



Community Healthcare System

# COMMUNITY Hospital

July 26, 2022

U.S. Nuclear Regulatory Commission  
Radioisotopes Licensing Division  
Region III  
2443 Warrenville Road, Suite 210  
Lisle, Illinois 60532-4352

RE: Radioactive Materials License #13-15882-01  
Request Release for Unrestricted Use of St. John's Clinic Area

Dear Sir or Madam:

We are requesting that our Nuclear Medicine area, located at the St. John Clinic, 9660 Wicker Ave, St. John, IN 46373, be removed from our NRC radioactive materials license and released for unrestricted use. A closeout survey was performed by James Hatten, SAHCI Senior Health Physics Consultant, and Dave Mulcahy, NMT on July 22, 2022. The survey documentation is attached.

St. John Clinic Survey Relevant Information:

1. We only used Tc99m at this location. The last patient treated was on July 14, 2022. The final decay-in-storage waste has been properly documented for disposal.
2. All sealed sources have been transferred to the main hospital. The final inventory document is attached.
3. The sealed sources greater than 100 uCi were confirmed as not leaking on April 8, 2022. The two leak test certificates are attached.
4. The survey performed covered the areas within the Hot Lab, Camera Room, and Stress Room where contamination may be present.
5. The instrumentation calibration certificates, survey meter and well counter used for this survey, are attached. The equipment used is also identified within the provided survey data.
6. The radiation signs in the facility will be removed shortly.
7. The area will remain as restricted until the release and termination is provided by the NRC.

The survey confirms that the area is free of fixed and removable contamination. The survey provides the required information and data to clearly demonstrate that the location is eligible for release for unrestricted use.

RECEIVED AUG 01 2022

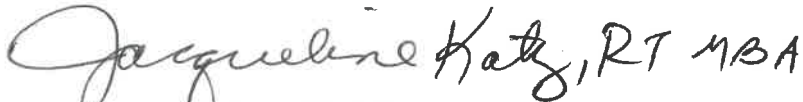
The room will be utilized as a general radiographic room once the NRC has cleared it for unrestricted use. Please consider responding to this request by September 1, 2022 so that any deficiencies with this request can be corrected, or the room can be released for unrestricted use.

Thank for your assistance with this request.

If you have any questions concerning the survey, please contact James Hatten, [jhatten@sahci.com](mailto:jhatten@sahci.com) or by phone at (815) 370-6538.

You may also contact, Santosh Kar, our RSO, at [skkar@comhs.org](mailto:skkar@comhs.org) or 219 703-1725.

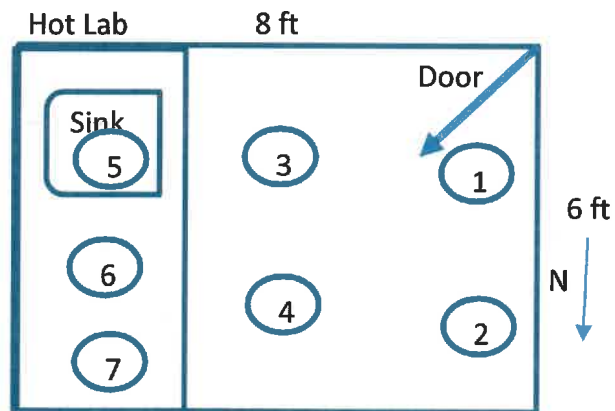
Sincerely,



Jacqueline Katz, RT, MBA  
Director Radiation Oncology and Medical Physics  
Community Healthcare System  
[jp Katz@comhs.org](mailto:jp Katz@comhs.org)  
219 703-1733 office  
219 776-3541 cell

