



Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87E13-48 Activity: 0.02 units: µci Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RCT Date: 12/1/15 Time: 0930

4. Site or Location:

Site/Job: 4.5 Location Description: FIELD  
 GPS Coordinates (when required): X-Coord: N 42° 31' 58.6" Y-Coord: W 079° 00' 58.1"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l Info: Inst. Condition, etc.)
Ratemeter	1	5456 cpm	1	17679 cpm	Y	Y	Y	0930	49.1	Th 232 SK
Ratemeter	1	5456 cpm	1	9125 cpm	Y	Y	Y	0930	49.1	Cs 137 SK
Ratemeter	1	7755 cpm	1	20128 cpm	Y	Y	Y	1230	52.3	Th 232 SK
Ratemeter	1	7755 cpm	1	11356 cpm	Y	Y	Y	1230	52.3	Cs 137 SK
Ratemeter	1	5795 cpm	1	18280 cpm	Y	Y	Y	1530	53.2	Th 232 SK
Ratemeter	1	5795 cpm	1	9520 cpm	Y	Y	Y	1530	53.2	Cs 137 SK
Bicron	NA	3 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0930	49.1	Th 232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1230	52.3	Th 232 SK
Bicron	NA	4 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1530	53.2	Th 232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 3241-2 Serial No. 206098 Cal. Due Date: 07/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 40.1 units: µC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm +20% 53799 net cpm -20% 35366  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: µC Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm +20% 13273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/01/15 Time: 0930

**4. Site or Location:**

Site/Job: Area 4.5 Location Description: Woods  
 GPS Coordinates (when required): X-Coord: N 42° 31' 51.102" Y-Coord: W 78° 58' 44.048"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	7112 cpm	1 min	44264 cpm	Y	Y	Y	0935	49.1°	Th-232 DE
Ratemeter	1 min	7112 cpm	1 min	8984 cpm	Y	Y	Y	1141	49.2°	Cs-137 DE
Ratemeter	1 min	8664 cpm	1 min	46307 cpm	Y	Y	Y	1220	52.3°	Th-232 DE
Ratemeter	1 min	8664 cpm	1 min	10798 cpm	Y	Y	Y	1225	52.5°	Cs-137 DE
Ratemeter	1 min	6467 cpm	1 min	43667 cpm	Y	Y	Y	1529	53.7°	Th-232 DE
Ratemeter	1 min	6467 cpm	1 min	8859 cpm	Y	Y	Y	1524	53.2°	Cs-137 DE
Bicron	NA	6 µrem/hr	NA	40 µrem/hr	Y	Y	Y	0931	49.5°	Th-232 DE
Bicron	NA	6 µrem/hr	NA	30 µrem/hr	Y	Y	Y	1215	52.3°	Th-232 DE
Bicron	NA	5 µrem/hr	NA	30 µrem/hr	Y	Y	Y	1520	54.1°	Th-232 DE

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 200098 Cal. Due Date: 09/01/15  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR12043  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.1 units: uCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53798 net cpm -20% 35826  
 Source 2 Isotope: Cs-137 Serial No.: 119E2312 Activity: 0.02 units: uCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/2/15 Time: 0805

4. Site or Location:

Site/Job: Area 4.5 Location Description: woods  
 GPS Coordinates (when required): X-Coord: N 42° 31' 51.102" Y-Coord: W 78° 55' 44.048"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	6336 cpm	1 min	42215 cpm	Y	Y	Y	0810	42.0°	Th-232 JE
Ratemeter	1 min	6336 cpm	1 min	5892 cpm	Y	Y	Y	0818	42.4°	Cs-137 JE
Ratemeter	1 min	6556 cpm	1 min	43174 cpm	Y	Y	Y	1115	45.0°	Th-232 JE
Ratemeter	1 min	6556 cpm	1 min	5895 cpm	Y	Y	Y	1120	45.2°	Cs-137 JE
Ratemeter	1 min	7120 cpm	1 min	44215 cpm	Y	Y	Y	1533	46.0°	Th-232 JE
Ratemeter	1 min	7120 cpm	1 min	9137 cpm	Y	Y	Y	1537	45.8°	Cs-137 JE
Bicron	NA	7 uRem/hr	NA	40 uRem/hr	Y	Y	Y	1400	44.0°	Th-232 JE
Bicron	NA	6 uRem/hr	NA	50 uRem/hr	N	N	Y	1527	46.0°	Th-232 JE
Bicron	NA	NA	NA	12/02/15 JE						

