

**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% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ 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: Tom Bidan Title: \_\_\_\_\_ Date: 11-25-15 Time: 0900

**4. Site or Location:**

Site/Job: Dept. Building - 4.4 Location Description: parking lot  
 GPS Coordinates (when required): X-Coord: N 42° 32' 28.3" Y-Coord: W 78° 59' 50.2"

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	7748	1	20398	Y	Y	Y	0900	39.0	Th-232 SK
Ratemeter	1	7748	1	11328	Y	Y	Y	0900	39.0	Cs-137 SK
Ratemeter	1	5925	1	17979	Y	Y	Y	1230	50.0	Th-232 SK
Ratemeter	1	5925	1	9560	Y	Y	Y	1230	50.0	Cs-137 SK
Ratemeter			N/A				N/A			
Ratemeter			N/A				N/A			
Bicon	NA	5	NA	13	Y	Y	Y	0900	39.0	Th-232 SK
Bicon	NA	4	NA	17	Y	Y	Y	1230	50.0	Th-232 SK
Bicon	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. PR12642  
 Bicron MicroRem Meter: Serial No. \_\_\_\_\_ Cal. Due Date: \_\_\_\_\_

**2. Check Source Information:**

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 50.1 units: μC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 53714 net cpm -20% 35566  
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: μC Assay Date: \_\_\_\_\_  
 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. E. Edwards Title: RC7 Date: 11/25/15 Time: 0917

**4. Site or Location:** Site/Job: Environmental Dept / Area 4.4 Location Description: Parking lot / woods  
 GPS Coordinates (when required): X-Coord: N 42° 31.978' Y-Coord: W 079° 00.963'

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	8768 cpm	1 min	45190 cpm	Y	Y	Y	0919	41.1°	Th-232 JE
Ratemeter			1 min	10628 cpm	Y	Y	Y	0925	41.5°	Cs-137 JE
Ratemeter	1 min	6561 cpm	1 min	44091 cpm	Y	Y	Y	1250	50.9°	Th-232 JE
Ratemeter			1 min	8885 cpm	Y	Y	Y	1235	53.6°	Cs-137 JE
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

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- 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. 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% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ 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: 11/30/15 Time: 0930

4. Site or Location:

Site/Job: 4.4 Location Description: FIELD  
 GPS Coordinates (when required): X-Coord: N 42° 31' 58.5" Y-Coord: W 679° 00' 57.9"

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)	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	5545	1	17689	Y	Y	Y	0945	31.9	Th232 SK
Ratemeter	1	5545	1	9185	Y	Y	Y	0945	31.9	Cs137 SK
Ratemeter	1	5626	1	18246	Y	Y	Y	1230	42.8	Th232 TB
Ratemeter	1	5626	1	9210	Y	Y	Y	1230	42.8	Cs137 SK
Ratemeter	1	5722	1	18441	Y	Y	Y	1500	47.8	Th232 SK
Ratemeter	1	5722	1	9261	Y	Y	Y	1500	47.8	Cs137 SK
Bicron	NA	4	NA	17	Y	Y	Y	0945	31.9	Th232 SK
Bicron	NA	4	NA	15	Y	Y	Y	1230	42.8	Th232 SK
Bicron	NA	4	NA	17	Y	Y	Y	1500	47.8	Th232 SK

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### Instrument Field Response Check Log

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

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206095 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: CC-1 units: MC Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 53795 net cpm -20% 35866  
 Source 2 Isotope: Cs-137 Serial No.: 119623-12 Activity: 0.07 units: MC 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: 11/30/15 Time: 0951

**4. Site or Location:**

Site/Job: Area 4.4/4.5 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	1min	616 cpm	1min	42744 cpm	Y	Y	Y	0957	37.0°	Th-232 DE
Ratemeter			1min	8945 cpm	Y	Y	Y	1002	37.2°	Cs-137 DE
Ratemeter	1min	6420 cpm	1min	42845 cpm	Y	Y	Y	1156	43.3°	Th-232 DE
Ratemeter			1min	8920 cpm	Y	Y	Y	1200	43.5°	Cs-137 DE
Ratemeter	1min	6789 cpm	1min	45768 cpm	Y	Y	Y	1460	47.1°	Th-232 DE
Ratemeter			1min	8935 cpm	Y	Y	Y	1454	47.2°	Cs-137 DE
Bicron	NA	5 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1230	44.0°	Th-232 DE
Bicron	NA	6 uRem/hr	NA	40 uRem/hr	Y	Y	Y	1446	47.1°	Th-232 DE
Bicron	NA		NA	1158/K DE						

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