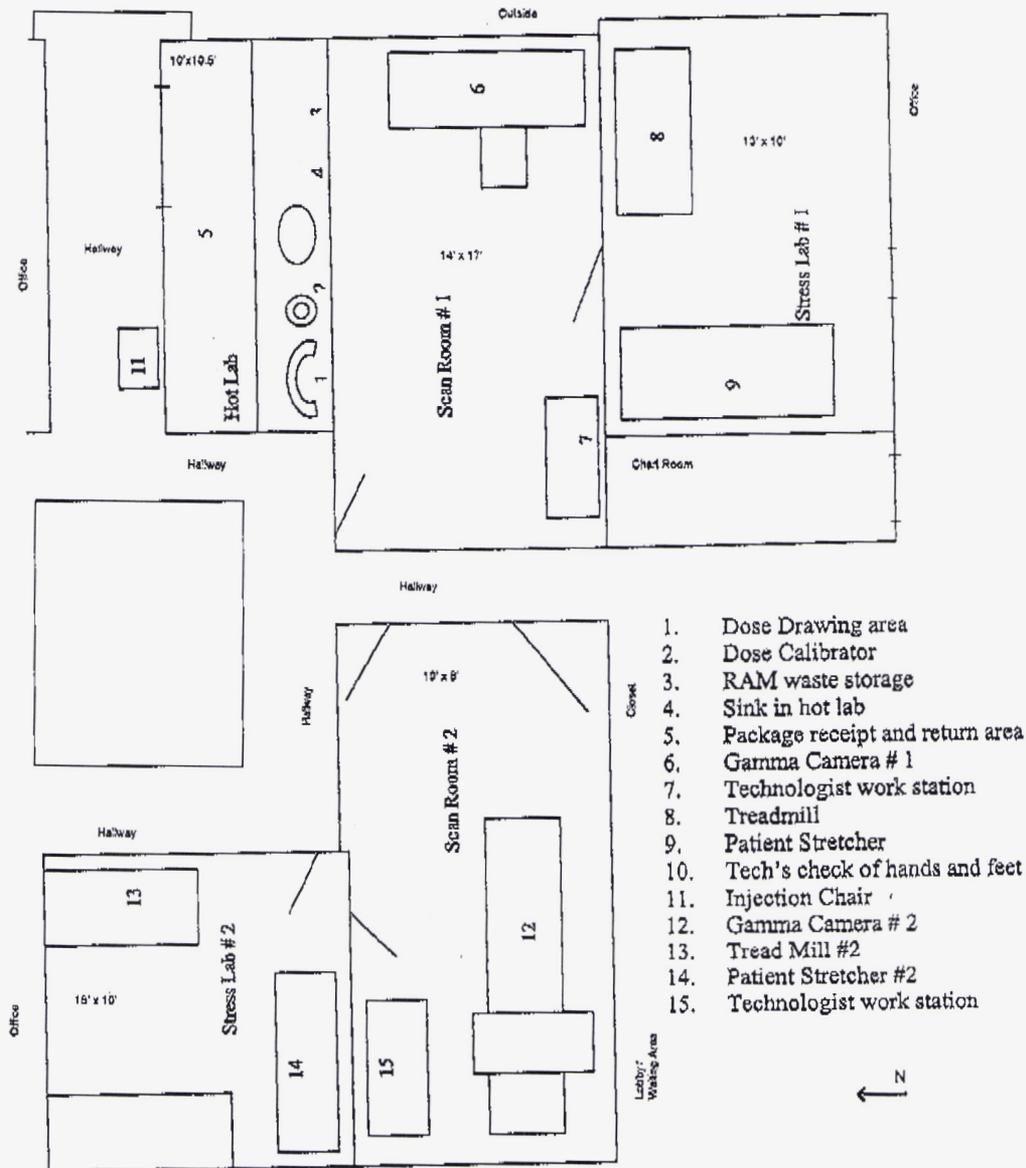
NRC Byproduct Material License Renewal #21-32177-01
May 2009

FACILITIES AND EQUIPMENT

FACILITY DIAGRAM
Security-Related Information – Withhold Under 10CFR2.390

8.15 Item 9

Cardiology and Vascular Associates
43344 Woodward Avenue
Bloomfield Hills, MI 48302



This is a single story building on a cement slab.

4 of 7 Woodward close out



Sealed Source Inventory

Licensee: Cardiology & Vascular Assoc.-Bloomfield

Date: 07/14/10

Performed by: Joe Mueller

Nuclide	Type	Calibration		Location	M/N	S/N
		Activity	Date			
Co-57	Flood	7.5 mCi	01/01/03	Hot Lab	NES-8495	939-223
Current Activity: 0.007 mCi						
Cs-137	Vial	224 uCi	06/27/98	Hot Lab	NES-356	S356037096
Current Activity: 169.6 uCi						
Ba-133	Vial	277 uCi	10/08/97	Hot Lab	NES-358	S358023075
Current Activity: 121.5 uCi						
Cs-137	Spot	1 uCi		Meter		08982851
Current Activity: uCi						
Cs-137	Rod	0.5 uCi	05/01/99	Hot Lab		644-9-3
Current Activity: 0.386 uCi						
Co-57	Flood	10 mCi	05/01/06	Hot Lab	NES-8496-10M	1155-033
Current Activity: 0.197 mCi						
Cs-137	Spot	1 uCi	09/01/02	Meter		1833
Current Activity: 0.834 uCi						
Ba-133	Vial	264.7 uCi	01/01/03	HtLabStorage IPL		934-96-1
Current Activity: 162.8 uCi						
Cs-137	Vial	203.8 uCi	12/01/02	HtLabStorage IPL		934-92-17
Current Activity: 170.9 uCi						
Cs-137	Rod	0.5 uCi	12/01/02	HtLabStorage IPL		956-54-2
Current Activity: 0.419 uCi						
Cs-137	Spot	1 uCi	09/01/02	Meter		1835
Current Activity: 0.834 uCi At another CAVA site						