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Rev 1 10/18/15

Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87E13-48 Activity: 0.02 units: µci Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RCT Date: 12/2/15 Time: 0815

4. Site or Location: Site/Job: 4.2

Location Description: WOODS

GPS Coordinates (when required): X-Coord: 78°59'50.5"W Y-Coord: 42°32'28.4"N @ environment dept building

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (MIN)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (MIN)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	7995 cpm	1	20278 cpm	Y	Y	Y	0830	45.8	Th232 SK
Ratemeter	1	7995 cpm	1	11700 cpm	Y	Y	Y	0830	45.8	Cs137 SK
Ratemeter	1	7861 cpm	1	20365 cpm	Y	Y	Y	1230	45.1	Th232 SK
Ratemeter	1	7861 cpm	1	11637 cpm	Y	Y	Y	1230	45.1	Cs137 SK
Ratemeter	1	6007 cpm	1	18677 cpm	Y	Y	Y	1530	44.6	Th232 SK
Ratemeter	1	6007 cpm	1	9588 cpm	Y	Y	Y	1530	44.6	Cs137 SK
Bicron	NA	5 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0830	45.8	Th232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1230	45.1	Th232 SK
Bicron	NA	4 uRem/hr	NA	16 uRem/hr	Y	Y	Y	1530	44.6	Th232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 226698 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. NA Cal. Due Date: NA

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 0.1 units: NC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 53798 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: NC Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 5849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/03/15 Time: 0830

4. Site or Location:

Site/Job: Area 4.2 Location Description: woods  
 GPS Coordinates (when required): X-Coord: N 71° 52.422 " Y-Coord: W 079° 02.917 "

Instrument Field Response <sup>2</sup>				Use Acceptance Criteria				Remarks		
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	9949 cpm	1 min	45127 cpm	Y	Y	Y	0839	37.3°	Th-232 JE
Ratemeter	1 min	9949 cpm	1 min	11611 cpm	N	Y	Y	0845	37.5°	Cs-137 JE
Ratemeter	1 min	10488 cpm	1 min	46522 cpm	Y	Y	Y	1051	42.2°	Th-232 JE
Ratemeter	1 min	10488 cpm	1 min	11951 cpm	Y	Y	Y	1056	42.0°	Cs-137 JE
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: Tari Brown Title: RCT Date: 12-3-15 Time: 0830

4. Site or Location:

Site/Job: 4.2 Location Description: Field  
 GPS Coordinates (when required): X-Coord: N 12°32' 46" Y-Coord: W 75°02' 09.13"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add: info: inst. Condition, etc.)
Ratemeter	1	8212 cpm	1	20,321 cpm	Y	Y	Y	0830	43.8	Th 232 TB
Ratemeter	1	8212 cpm	1	11,887 cpm	Y	Y	Y	0830	43.8	Cs 137 TB
Ratemeter	1	8115 cpm	1	20522 cpm	Y	Y	Y	1115	44.6	Th 232 SK
Ratemeter	1	8115 cpm	1	11640 cpm	Y	Y	Y	1115	44.6	Cs 137 SK
Ratemeter			N/A			N/A				
Ratemeter			N/A			N/A				
Bicron	NA	6 uRem/hr	NA	15 uRem/hr	Y	Y	Y	0830	43.8	Th 232 TB
Bicron	NA	5 uRem/hr	NA	16 uRem/hr	Y	Y	Y	1115	44.6	Th 232 SK
Bicron	NA	N/A	NA	N/A			N/A			

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. FR112642 Cal. Due Date: 06/18/16  
 Bicron MicroRem Meter: Serial No. 1487

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 40.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm +20% 53795 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: µCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm +20% 13273 net cpm -20% 5849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/07/15 Time: 0855

4. Site or Location:

Site/Job: Area 4.1 Location Description: woods  
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	9196 cpm	1 min	43110 cpm	Y	Y	Y	0857	33.3°	Th-232 JE
Ratemeter	1 min	9196 cpm	1 min	11177 cpm	Y	Y	Y	0903	33.5°	Cs-137 JE
Ratemeter	1 min	11265 cpm	1 min	46744 cpm	Y	Y	Y	1111	39.2°	Th-232 JE
Ratemeter	1 min	11265 cpm	1 min	13173 cpm	Y	Y	Y	1116	39.4°	Cs-137 JE
Ratemeter	1 min	11333 cpm	1 min	48191 cpm	Y	Y	Y	1307	44.1°	Th-232 JE
Ratemeter	1 min	11333 cpm	1 min	13057 cpm	Y	Y	Y	13	44.0°	Cs-137 JE
Bicron	NA	5 uRem/hr	NA	40 uRem/hr	Y	Y	Y	1107	38.2°	Th-232 JE
Bicron	NA	7 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1304	44.1°	Th-232 JE
Bicron	NA		NA	JE 12/07/15						