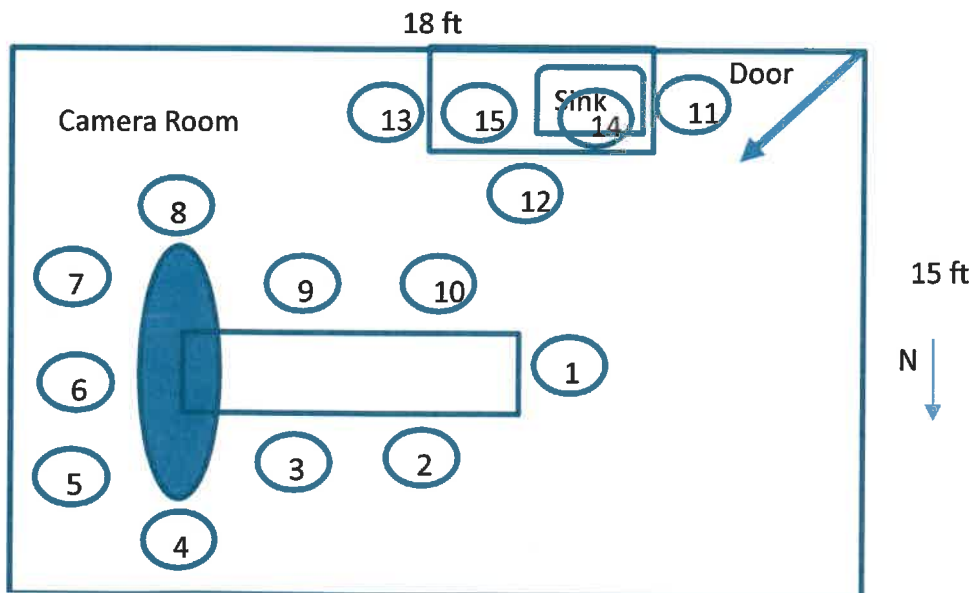
RECEIVED AUG 01 2022

St John Clinic		22-Jul-22	Surveyor: Jim Hatten	
Well Counter			Survey Meter	
Biodex Atomlab 500 SN:15010242 Cal: 21 Apr 22		Eff= 0.925	Ludlum 19 SN: 111296	
Count time=1 minute		MDA= 110	Cal: Mar 1, 2016	
Location: Hot Lab	Sample #	CPM	DPM	uR/hr
	Bkg=	452		6.00
Floor 1	1	447	0	Bkg
Floor 2	2	452	0	Bkg
Floor 3	3	460	9	Bkg
Floor 4	4	463	12	Bkg
Sink Ctr top 5	5		0	Bkg
Ctr Top 6	6		0	Bkg
Ctr Top 7	7		0	Bkg