SEALED SOURCE AMBIENT EXPOSURE SURVEY

Meter:

Max Reading

RADIATION SAFETY OFFICER: _____



Sealed Source Leak Test

Licensee: Cardiology & Vascular Assoc.-Bloomfield

Date: 07/15/10

Performed by: Joe Mueller

Nuclide	Type	Calibration Activity	Calibration Date	Location	M/N	S/N
Co-57	Flood	7.5 mCi	01/01/03	Hot Lab	NES-8495	939-223
Current Activity: 0.007 mCi						
Cs-137	Vial	224 uCi	06/27/98	Hot Lab	NES-356	S356037096
Current Activity: 169.6 uCi						
Ba-133	Vial	277 uCi	10/08/97	Hot Lab	NES-358	S358023075
Current Activity: 121.5 uCi						
Co-57	Flood	10 mCi	05/01/06	Hot Lab	NES-8496-10M	1155-033
Current Activity: 0.197 mCi						
Ba-133	Vial	264.7 uCi	01/01/03	HtLabStorage IPL		934-96-1
Current Activity: 162.8 uCi						
Cs-137	Vial	203.8 uCi	12/01/02	HtLabStorage IPL		934-92-17
Current Activity: 170.9 uCi						

Comment: The sources listed above were leak tested using a dry wipe technique and were found to have less than 0.005 uCi removable activity. The following Minimum Detectable Activities are based upon a background at the indicated value. Background was at or below these levels when the above tests were completed.

Well Counter: Captus 3000

Nuclide	MDA	Background
Cs-137	2.0×10^{-4} uCi	145 counts/1 min
Ba-133	8.8×10^{-5} uCi	204 counts/1 min
Co-57	1.7×10^{-6} uCi	33 counts/1 min

RADIATION SAFETY OFFICER: *Joe Mueller*

6 of 7 Woodward Closeout



Facility: Cardiology & Vascular Assoc.-Bloomfield
43344 Woodward Ave., Suite 111
Bloomfield Hills MI 48302

Instrument: Manufacturer: Ludlum
Type: GM
Model #: 14C
Serial #: 156764
Probe Type: E.W.
Probe Serial #: 159302

Calibration Geometry: Probe perpendicular to source, cap on.

Calibration Source: Cs-137 calibrated on 10/1/07 (+/- 3% NBS). Exposure Rate on 10/1/07: 59.1 mR/h at 1 meter. (NRC License No. 21-20153-01)

Calibration Data:

	Exposure	Reading	Exposure	Reading	Correction
Scale	mR/h	mR/h	mR/h	mR/h	Factor
x 0.1	0.06	0.065	0.13	0.125	1.0
x 1	0.6	0.65	1.3	1.25	1.0
x 10	6	6.5	13	13	1.0
x 100	60	60	130	130	1.0
x 1000	300	300	700	700	1.0

Date Received: 6/21/2010 **Date Calibrated:** 6/28/2010

Check Source Reading: 8.5 mR/h (Source to end window, CAP OFF.)

Battery Check: BATT TEST

High Voltage: 915 Volts

Repairs: None

Comments: All instrument readings are within +/- 10% for all scales used. Drift check was acceptable. Please note applicable scale correction factors in order to obtain accurate readings in mR/h.

Note: This instrument must be checked for proper operation with its dedicated check source prior to use. A reading as described above denotes proper operation.

Calibrated by:

Ryan Dzanbazoff
Ryan Dzanbazoff

10927

2309 Shelby Avenue
Ann Arbor, MI 48103
(734) 662-9224 Fax
(734) 662-3197

70 E. 91st Street, Suite 106
Indianapolis, IN 46240
(317) 581-1931 Fax
(317) 581-1911

4806 Mile High Drive
Salt Lake City, UT 84124
(801) 272-2952 Office & Fax

N7375 Crystal Ridge Drive
Benver Dam, WI 53916
(920) 885-9872 Fax
(920) 885-9870

645 Barclay Circle
Rochester Hills MI 48307
248-844-1010 x 204 Phone
248-844-9089 Fax
248-396-5336 Cellular

**Cardiology &
Vascular Assoc. PC**

Fax

To: US NRC **From:** Joe Mueller, RSO
Fax: 630-515-1078 **Pages:** This page only
Phone: **Date:** 11/19/2010
Re: NRC Lic. # 21-3217701 **CC:**

Urgent For Review Please Comment Please Reply Please Recycle

Dear NRC official,

Please update the mailing address for all correspondence for our Nuclear materials programs from 43344 Woodward Ave. Ste 111, Bloomfield Hills Michigan 48302 to 42557 Woodward Ave. Ste 100, Bloomfield Hills, Michigan 48304.

Sincerely



Joe Mueller

This facsimile transmission contains information, which is confidential and/or privileged. This information is intended for use only by the addressee indicated above. If you are not the intended recipient, please be advised that