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Instrument Field Response Check Log

1. Instrument Information

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RCT Date: 12/7/15 Time: 0900

4. Site or Location:

Site/Job: 4.5 Location Description: WOODS/BLUSH  
 GPS Coordinates (when required): X-Coord: N42°32'28.4" Y-Coord: W078°59'50.7"

Instrument Field Response					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time OI check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. condition, etc.)
Ratemeter	1	8455 cpm	1	21187 cpm	Y	Y	Y	0900	35.2	Th232 SK
Ratemeter	1	8455 cpm	1	11962 cpm	Y	Y	Y	0900	35.2	Cs137 SK
Ratemeter	1	8098 cpm	1	20712 cpm	Y	Y	Y	1230	41.5	Th232 SK
Ratemeter	1	8198 cpm	1	11414 cpm	Y	Y	Y	1230	41.5	Cs137 SK
Ratemeter	1	8053 cpm	1	20458 cpm	Y	Y	Y	1500	41.1	Th232 SK
Ratemeter	1	8053 cpm	1	11878 cpm	Y	Y	Y	1500	41.1	Cs137 SK
Bicron	NA	5 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0900	35.2	Th232 SK
Bicron	NA	4 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1230	41.5	Th232 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1500	41.1	Th232 SK

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability.





Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 200098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 0.01 units: MC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53795 net cpm -20% 35820  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: MC Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 15275 net cpm -20% 849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/08/15 Time: 0850

4. Site or Location:

Site/Job: Area 4.1 / SED Location Description: woods / parking lot  
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 58.352"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	8629 cpm	1 min	43644 cpm	Y	Y	Y	0855	38.5°	Th-232 DE
Ratemeter	1 min	8629 cpm	1 min	10659 cpm	Y	Y	Y	0900	36.5°	Cs-137 DE
Ratemeter	1 min	11682 cpm	1 min	47939 cpm	Y	Y	Y	1058	37.2°	Th-232 DE
Ratemeter	1 min	11682 cpm	1 min	13124 cpm	Y	Y	Y	1103	37.3°	Cs-137 DE
Ratemeter	1 min	9641 cpm	1 min	46245 cpm	Y	Y	Y	1514	45.7°	Th-232 DE
Ratemeter	1 min	9641 cpm	1 min	11346 cpm	Y	Y	Y	1520	45.5°	Cs-137 DE
Bicron	NA	9 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1107	37.3°	Th-232 DE
Bicron	NA	7 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1510	45.7°	Cs-137 DE
Bicron	NA		NA							12/08/15

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 200098 Cal. Due Date: 07/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR12642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/19/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.1 units: uCi Assay Date: 12/30/15  
 Response Acceptance Range (+/- 20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 55798 net cpm -20% 35860  
 Source 2 Isotope: Cs-137 Serial No.: 119E2342 Activity: 0.02 units: uCi Assay Date: NA  
 Response Acceptance Range (+/- 20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/07/15 Time: 0850

**4. Site or Location:**

Site/Job: SED / Area 4.1 Location Description: Parking lot / woods  
 GPS Coordinates (when required): X-Coord: N 42° 22' 37.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	8718 cpm	1 min	45240 cpm	Y	Y	Y	0854	44.1°	Th-232 DE
Ratemeter	1 min	8718 cpm	1 min	10344 cpm	Y	Y	Y	0900	44.2°	Cs-137 DE
Ratemeter	1 min	10071 cpm	1 min	46291 cpm	Y	Y	Y	1120	55.2°	Th-232 DE
Ratemeter	1 min	10071 cpm	1 min	12136 cpm	Y	Y	Y	1130	55.4°	Cs-137 DE
Ratemeter	1 min	10052 cpm	1 min	45769 cpm	Y	Y	Y	1502	56.7°	Th-232 DE
Ratemeter	1 min	10052 cpm	1 min	12135 cpm	Y	Y	Y	1458	56.9°	Cs-137 DE
Bicron	NA	7 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1123	52.2°	Th-232 DE
Bicron	NA	6 uRem/hr	NA	36 uRem/hr	Y	Y	Y	1451	56.7°	Th-232 DE
Bicron	NA		NA	DE 12/07/15						