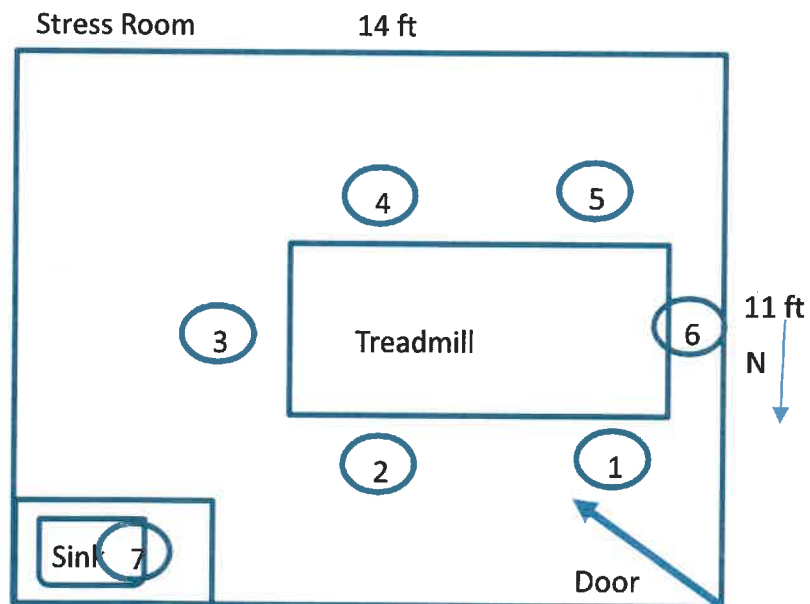


RECEIVED AUG 01 2022

St John Clinic		22-Jul-22	Surveyor: Jim Hatten	
Well Counter			Survey Meter	
Biodex Atomlab 500		Eff= 0.925	Ludlum 19 SN: 111296	
SN:15010242 Cal: 21 Apr 22		MDA= 110	Cal: Mar 1, 2016	
Count time=1 minute				
Location: Camera Room	Sample #	CPM	DPM	uR/hr
	Bkg=	452		6.00
Floor 1	1	452	0	Bkg
Floor 2	2	472	22	Bkg
Floor 3	3	446	0	Bkg
Floor 4	4	450	0	Bkg
Floor 5	5	436	0	Bkg
Floor 6	6	448	0	Bkg
Floor 7	7	436	0	Bkg
Floor 8	8	440	0	Bkg
Floor 9	9	414	0	Bkg
Floor 10	10	469	18	Bkg
Floor 11	11	424	0	Bkg
Floor 12	12	420	0	Bkg
Floor 13	13	431	0	Bkg
Sink Ctr top 14	14	452	0	Bkg
Ctr Top 15	15	463	12	Bkg



St John Clinic		22-Jul-22	Surveyor: Jim Hatten	
Well Counter			Survey Meter	
Biodex Atomlab 500		Eff= 0.925	Ludlum 19 SN: 111296	
SN:15010242 Cal: 21 Apr 22		MDA= 110	Cal: Mar 1, 2016	
Count time=1 minute				
Location: Stress Room	Sample #	CPM	DPM	uR/hr
	Bkg=	452		6.00
Floor 1	1	442	0	Bkg
Floor 2	2	456	4	Bkg
Floor 3	3	457	5	Bkg
Floor 4	4	460	9	Bkg
Floor 5	5	448	0	Bkg
Floor 6	6	450	0	Bkg
Sink Ctr top 7	7	464	13	Bkg





## Certificate of Calibration

Facility: **SAHCI**  
City/State: **NEW LENOX IL**

Calibration Date: 12/1/2021

Manufacturer: **LUDLUM**

Model No.: **19**

Serial No.: **111296**

Instrument Identification: ☒ G-M ☐ ION CHAMBER ☐ POCKET DOSIMETER ☐  
Probe Type: ☐ PANCAKE ☐ END WINDOW ☐ SIDE WINDOW ☒ External  
Window: ☐ Open ☐ Closed ☒ Fixed

### Calibration Sources

Cs-137 #1 ( $\Gamma = 0.33$ ) 0.1358 mCi  
Cs-137 #2 ( $\Gamma = 0.33$ ) 28.4620 mCi  
Co-57 ( $\Gamma = 0.9$ ) 0.6036 mCi  
Tc-99 50216 DPM

☐ Co-57 Efficiency Relative to Cs-137: 1 mR/hr = cm  
Observed mR/hr (Co-57) N/A %  
Actual mR/hr (Co-57) x 100 =

☐ Tc-99 Efficiency (4 $\pi$ )  
Observed CPM (Tc-99) N/A %  
Actual DPM (Tc-99) x 100 =

All Sources as of Date: 12/1/2021

Scale Ranges	Distances Source #1	Distances Source #2	Actual	Observed uR/hr	Within +/- 10%	Correction Factor
25	<u>1.5m</u>	<u>1740</u>	5	<u>5</u>	<u>Yes</u>	<u>1</u>
		<u>5340</u>	20	<u>20</u>		
50	<u>1.5m</u>	<u>2240</u>	10	<u>10</u>	<u>Yes</u>	<u>1</u>
		<u>9270</u>	40	<u>40</u>		
250	<u>94.2m</u>	<u>13400</u>	50	<u>50</u>	<u>Yes</u>	<u>1</u>
		<u>53900</u>	200	<u>200</u>		
500	<u>67.0m</u>	<u>22200</u>	100	<u>100</u>	<u>Yes</u>	<u>1</u>
		<u>92700</u>	400	<u>400</u>		
5000	<u>21.2m</u>		1000	<u>1000</u>	<u>Yes</u>	<u>1</u>
			4000	<u>4000</u>		

Angle of the flux field to detector (internal or external) is 90 degrees (perpendicular) and the distance is from center of source to center of detector, unless stated otherwise. Sodium Iodide front end detectors are calibrated parallel to the flux field. All Sources used for calibrations are traceable to the National Institute of Standards and Technology.

Source Set: 25, 50 Scales calibrated electronically with Pulser X #142038 or #159107

Battery Check: OK (mR/hr) or Operational Check: 50 (mR/hr) using Source in handle

Comments: from 100 scale using, \*one 1TVL lead shield, \*\*two 1TVL lead shields

Next Calibration Date: December 1, 2022

Calibrated by: [Signature]

**Stan A. Huber Consultants, Inc.**  
**200 North Cedar Road -- New Lenox, Illinois 60451**  
**Phone (815) 485-6161 -- Fax (815) 485-4433**

The information is for the identification of sources used in instrument calibrations performed by Stan A. Huber Consultants, Inc.

The following source set (A) is used by \_\_\_\_\_

Manufacturer	Radionuclide	Model No.	Serial No.	Activity	Assay Date
NAS	Cs-137	MED3550	35455	0.2051 mCi	04-1-03
Tech Ops	Cs-137	773	S389	93.3 mCi	08-25-97
IPL	Co-57	RV-057-5M	2090-8-1	5.322 mCi	08-01-19
Benchmark	Ba-133	BM06133E	13213118	282 uCi	08-13-13

The following source set (B) is used by Alfred Dadd

Manufacturer	Radionuclide	Model No.	Serial No.	Activity	Assay Date
North American Scientific	Cs-137	MED 3550	32697	0.2096 mCi	02-01-03
Tech Ops	Cs-137	773	S823	155.4 mCi	03-11-92
IPL	Co-57	RV-057-5M	2090-8-2	5.315 mCi	08-01-19
Isotope Products	Ba-133	RV-133-250U	1951-92-21	287.7 µCi	11-01-17

The following source set (C) is used by \_\_\_\_\_

Manufacturer	Radionuclide	Model No.	Serial No.	Activity	Assay Date
Isotope Products	Cs-137	MED 3550	1047-24-3	0.199 mCi	04-01-04
Tech Ops	Cs-137	77302	S-575	147.4 mCi	09-17-86
IPL	Co-57	RV-057-5M	1988-63-6	5.524 mCi	09-01-20
Eckert & Ziegler	Ba-133	RV-133-250U	2191-59-17	301.8µCi	07-16-21

The following source set (D) is used by \_\_\_\_\_

Manufacturer	Radionuclide	Model No.	Serial No.	Activity	Assay Date
NEN	Cs-137	NES-356	1366-6-2	0.203 mCi	03-01-09
JL Shepherd	Cs-137	28-5	10223	78 mCi	08-23-97
Eckert & Ziegler	Co-57	RV-057-5M	1826-77-7	5.835 mCi	01-01-16

Manufacturer	Radionuclide	Model No.	Serial No.	Activity	Assay Date
Eckert & Ziegler	Tc-99 #1	EAB-099-32U	K4-528	22.62 nCi	06-01-13
Eckert & Ziegler	Tc-99 #2	EAB-099-32U	N2-594	24.37 nCi	02-15-16

Pulser

Manufacturer	Model No.	Serial No.
Ludlum	500	142038
Ludlum	500-2	159107

Updated 8-3-21

# STAN A. HUBER CONSULTANTS, INC.

200 NORTH CEDAR ROAD -- NEW LENOX IL 60451-1751 -- PHONE 815-485-6161

## SEALED GAMMA/BETA SOURCES - LEAK TEST CERTIFICATE

REPORT DATE: 4/15/2022  
FACILITY: Community Hospital - St. John Clinic  
Munster, IN