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-18 Serial No. FR112692 Cal. Due Date: 06/18/16  
 Bicron MicroRem Meter: Serial No. 1457

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.5 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53798 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E2312 Activity: 0.02 units: µCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/10/15 Time: 0855

**4. Site or Location:**

Site/Job: SED / Area 4.1 Location Description: parking lot / woods  
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.772" Y-Coord: W 78° 59' 50.352"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	8875 cpm	1 min	43599 cpm	Y	Y	Y	0903	43.5°	Th-232 JE
Ratemeter	1 min	8575 cpm	1 min	16497 cpm	Y	Y	Y	0908	43.7°	Cs-137 JE
Ratemeter	1 min	9015 cpm	1 min	46870 cpm	Y	Y	Y	1213	52.0°	Th-232 JE
Ratemeter	1 min	9015 cpm	1 min	11113 cpm	Y	Y	Y	1220	52.3°	Cs-137 JE
Ratemeter	1 min	9031 cpm	1 min	43789 cpm	Y	Y	Y	1503	53.7°	Th-232 JE
Ratemeter	1 min	9031 cpm	1 min	11532E 12/10/15	Y	Y	Y	1507	53.7°	Cs-137 JE
Bicron	NA	6 µrem/hr	NA	3 µrem/hr	Y	Y	Y	0916	43.7°	Th-232 JE
Bicron	NA	8 µrem/hr	NA	40 µrem/hr	Y	Y	Y	1216	52.0°	Th-232 JE
Bicron	NA	7 µrem/hr	NA	38 µrem/hr	Y	Y	Y	1509	53.6°	Th-232 JE

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm +20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm +20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KUSMAN Title: RET Date: 12/10/15 Time: 0900

4. Site or Location:

Site/Job: 4.1 Location Description: WOODS  
 GPS Coordinates (when required): X-Coord: N 42° 32' 28.3" Y-Coord: W 78° 59' 50.9"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (m/s)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (m/s)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Callb. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	7913 cpm	1	20445 cpm	Y	Y	Y	0700	42.3	Th 232 SK
Ratemeter	1	7913 cpm	1	11559 cpm	Y	Y	Y	0700	42.3	Cs 137 SK
Ratemeter	1	8236 cpm	1	20445 cpm	Y	Y	Y	1230	54.5	Th 232 SK
Ratemeter	1	8236 cpm	1	<del>20445</del> 11879 cpm	Y	Y	Y	1230	54.5	Cs 137 SK
Ratemeter	1	8509 cpm	1	21117 cpm	Y	Y	Y	1500	52.8	Th 232 SK
Ratemeter	1	8509 cpm	1	12123 cpm	Y	Y	Y	1500	52.8	Cs 137 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0900	42.3	Th 232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1230	54.5	Th 232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1500	52.8	Th 232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 224-2 Serial No. 206098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 0.1 units: µCi Assay Date: 12/30/16  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53778 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E3-12 Activity: 0.02 units: µCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: PCT Date: 12/11/15 Time: 0858

**4. Site or Location:**

Site/Job: SED / Area 52 Location Description: parking lot / woods  
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	8844 cpm	1min	45233 cpm	Y	Y	Y	0908	54.1°	Th-232 JE
Ratemeter	1min	8844 cpm	1min	10775 cpm	Y	Y	Y	0909	54.2°	Cs-137 JE
Ratemeter	1min	8435 cpm	1min	42589 cpm	Y	Y	Y	1304	57.3°	Th-232 JE
Ratemeter	1min	8435 cpm	1min	10451 cpm	Y	Y	Y	1308	57.5°	Cs-137 JE
Ratemeter	1min	7749 cpm	1min	45076 cpm	Y	Y	Y	1440	59.1°	Th-232 JE
Ratemeter	1min	7749 cpm	1min	9475 cpm	Y	Y	Y	1449	59.1°	Cs-137 JE
Bicron	NA	6 µrem/hr	NA	30 µrem/hr	Y	Y	Y	0905	54.2°	Th-232 JE
Bicron	NA	6 µrem/hr	NA	35 µrem/hr	Y	Y	Y	1257	57.3°	Th-232 JE
Bicron	NA	5 µrem/hr	NA	30 µrem/hr	Y	Y	Y	1445	59.0°	Th-232 JE