NRC LICENSE NUMBER: 13-15882-01  
STATE LICENSE NUMBER:

### SOURCE IDENTIFICATION:

RADIONUCLIDE: Cs-137  
ACTIVITY: 213.9 uCi  
CALIBR. DATE: 6/1/2015  
MANUFACTURER: IPL  
MODEL NUMBER: RV-137-200U  
SERIAL NUMBER: 1816-33-14  
OTHER DESCRIPTION: St. John Constaney

### ASSAY RESULTS:

COUNTING EFFICIENCY: 0.267  
BACKGROUND AT TIME OF ASSAY (CPM): 107  
LLD (uCi): 0.00009

	MAX CPM	NET CPM	DPM	ACTIVITY uCi
WET WIPE	89	0	<LLD	<LLD
DRY WIPE	88	0	<LLD	<LLD

### ANALYSIS PERFORMED USING:

Packard Auto-Gamma Scintillation Spectrometer Model #D5003 Serial #406282 AND/OR  
Packard 1900CA Tri-Carb Liquid Scintillation Analyzer Model #A1900 Serial #101464

### ANALYSIS OF RESULTS:

Sources are not leaking at this time  
Removable contamination is less than 5E-3 uCi. (0.005)

NEXT LEAK TEST DUE BY: October 8, 2022

LEAK TEST PERFORMED BY: Jeremy Kieser (SAHCI) DATE: 04/08/22

ANALYSIS PERFORMED BY: Jeremy Kieser DATE: 04/13/22

RADIATION SAFETY OFFICER SIGNATURE: \_\_\_\_\_



# STAN A. HUBER CONSULTANTS, INC.

200 NORTH CEDAR ROAD – NEW LENOX IL 60451-1751 – PHONE 815-485-6161

## SEALED GAMMA/BETA SOURCES - LEAK TEST CERTIFICATE

REPORT DATE: 4/15/2022

FACILITY: Community Hospital - St. John Clinic  
Munster, IN

NRC LICENSE NUMBER: 13-15882-01  
STATE LICENSE NUMBER:

SOURCE IDENTIFICATION:

RADIONUCLIDE: Co-57  
ACTIVITY: 10 mCi  
CALIBR. DATE: 3/1/2022  
MANUFACTURER: Eckert & Ziegler  
MODEL NUMBER: FL24R  
SERIAL NUMBER: 2293-133  
OTHER DESCRIPTION:

### ASSAY RESULTS:

COUNTING EFFICIENCY: 0.925  
BACKGROUND AT TIME OF ASSAY (CPM): 69  
LLD (uCi): 0.00002

	MAX CPM	NET CPM	DPM	ACTIVITY uCi
WET WIPE	56	0	<LLD	<LLD
DRY WIPE	49	0	<LLD	<LLD

### ANALYSIS PERFORMED USING:

Packard Auto-Gamma Scintillation Spectrometer Model #D5003 Serial #406282 AND/OR  
Packard 1900CA Tri-Carb Liquid Scintillation Analyzer Model #A1900 Serial #101464

### ANALYSIS OF RESULTS:

Sources are not leaking at this time  
Removable contamination is less than  $5E-3$  uCi. (0.005)

NEXT LEAK TEST DUE BY: October 8, 2022

LEAK TEST PERFORMED BY: Jeremy Kieser (SAHCI) DATE: 04/08/22

ANALYSIS PERFORMED BY: Jeremy Kieser DATE: 04/13/22

RADIATION SAFETY OFFICER SIGNATURE: \_\_\_\_\_

**STAN A. HUBER CONSULTANTS, INC.**  
**200 NORTH CEDAR ROAD, NEW LENOX, IL 60451-1751**  
**PHONE (815)485-6161**

4/21/2022

**Certificate of Calibration for Well Counter**

FACILITY:  
Community Hospital

CITY:  
Munster

STATE:  
IN

**INSTRUMENT IDENTIFICATION**

MANUFACTURER: Biodex      MODEL #: AtomLab 500      SERIAL #: 15010242

**SOURCE IDENTIFICATION**

MANUFACTURER: E&Z      MODEL #: GF-0208      SERIAL #: 1771-53-3  
ISOTOPE: Co-57      ACTIVITY: 2264400 dpm      DATE: 01-Sep-20  
CURRENT ACTIVITY: 494027 dpm