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87E13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KUSMAN Title: RET Date: 12/11/15 Time: 0900

4. Site or Location:

Site/Job: S-2 Location Description: WOODS  
 GPS Coordinates (when required): X-Coord. N 42° 32' 30.0" Y-Coord: W 79° 59' 74.9"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	initials and Comments (add: Info: Inst. Condition, etc.)
Ratemeter	1.0	7770 cpm	1	19788 cpm	Y	Y	Y	0900	53.0	Th 232 SK
Ratemeter	1	7770 cpm	1	11315 cpm	Y	Y	Y	0900	53.0	Cs 137 SK
Ratemeter	1	7874 cpm	1	20148 cpm	Y	Y	Y	1300	61.3	Th 232 SK
Ratemeter	1	7874 cpm	1	11267 cpm	Y	Y	Y	1300	61.3	Cs 137 SK
Ratemeter	1	6915 cpm	1	19544 cpm	Y	Y	Y	1500	59.0	Th 232 SK
Ratemeter	1	6915 cpm	1	10359 cpm	Y	Y	Y	1500	59.0	Cs 137 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	0900	53.0	Th 232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1300	61.3	Th 232 SK
Bicron	NA	5 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1500	59.0	Th 232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





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Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No: 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No: FR111127  
 Bicron MicroRem Meter: Serial No: A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: uCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20%: 20 uRem/hr -20%: 14 net cpm + 20%: 22926 net cpm -20%: 15284

Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: uCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20%: \_\_\_\_\_ uRem/hr -20%: \_\_\_\_\_ net cpm + 20%: 13375 net cpm -20%: 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RC Date: 12/14/15 Time: 0800

4. Site or Location:

Site/Job: S.I Location Description: WOODS

GPS Coordinates (when required): X-Coord: \_\_\_\_\_ Y-Coord: \_\_\_\_\_

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	7642 cpm	1	19887 cpm	Y	Y	Y	0815	60.4	Th232 SK
Ratemeter	1	7642 cpm	1	11368 cpm	Y	Y	Y	0815	60.4	Cs137 SK
Ratemeter	1	7797 cpm	1	20369 cpm	Y	Y	Y	1230	69.8	Th232 SK
Ratemeter	1	7797 cpm	1	11539 cpm	Y	Y	Y	1230	69.8	Cs137 SK
Ratemeter	1	7156 cpm	1	19588 cpm	Y	Y	Y	1430	68.6	Th232 SK
Ratemeter	1	7156 cpm	1	10489 cpm	Y	Y	Y	1430	68.6	Cs137 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	0815	60.4	Th232 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1230	69.8	Th232 SK
Bicron	NA	8 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1430	68.6	Th232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate changes significantly, perform additional counts to evaluate instrument stability

**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: LuLuon 224-2 Serial No. 200048 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: LuLuon 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 6/18/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.1 units: uCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net.cpm + 20% 53798 net.cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: uCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net.cpm + 20% 13273 net.cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/4/15 Time: 0811

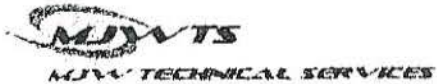
**4. Site or Location:**

Site/Job: SED Location Description: parking lot  
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.774" Y-Coord: W 78° 59' 50.396"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	8827 cpm	1min	45970 cpm	Y	Y	Y	0820	57.4°	Th-232 JE
Ratemeter	1min	8827 cpm	1min	10664 cpm	Y	Y	Y	0823	57.4°	Cs-137 JE
Ratemeter	1min	8646 cpm	1min	45597 cpm	Y	Y	Y	1059	62.8°	Th-232 JE
Ratemeter	1min	8646 cpm	1min	10887 cpm	Y	Y	Y	1103	62.8°	Cs-137 JE
Ratemeter	1min	8852 cpm	1min	44722 cpm	Y	Y	Y	1444	65.2°	Th-232 JE
Ratemeter	1min	8852 cpm	1min	9941 cpm	Y	Y	Y	1448	65.2°	Cs-137 JE
Bicron	NA	6 uRem/hr	NA	35 uRem/hr	Y	Y	Y	1101	62.9°	Th-232 JE
Bicron	NA	7 uRem/hr	NA	410 uRem/hr	Y	Y	Y	1434	65.2°	Th-232 JE
Bicron	NA		NA							