**CHI-SQUARE DETERMINATION:**

Certification Date: 21-Apr-22

Utilized internal counter to obtain Chi-Square value

The Chi-Square value 10.3 is between the values of 3.3 and 17.0 and is, therefore, acceptable.

**EFFICIENCY DETERMINATION**

Background  
580 cpm

Total cpm  
457587 cpm

NET CPM=TOTAL CPM-BKG CPM

%EFF=NET CPM/DPM \*100

457007 NET CPM

0.925

EFF

The Efficiency of the Detector is 0.925 or 92.5 %

**LOWER LIMIT OF DETECTION (LLD)**

$$LLD = 3 + 4.65 \sqrt{\frac{\text{Background rate}}{\text{Sample Count Rate} \times \text{EFFICIENCY}}} = 3 + 4.65 \sqrt{\frac{580 \text{ cpm}}{1 \text{ min} \times 0.925}}$$

LLD= 124 DPM or 5.6E-05 uCi

CALIBRATED BY: Jeremy Kieser

NEXT CALIBRATION DATE: Apr-23

**STAN A. HUBER CONSULTANTS, INC.**  
**200 NORTH CEDAR ROAD, NEW LENOX, IL 60451-1751**  
**PHONE (815)485-6161**

4/21/2022

**Certificate of Calibration for Well Counter**

FACILITY:  
Community Hospital

CITY:  
Munster

STATE:  
IN

**INSTRUMENT IDENTIFICATION**

MANUFACTURER: Biodex

MODEL #: Atomlab 500+

SERIAL #: 2008569

**SOURCE IDENTIFICATION**

MANUFACTURER: IPL

MODEL #: Rod

SERIAL #: 757-65

ISOTOPE: Cs-137

ACTIVITY: 1110000 dpm

DATE: 01-Oct-01

CURRENT ACTIVITY: 692004 dpm

**CHI-SQUARE DETERMINATION:**

Certification Date: 21-Apr-22

**COUNTS**

1	43801
2	43514
3	43911
4	43467
5	43391
6	43458
7	43668
8	43387
9	43647
10	43590

$$\chi^2 = \frac{(n-1)s^2}{X}$$

$$(n-1) = 9$$

$$s^2 = 30622$$

$$\bar{X} = 43583$$

$$\chi^2 = 6.3$$

The Chi-Square value 6.2 is between the values of 3.3 and 17.0 and is, therefore, acceptable.

**EFFICIENCY DETERMINATION**

Background  
1342 cpm

Total cpm  
261920 cpm

NET CPM=TOTAL CPM-BKG CPM

%EFF=NET CPM/DPM \*100

260578 NET CPM

0.377

EFF

The Efficiency of the Detector is 0.377 or 37.7 %

**LOWER LIMIT OF DETECTION (LLD)**

$$LLD = 3 + 4.65 \sqrt{\frac{\text{Background rate}}{\text{Sample Count Rate} \times \text{EFFICIENCY}}} = 3 + 4.65 \sqrt{\frac{1342 \text{ cpm}}{1 \text{ min} \times 0.377}}$$

LLD= 460 DPM or 2.1E-04 uCi

CALIBRATED BY:

Jeremy Kieser  
Jeremy Kieser

NEXT CALIBRATION DATE: Apr-23

**STAN A. HUBER CONSULTANTS, INC.**  
**200 NORTH CEDAR ROAD, NEW LENOX, IL 60451-1751**  
**PHONE (815)485-6161**

4/21/2022

**Certificate of Calibration for Well Counter**

FACILITY:  
Community Hospital

CITY:  
Munster

STATE:  
IN

**INSTRUMENT IDENTIFICATION**

MANUFACTURER: Biodex

MODEL #: Atomlab 500+

SERIAL #: 2008569

**SOURCE IDENTIFICATION**

MANUFACTURER: IPL

MODEL #: Rod

SERIAL #: 2076-56-5

ISOTOPE: Co-57

ACTIVITY: 2264400 dpm

DATE: 01-Sep-20

CURRENT ACTIVITY: 494027 dpm

**CHI-SQUARE DETERMINATION:**

Certification Date: 21-Apr-22

**COUNTS**

1	43801
2	43514
3	43911
4	43467
5	43391
6	43458
7	43668
8	43387
9	43647
10	43590

$$\chi^2 = \frac{(n-1)s^2}{X}$$

$$(n-1) = 9$$

$$s^2 = 30622$$

$$\bar{X} = 43583$$

$$\chi^2 = 6.3$$

The Chi-Square value 6.2 is between the values of 3.3 and 17.0 and is, therefore, acceptable.

**EFFICIENCY DETERMINATION**

Background  
1342 cpm

Total cpm  
463637 cpm

NET CPM=TOTAL CPM-BKG CPM

%EFF=NET CPM/DPM \*100

462295 NET CPM

0.936

EFF

The Efficiency of the Detector is 0.936 or 93.6 %

**LOWER LIMIT OF DETECTION (LLD)**

$$LLD = 3 + 4.65 \sqrt{\frac{\text{Background rate}}{\text{Sample Count Rate} \times \text{EFFICIENCY}}} = 3 + 4.65 \sqrt{\frac{1342 \text{ cpm}}{1 \text{ min} \times 0.936}}$$

LLD= 185 DPM or 8.3E-05 uCi

CALIBRATED BY:

  
Jeremy Kieser

NEXT CALIBRATION DATE: Apr-23

### Quarterly Physical Inventory & Area Survey of Sealed Sources

Facility: Community Hospital – St John Clinic

Address: 9660 Wicker Avenue – St. John, Indiana

Definition: Code of Federal Regulations, Title, 35.67(g). A Licensee in possession of a sealed source shall conduct a semiannual physical inventory of all such sources in its possession. The licensee shall retain each inventory record for three (3) years. The inventory record must contain the model number of each source, and serial number if one has been assigned, the identity of each source radionuclide and its nominal activity, the location of each source, and the signature of the Radiation Safety Officer.

Nuclide	Mfg.	Model No. or Description	Serial No.	Original Activity	Calibration Date	Source Location	Date	Initial
Cs-137	IPL	RV-137-200U	1816-33-14	213.9 µCi	6/1/15	St. John's Hot Lab	7/22/22	JCH
Cs-137	IPL	GF-0206	1795-24-4	102.3 nCi	6/1/15	St. John's Hot Lab	7/22/22	JCH
Cs-137	Spectrum	Button	1612	1µCi	1/31/15	Attached to SM 317287	7/22/22	JCH
Co-57	E&Z	FL24R	2293-133	10 mCi	3/1/22	St. John Hot Lab	7/19/22	****

#### Survey Meter Ops Checks:

Ludlum 14C Serial 317287 (St John)

Calibration: 0.8

Actual: 0.8

Month: July Year: 2022

Inventory performed by James Hatten, SAHCI Senior Health Physics Consultant

All radioactive material and survey meter (with exempt check source) transferred to main hospital.

\*\*\*\*Co-57 xferred by Cardinal Health on Jul 19, 2022.\*\*\*\*

Cs-137 packaged as UN2910 packaged and transferred to the main hospital by James Hatten, SAHCI.

Reviewed by Radiation Safety Officer: \_\_\_\_\_