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





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Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 19 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 isotope: Cs-137 Serial No.: 87E13-48 Activity: 0.02 units: µci Assay Date: 1/20/10  
 Response Acceptance Range (+/- 20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RCT Date: 12/15/15 Time: 0800

4. Site or Location: Site/Job: HOME OWNER WELLS

Location Description: RESIDENTIAL

GPS Coordinates (when required): X-Coord: \_\_\_\_\_ Y-Coord: \_\_\_\_\_

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	8063 cpm	1	20324 cpm	Y	Y	Y	0800	48.5	Th 232 SK
Ratemeter	1	8063 cpm	1	11700 cpm	Y	Y	Y	0800	48.5	Cs 137 SK
Ratemeter	1	8638 cpm	1	20498 cpm	Y	Y	Y	1230	47.6	Th 232 SK
Ratemeter	1	8638 cpm	1	11232 cpm	Y	Y	Y	1230	47.6	Cs 137 SK
Ratemeter	1	9224 cpm	1	21926 cpm	Y	Y	Y	1500	45.8	Th 232 SK
Ratemeter	1	9224 cpm	1	13006 cpm	Y	Y	Y	1500	45.8	Cs 137 SK
Bicron	NA	7 uRem	NA	18 uRem/hr	Y	Y	Y	0800	48.5	Th 232 SK
Bicron	NA	7 uRem	NA	18 uRem/hr	Y	Y	Y	1230	47.6	Th 232 SK
Bicron	NA	7 uRem	NA	18 uRem/hr	Y	Y	Y	1500	45.8	Th 232 SK

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability.

**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 2041-2 Serial No. 202098 Cal. Due Date: 09/11/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642  
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 6/18/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 40.1 units: µCi Assay Date: 4/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53795 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: µCi Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 3273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/15/15 Time: 0804

**4. Site or Location:**

Site/Job: Area 5-2 Location Description: woods  
 GPS Coordinates (when required): X-Coord: N 42° 31' 8.683" Y-Coord: W 78° 58' 41.797"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	8333 cpm	1 min	44189 cpm	Y	Y	Y	0808	47.1°	Th-232 JGE
Ratemeter	1 min	8333 cpm	1 min	10364 cpm	Y	Y	Y	0912	47.3°	Cs-137 JGE
Ratemeter	1 min	8944 cpm	1 min	46517 cpm	Y	Y	Y	1145	48.5°	Th-232 JGE
Ratemeter	1 min	8944 cpm	1 min	10964 cpm	Y	Y	Y	1150	48.5°	Cs-137 JGE
Ratemeter	1 min	1118 cpm	1 min	46862 cpm	Y	Y	Y	1456	47.0°	Th-232 JGE
Ratemeter	1 min	1118 cpm	1 min	13164 cpm	Y	Y	Y	1449	47.0°	Cs-137 JGE
Bicron	NA	8 uRem/hr	NA	40 uRem/hr	Y	Y	Y	1142	48.5°	Th-232 JGE
Bicron	NA	8 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1445	47.0°	Th-232 JGE
Bicron	NA		NA		Y	Y	Y			

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability





Rev 1 10/18/15

### Instrument Field Response Check Log

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicon MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20%: 20 uRem/hr -20%: 14 net cpm + 20%: 22926 net cpm -20%: 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µci Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20%: \_\_\_\_\_ uRem/hr -20%: \_\_\_\_\_ net cpm + 20%: 13375 net cpm -20%: 8919

**3. Technician/Worker Performing Checks:**

Name: STEVE KINSMAN Title: RCT Date: 12/16/15 Time: 0815

**4. Site or Location: Site/Job 54**

Location Description: WOODS  
 GPS Coordinates (when required): X-Coord: \_\_\_\_\_ Y-Coord: \_\_\_\_\_

Instrument Field Response <sup>1</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Ist. Callb. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1	7625 cpm	1	2116 cpm	Y	Y	Y	0815	44.8	Th-232 SK
Ratemeter	1	7625 cpm	1	1135 cpm	Y	Y	Y	0815	44.8	Cs-137 SK
Ratemeter	1	7556 cpm	1	19670 cpm	Y	Y	Y	1100	45.8	Th-232 SK
Ratemeter	1	7556 cpm	1	11260 cpm	Y	Y	Y	1100	45.8	Cs-137 SK
Ratemeter	1	7423 cpm	1	19406 cpm	Y	Y	Y	1308	45.8	Th-232 SK
Ratemeter	1	7423 cpm	1	11391 cpm	Y	Y	Y	1313	45.8	Cs-137 SK
Bicon	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	0815	44.8	Th-232 SK
Bicon	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1100	45.8	Th-232 SK
Bicon	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1300	45.8	Th-232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
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**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 224-2 Serial No. 200098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. 72112642 Cal. Due Date: N/A  
 Blicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 50.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 58798 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: µCi Assay Date: \_\_\_\_\_  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8549

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/16/15 Time: 0824

4. **Site or Location:** Site/Job: Area 51 Location Description: woods  
 GPS Coordinates (when required): X-Coord: N 42° 30' 45.446" Y-Coord: W 71° 58' 15.324"

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	5149 cpm	1 min	44662 cpm	Y	Y	Y	0826	39.7°	Th-232 JE
Ratemeter	1 min	8149 cpm	1 min	10097 cpm	Y	Y	Y	0831	39.8°	Cs-137 JE
Ratemeter	1 min	8459 cpm	1 min	44240 cpm	Y	Y	Y	1135	46.2°	Th-232 JE
Ratemeter	1 min	8459 cpm	1 min	10305 cpm	Y	Y	Y	1140	46.2°	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 2041-2 Serial No. 206098 Cal. Due Date: 09/01/16  
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642 Cal. Due Date: 6/15/16  
 Bicron MicroRem Meter: Serial No. 1987

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 40.1 units: NC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53798 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: NC Assay Date: NA  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 13273 net cpm -20% 8849

**3. Technician/Worker Performing Checks:**

Name: J. Edwards Title: RCT Date: 12/17/15 Time: 0815

**4. Site or Location:**

Site/Job: Area 5.5-5.6 Location Description: woods  
 GPS Coordinates (when required): X-Coord: \_\_\_\_\_ Y-Coord: \_\_\_\_\_

Instrument Field Response <sup>2</sup>					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	9274 cpm	1min	44808 cpm	Y	Y	Y	0919	49.4°	Th-232 DE
Ratemeter	1min	9274 cpm	1min	11109 cpm	Y	Y	Y	0823	49.4°	Cs-137 DE
Ratemeter	1min	9433 cpm	1min	46391 cpm	Y	Y	Y	1033	50.1°	Th-232 DE
Ratemeter	1min	9433 cpm	1min	11440 cpm	Y	Y	Y	1040	50.1°	Cs-137 DE
Ratemeter	1min	7809 cpm	1min	44433 cpm	Y	Y	Y	1400	43.5°	Th-232 TB
Ratemeter	1min	7809 cpm	1min	9743 cpm	Y	Y	Y	1400	43.5°	Cs-137 TB
Bicron	NA	5 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1035	50.3°	Th-232 DE
Bicron	NA	NA	NA	NA	Y	Y	Y			NA
Bicron	NA	5 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1400	43.5°	Th-232 TB

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Instrument Field Response Check Log

1. Instrument Information<sup>1</sup>

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16  
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127  
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284  
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% uRem/hr -20% net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINIMAN Title: RET Date: 12/21/15 Time: 0830

4. Site or Location:

Site/Job: BGA 1 Location Description: FIELD  
 GPS Coordinates (when required): X-Coord: N42°25'54.49 Y-Coord: W78°38'17.24

Instrument Field Response					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time (min)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (min)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	6705 cpm	1	19313 cpm	Y	Y	Y	0830	48.2	Th232 SK
Ratemeter	1	6705 cpm	1	10335 cpm	Y	Y	Y	0830	48.2	Cs137 SK
Ratemeter	1	7729 cpm	1	19444 cpm	Y	Y	Y	1200	46.1	Th232 SK
Ratemeter	1	7729 cpm	1	10722 cpm	Y	Y	Y	1200	46.1	Cs137 SK
Ratemeter	1	7713 cpm	1	20402 cpm	Y	Y	Y	1500	45.1	Th232 SK
Ratemeter	1	7713 cpm	1	11311 cpm	Y	Y	Y	1500	45.1	Cs137 SK
Bicron	NA	5 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0830	48.2	Th232 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1200	46.1	Th232 SK
Bicron	NA	8 uRem/hr	NA	19 uRem/hr	Y	Y	Y	1500	45.1	Th232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.  
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability