



A Division of RSCS, Inc.

**Customer:** Chuck Mikaitis  
Cabrera Services, Inc.  
473 Silver Lane  
East Hartford, CT 06118-

# **Calibration Certificate** **ID Number: C801F18857-0**

**Instrument**  
Bicron Model MicroRem

**Serial Number**  
C801F

Precision Check				
Test 1	Test 2	Test 3	Mean	Results
1.60 mrem/hr	1.60 mrem/hr	1.60 mrem/hr	1.60 mrem/hr	Satisfactory

Accuracy Check			
Range	Target Value	As Found	As Left
X1000	160 mrem/hr	170 mrem/hr	170 mrem/hr
X1000	40 mrem/hr	40 mrem/hr	40 mrem/hr
X100	16 mrem/hr	16.5 mrem/hr	16.5 mrem/hr
X100	4 mrem/hr	4 mrem/hr	4 mrem/hr
X10	1.6 mrem/hr	1.8 mrem/hr	1.6 mrem/hr
X10	0.4 mrem/hr	0.45 mrem/hr	0.4 mrem/hr
X1	160 $\mu$ rem/hr	180 $\mu$ rem/hr	160 $\mu$ rem/hr
X1	40 $\mu$ rem/hr	45 $\mu$ rem/hr #	40 $\mu$ rem/hr #
X0.1	16 $\mu$ rem/hr	18.5 $\mu$ rem/hr #	16 $\mu$ rem/hr #
X0.1	4 $\mu$ rem/hr	5 $\mu$ rem/hr # *	4 $\mu$ rem/hr #

Readings with \* indicate ranges where As-Found readings are >20% of Target value. Readings with \*\* indicate As-left readings are >10% of Target value  
Readings with # indicate ranges where pulser was used.

MTE Instrument Type	Model	CalDueDate
Pulser	Ludlum 500-4 SN: 66151	01/16/2009

Outer Physical Check: Pass      Mechanical Zero: Pass  
Internal Check: Pass      Tap Test: Pass  
Geotropism Check: Pass

Calibrated by: QA Review:

Calibration Date: 03/26/2008  
Expires: 03/26/2009

Atmospheric Conditions - Temperature: 71°F Humidity: 22% Barometric Pressure: 29.76"hg  
This calibration was performed by RSCS Inc. 91 Portsmouth ave, Stratham NH 03885 using a NIST Traceable radiation source (Cs-137 Beam Source SN: S-364). In conformance to the following standards: ANSI N323A (1997), RSCS New Hampshire Radioactive Material License Number: 381R. RSCS calibration services are performed in accordance with the RSCS Radiation Protection Program Manual and Standard Operating Procedure 2.4. This calibration certificate shall not be reproduced except in full without the express written consent of RSCS, Inc.

Radiation Safety and Control Services, Inc.  
91 Portsmouth Ave. Stratham, NH 03885  
1-800-525-8339 (603) 778-2871 Fax (603) 778-6879 [www.radsafety.com](http://www.radsafety.com)



A Division of RSCS, Inc.

# **Calibration Certificate** **ID Number: 17695216444-0**

**Customer:** Chuck Mikaitis  
**Cabrera Services, Inc.**  
 473 Silver Lane  
 East Hartford, CT 06118-

**Instrument**  
 Ludlum Model 2221

**Serial Number**  
 176952

**Probe Model**  
 Alpha Spectra Inc G5

**Serial Number**  
 051200A

Precision Check				
Test 1	Test 2	Test 3	Mean	Results
10.00 Kcpm	9.98 Kcpm	9.98 Kcpm	9.99 Kcpm	Satisfactory

Accuracy Check			
Range	Target Value	As Found	As Left
X1000	400 Kcpm	399.821 Kcpm #	399.821 Kcpm #
X1000	100 Kcpm	99.657 Kcpm #	99.657 Kcpm #
X100	40 Kcpm	39.983 Kcpm #	39.983 Kcpm #
X100	10 Kcpm	9.995 Kcpm #	9.995 Kcpm #
X10	4 Kcpm	3.999 Kcpm #	3.999 Kcpm #
X10	1 Kcpm	1.001 Kcpm #	1.001 Kcpm #
X1	400 cpm	399 cpm #	399 cpm #
X1	100 cpm	100 cpm #	100 cpm #

Readings with \* indicate ranges where As-Found readings are >20% of Target value. Readings with \*\* indicate As-left readings are >10% of Target value  
 Readings with # indicate ranges were calibrated using a pulser

Probe Model & SN	Isotope	Efficiency	NIST Source ID	Geometry
G5 051200A	Co-57	0.4349 C/D	Co-57 (SN: 5586)	On Contact
G5 051200A	I-129	0.3456 C/D	I-129 (SN: NES-186S)	On Contact

MTE Instrument Type	Model	CalDueDate
Pulser	Ludlum 500-4SN: 66151	01/15/2008

Outer Physical Check: <i>Pass</i>	Mechanical Zero: <i>Pass</i>	<b>Electronics Checks</b>	<b>As Found</b>	<b>As Left</b>
Internal Check: <i>Pass</i>	Tap Test: <i>Pass</i>	High Voltage	1140 Volts	1140 Volts
Geotropism Check: <i>Pass</i>		Low Level Discriminator #1	10 mV	10 mV
		Window	Off	Off

Comments: Analog and digital displays reflect appropriate congruence

Calibrated by:

QA Review:

Date: 12/04/2007  
 Expires: 12/04/2008

Atmospheric Conditions - Temperature: 75° F Humidity: 29 % Barometric Pressure: 22.80 in/hg

This calibration was performed by RSCS Inc. 91 Portsmouth ave, Stratham NH 03885 using a NIST Traceable radiation source, in conformance to the following standards: ANSI N323A (1997). RSCS New Hampshire Radioactive Material License Number: 381R. RSCS calibration services are performed in accordance with the RSCS Radiation Protection Program Manual and Standard Operating Procedure 2.4. This calibration certificate shall not be reproduced except in full without the express written consent of RSCS, Inc

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 91 Portsmouth Ave, Stratham, NH 03885  
 1-800-525-8339 (603) 778-2871 Fax (603) 778-6879 www.radsafety.com





Calibration Certificate  
ID Number: 17494520213-0

Customer: Chuck Mikaitis  
Cabrera Services, Inc.  
473 Silver Lane  
East Hartford, CT 06118-

Instrument  
Ludlum Model 2221

Serial Number  
174945

Probe Model  
Alpha Spectra Inc G5

Serial Number  
010700D

Precision Check				
Test 1	Test 2	Test 3	Mean	Results
10.00 Kcpm	10.00 Kcpm	9.99 Kcpm	9.99 Kcpm	Satisfactory

Accuracy Check			
Range	Target Value	As Found	As Left
X1000	400 Kcpm	399.981 Kcpm #	399.981 Kcpm #
X1000	100 Kcpm	99.987 Kcpm #	99.987 Kcpm #
X100	40 Kcpm	39.888 Kcpm #	39.888 Kcpm #
X100	10 Kcpm	9.998 Kcpm #	9.998 Kcpm #
X10	4 Kcpm	3.998 Kcpm #	3.998 Kcpm #
X10	1 Kcpm	1.001 Kcpm #	1.001 Kcpm #
X1	400 cpm	400 cpm #	400 cpm #
X1	100 cpm	100 cpm #	100 cpm #

Readings with \* indicate ranges where As-Found readings are >20% of Target value. Readings with \*\* indicate As-left readings are >10% of Target value  
Readings with # indicate ranges were calibrated using a pulser



Probe Model & SN	Isotope	Efficiency	NIST Source ID	Geometry
G5 010700D	Co-57	0.3827 C/D	Co-57 (SN: 14288)	On Contact
G5 010700D	I-129	0.1706 C/D	I-129 (SN: NES-186S)	@1cm

MTE Instrument Type	Model	CalDueDate
Pulser	Ludlum 500-4SN: 66151	01/16/2009

Outer Physical Check: Pass	Tap Test: Pass
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Electronics Checks	As Found	As Left
High Voltage	895 Volts	895 Volts
Low Level Discriminator #1	2.2 mV	2. mV
Window	Out	Out

Comments: Analog and digital displays reflect appropriate congruence

Calibrated by:  QA Review: 

Date: 05/15/2008  
Expires: 05/15/2009

Atmospheric Conditions - Temperature: 77° F Humidity: 28 % Barometric Pressure: 29.80 in/hg  
This calibration was performed by RSCS Inc. 91 Portsmouth ave, Stratham NH 03885 using a NIST Traceable radiation source, in conformance to the following standards: ANSI N323A (1997), RSCS New Hampshire Radioactive Material License Number: 381R. RSCS calibration services are performed in accordance with the RSCS Radiation Protection Program Manual and Standard Operating Procedure 2.4. This calibration certificate shall not be reproduced except in full without the express written consent of RSCS, Inc

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1-800-525-8339 (603) 778-2871 Fax (603) 778-6879 www.radsafety.com

# Certificate of Calibration

## Ratemeter / Scaler Certificate of Calibration



Environmental Restoration Group, Inc.  
8809 Washington St. NE, Suite 150  
Albuquerque, NM 87113  
(505) 298-4224

Manufacturer: Ludlum Model: 2221r Serial No.: 117634

All Ranges Calibrated Electronically; Ludlum Pulsar Generator Serial No.: ☐ 97743 ☒ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.  
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☒ Mechanical ck. ☒ Meter Zeroed ☒ Geotropism ck. ☒ F/S Response ck. ☒ Audio ck.

☒ THR/WIN ck. High Voltage ck.: ☒ 500v ☒ 1000v ☒ 1500v ☒ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☒ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	<u>400 Kcpm</u>	<u>400 Kcpm</u>
100 Kcpm	<u>100 Kcpm</u>	<u>100 Kcpm</u>
40 Kcpm	<u>40 Kcpm</u>	<u>40 Kcpm</u>
10 Kcpm	<u>10 Kcpm</u>	<u>10 Kcpm</u>
4 Kcpm	<u>4 Kcpm</u>	<u>4 Kcpm</u>
1 Kcpm	<u>1 Kcpm</u>	<u>1 Kcpm</u>
400 cpm	<u>400 cpm</u>	<u>400 cpm</u>
100 cpm	<u>100 cpm</u>	<u>100 cpm</u>

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	<u>400 Kcpm</u>	<u>400 Kcpm</u>	<u>398509</u>
40 Kcpm	<u>40 Kcpm</u>	<u>40 Kcpm</u>	<u>39852</u>
4 Kcpm	<u>4 Kcpm</u>	<u>4 Kcpm</u>	<u>3985</u>
400 cpm	<u>400 cpm</u>	<u>400 cpm</u>	<u>399</u>

Calibrated By: [Signature]

Calibration Date: 6-18-08

Calibration Due: 6-18-09

Reviewed By: [Signature]

Date: 6/18/08



# Certificate of Calibration

## Voltage Plateau Form



Environmental Restoration Group, Inc.  
8809 Washington St. NE, Suite 150  
Albuquerque, NM 87113  
(505) 298-4224

Detector Mfg.: Ludlum Model: FIDLER Serial No.: 120999C  
Counter Mfg.: Ludlum Model: 2221r Serial No.: 190171

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.  
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☒ Other: Curly

Detector geometry to source: ☐ Face, ☐ Side, ☒ Below, ☐ Other: \_\_\_\_\_

Distance to source: ☐ Contact, ☐ 6-Inches, ☒ Other: 1/2"

Gamma Source: ☐ Cs-137 @ 5.7 $\mu$ Ci (2/18/08) sn: 4097-03 ☒ Other: Am-241 uCi

Count Time: 30 Seconds

High Voltage	Gross Source Counts	Background Counts
800	2268	
900	77860	
1000	98151	
1050	119845	
1100	139956	
1150	145924	
1200	147635	
1250	148527	5400
1300	148048	

Comments: Recommended Operating High Voltage: 1250 volts

Calibrated By: [Signature]

Calibration Date: 6-15-08

Calibration Due: 6-18-09

Reviewed By: [Signature]

Date: 6/18/08



243 Root St.  
Suite 100  
Olean, New York 14760  
Voice: (716) 372-5300  
Fax: (716) 372-5307

## Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer		Instrument			
Customer Name: Cabrera Services Inc		Manufacturer: Ludlum Measurements, Inc.			
Address: 473 Silver Lane East Hartford, CT 06118		Model: 3	Serial Number: 89973		
		Detector Manufacturer: Ludlum Measurements, Inc.			
Contact Name: Chuck Mikaitis		Det. Model: 44-9	Serial Number: PR084781		
Customer PO/ CC. Number: 08-1214	Work Order Number: 2008-488	Meterface: 202-560	Calibration Method: Electronic and Source		
Instrument Received: <input checked="" type="checkbox"/> Within Toler. +/-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> Out of Tol. <input type="checkbox"/> Requiring Repair <input type="checkbox"/> Other (See Comments)					
<input checked="" type="checkbox"/> Geotropism <input checked="" type="checkbox"/> Meter Zero <input checked="" type="checkbox"/> Mech. Ck. <input type="checkbox"/> HV Readout <input checked="" type="checkbox"/> Battery Check <input checked="" type="checkbox"/> Reset					
<input checked="" type="checkbox"/> Audio <input type="checkbox"/> Window Status <input checked="" type="checkbox"/> FS Response <input checked="" type="checkbox"/> Linearity <input type="checkbox"/> Background Subtract <input type="checkbox"/> Alarm Set					
Temperature: 71.0 F Humidity: 25 % Pressure: 723.9 mm Hg Altitude: 1455 ft					
Instrument Calibration					
Multiplier/Range	Calibration Point	Instrument Response		Reference instruments and / or Sources	
		Before Calibration	After Calibration	Pulser: LUD500-2 220099	
X 0.1	0.05 mR/hr	160 cpm	160 cpm	Cs-137 7753CM	Cs-137 7020CM
X 0.1	0.15 mR/hr	491 cpm	491 cpm	<b>Comments</b> Inst. Voltage: 894 V Input Sensitivity: 27 mV	
X 1	0.5 mR/hr	1600 cpm	1600 cpm		
X 1	0.5 mR/hr	0.5 mR/hr	0.5 mR/hr		
X 1	1.5 mR/hr	4910 cpm	4910 cpm		
X 1	1.5 mR/hr	1.5 mR/hr	1.5 mR/hr		
X 10	5 mR/hr	5.5 mR/hr	5.5 mR/hr		
X 10	15 mR/hr	14.5 mR/hr	14.5 mR/hr		
X 100	50 mR/hr	45 mR/hr	45 mR/hr		
X 100	150 mR/hr	150 mR/hr	150 mR/hr		

### Statement of Certification

MJW Technical Services, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument

Calibrated By: 

Reviewed By: 

Date

2/20/08

Calibration Date: 02/20/2008

Calibration Due: 02/20/2009





243 Root St.  
Suite 100  
Olean, New York 14760  
Voice: (716) 372-5300  
Fax: (716) 372-5307

## Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer		Instrument	
Customer Name: Cabrera Services Inc		Manufacturer: Ludlum Measurements, Inc.	
Address: 473 Silver Lane East Hartford, CT 06118		Model: 2929	Serial Number: 129566
		Detector Manufacturer: Ludlum Measurements, Inc.	
Contact Name: Chuck Mikaitis		Det. Model: 43-10-1	Serial Number: PR132720
Customer PO/ CC. Number: 08-1170	Work Order Number: 2007-440	Meterface: Analog / Digital	Calibration Method: Electronic
Instrument Received: <input checked="" type="checkbox"/> Within Toler. +/-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> Out of Tol. <input type="checkbox"/> Requiring Repair <input type="checkbox"/> Other (See Comments)			
<input type="checkbox"/> Geotropism <input checked="" type="checkbox"/> Meter Zero <input checked="" type="checkbox"/> Mech. Ck. <input checked="" type="checkbox"/> HV Readout <input type="checkbox"/> Battery Check <input type="checkbox"/> Reset			
<input checked="" type="checkbox"/> Audio <input type="checkbox"/> Window Status <input type="checkbox"/> FS Response <input type="checkbox"/> Linearity <input type="checkbox"/> Background Subtract <input type="checkbox"/> Alarm Set			
Temperature: 70.9 F Humidity: 28 % Pressure: 723.9 mm Hg Altitude: 1455 ft			

### Instrument Calibration

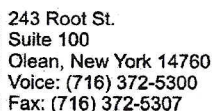
Multiplier\Range	Calibration Point	Instrument Response		Reference instruments and / or Sources	
		Before Calibration	After Calibration	Pulser: LUD500-2 220110	
Alpha	40 cpm	41 cpm	39 cpm	Th-230 C7-644	Tc-99 C7-641
Alpha	400 cpm	401 cpm	399 cpm	C-14 C7-804	Pu-239 C7-639
Alpha	4000 cpm	4019 cpm	3990 cpm	SrY-90 C7-630	
Alpha	40000 cpm	40070 cpm	39900 cpm	<b>Comments</b>  Inst. Voltage: 800 V  Amplifier gain: As found = 20, As Left = 25 Window status: Beta threshold - 4 mV Beta window - 50 mV Alpha threshold - 175 mV  Instrument Voltage set @ 800 = 3.27 on High Voltage dial Alpha background is 1 cpm, Beta background is 76 cpm Alpha crosstalk in the Beta channel is <10% with insert in place Beta crosstalk in the Alpha channel is <1% with insert in place  4 pi Efficiency Pu239 = 34.8% C14 = 7.5% SrY90 = 26.4% Th230 = 33.3% Tc99 = 20.4%	
Alpha	400000 cpm	400430 cpm	398720 cpm		
Beta-Gamma	40 cpm	40 cpm	40 cpm		
Beta-Gamma	400 cpm	401 cpm	398 cpm		
Beta-Gamma	4000 cpm	4010 cpm	3990 cpm		
Beta-Gamma	40000 cpm	40060 cpm	39780 cpm		
Beta-Gamma	400000 cpm	400450 cpm	398395 cpm		

### Statement of Certification


MJW Technical Services, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCCL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument	Reviewed By: <i>Linda M. Lund</i> Date: <i>1/4/08</i>
Calibrated By: <i>[Signature]</i>	
Calibration Date: 01/03/2008	Calibration Due: 01/03/2009





This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Statement of Certification			
<p>MJW Technical Sevices, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANS/NCSL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).</p>			
Instrument			
Calibrated By: 		Reviewed By:  Date: 1/4/08	
Calibration Date: 01/03/2008		Calibration Due: 01/03/2009	





**This Certificate will be accompanied by Calibration Charts or Readings where Applicable**

## Instrument Calibration

## Statement of Certification

MJW Technical Services, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument		Reviewed By: <i>Linda M. Lund</i>		Date	<i>2/20/08</i>
Calibrated By: <i>Larry R. Smith</i>		Calibration Date: 02/20/2008		Calibration Due: 02/20/2009	





243 Root St.  
Suite 100  
Olean, New York 14760  
Voice: (716) 372-5300  
Fax: (716) 372-5307

# Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable


Customer		Instrument			
Customer Name: Cabrera Services Inc		Manufacturer: Ludlum Measurements, Inc.			
Address: 473 Silver Lane East Hartford, CT 06118		Model: 14C	Serial Number: 172825		
		Detector Manufacturer: Ludlum Measurements, Inc.			
Contact Name: Chuck Mikaitis		Det. Model: 44-38	Serial Number: PR174016		
Customer PO/ CC. Number: 08-1185	Work Order Number: 2008-460	Meterface: 202-241	Calibration Method: Electronic and Source		
Instrument Received: <input type="checkbox"/> Within Toler. +-10% <input checked="" type="checkbox"/> 10-20% <input type="checkbox"/> Out of Tol. <input type="checkbox"/> Requiring Repair <input type="checkbox"/> Other (See Comments)					
<input checked="" type="checkbox"/> Geotropism <input checked="" type="checkbox"/> Meter Zero <input checked="" type="checkbox"/> Mech. Ck. <input type="checkbox"/> HV Readout <input checked="" type="checkbox"/> Battery Check <input checked="" type="checkbox"/> Reset					
<input checked="" type="checkbox"/> Audio <input type="checkbox"/> Window Status <input checked="" type="checkbox"/> FS Response <input checked="" type="checkbox"/> Linearity <input type="checkbox"/> Background Subtract <input type="checkbox"/> Alarm Set					
Temperature: 71.6 F Humidity: 23 % Pressure: 736.6 mm Hg Altitude: 1455 ft					
Instrument Calibration					
Multiplier/Range	Calibration Point	Instrument Response		Reference instruments and / or Sources	
		Before Calibration	After Calibration	Pulser: LUD500-2 220100	
X 0.1	0.05 mR/hr	57 cpm	57 cpm	Cs-137 7753CM	Cs-137 7020CM
X 0.1	0.15 mR/hr	175 cpm	175 cpm	<b>Comments</b> Inst. Voltage: 896 V Input Sensitivity: 28 mV	
X 1	0.5 mR/hr	575 cpm	575 cpm		
X 1	0.5 mR/hr	0.5 mR/hr	0.5 mR/hr		
X 1	1.5 mR/hr	1750 cpm	1760 cpm		
X 1	1.5 mR/hr	1.5 mR/hr	1.5 mR/hr		
X 10	5 mR/hr	5 mR/hr	5 mR/hr		
X 10	15 mR/hr	15 mR/hr	15 mR/hr		
X 100	50 mR/hr	50 mR/hr	50 mR/hr		
X 100	150 mR/hr	150 mR/hr	150 mR/hr		
X 1K	500 mR/hr	600 mR/hr	550 mR/hr		
X 1K	1500 mR/hr	1550 mR/hr	1400 mR/hr		

Statement of Certification	
MJW Technical Services, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANS/NCSL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).	
Instrument Calibrated By:	Reviewed By:  Date 1/21/08
Calibration Date: 01/21/2008	Calibration Due: 01/21/2009





**This Certificate will be accompanied by Calibration Charts or Readings where Applicable**

Statement of Certification			
<p>MJW Technical Seivces, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANS/NCSL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).</p>			
Instrument			
Calibrated By:		Reviewed By:	
		Date	1/21/08
Calibration Date: 01/21/2008		Calibration Due: 01/21/2009	





243 Root St.  
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Olean, New York 14760  
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Fax: (716) 372-5307

## Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer		Instrument	
Customer Name: Cabrera Services Inc		Manufacturer: Ludlum Measurements, Inc.	
Address: 473 Silver Lane East Hartford, CT 06118		Model: 3	Serial Number: 79517
		Detector Manufacturer: Ludlum Measurements, Inc.	
Contact Name: Chuck Mikaitis		Det. Model: 44-9	Serial Number: PR137500
Customer PO/ CC. Number: 08-1171	Work Order Number: 2007-441	Meterface: 202-002	Calibration Method: Electronic
Instrument Received: <input checked="" type="checkbox"/> Within Toler. $\pm 10\%$ <input type="checkbox"/> 10-20% <input type="checkbox"/> Out of Tol. <input type="checkbox"/> Requiring Repair <input type="checkbox"/> Other (See Comments)			
<input checked="" type="checkbox"/> Geotropism <input checked="" type="checkbox"/> Meter Zero <input checked="" type="checkbox"/> Mech. Ck. <input checked="" type="checkbox"/> HV Readout <input checked="" type="checkbox"/> Battery Check <input checked="" type="checkbox"/> Reset			
<input checked="" type="checkbox"/> Audio <input type="checkbox"/> Window Status <input checked="" type="checkbox"/> FS Response <input type="checkbox"/> Linearity <input type="checkbox"/> Background Subtract <input type="checkbox"/> Alarm Set			
Temperature: 71.3 F Humidity: 30 % Pressure: 718.8 mm Hg Altitude: 1455 ft			

Instrument Calibration					
Multiplier/Range	Calibration Point	Instrument Response		Reference instruments and / or Sources	
		Before Calibration	After Calibration	Pulser: LUD500-2	220110
X 0.1	100 cpm	100 cpm	100 cpm	C-14	C7-804 SrY-90 C7-661
X 0.1	400 cpm	400 cpm	400 cpm	Th-230	C7-644 Tc-99 C7-641
X 1	1 Kcpm	1 Kcpm	1 Kcpm	<b>Comments</b>  Inst. Voltage: 899 V Input Sensitivity: 26 mV  4 pi Efficiency C14 = 10.4% @ 0.25" SrY90 = 10.9% @ 0.25" Th230 = 7.1% @ 0.25" Tc99 = 12% @ 0.25"  2 pi Efficiency C14 = 38.6% @ 0.25" SrY90 = 18.1% @ 0.25" Th230 = 14.1% @ 0.25" Tc99 = 22.2% @ 0.25"	
X 1	4 Kcpm	3.9 Kcpm	3.9 Kcpm		
X 10	10 Kcpm	10.2 Kcpm	10.2 Kcpm		
X 10	40 Kcpm	40 Kcpm	40 Kcpm		
X 100	100 Kcpm	100 Kcpm	100 Kcpm		
X 100	400 Kcpm	395 Kcpm	395 Kcpm		

Statement of Certification	
MJW Technical Services, Inc certifies that the above Instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSS Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).	
Instrument Calibrated By:	Reviewed By:  Date: 1/4/08
Calibration Date: 12/31/2007	Calibration Due: 12/31/2008





243 Root St.  
Suite 100  
Olean, New York 14760  
Voice: (716) 372-5300  
Fax: (716) 372-5307

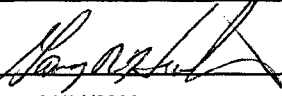
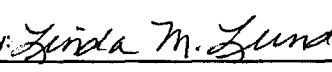
## Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer		Instrument			
Customer Name: Cabrera Services Inc		Manufacturer: Ludlum Measurements, Inc.			
Address: 473 Silver Lane East Hartford, CT 06118		Model: 3	Serial Number: 79552		
		Detector Manufacturer: Ludlum Measurements, Inc.			
Contact Name: Chuck Mikaltis		Det. Model: 44-9	Serial Number: PR085991		
Customer PO/ CC. Number: 08-1185	Work Order Number: 2008-460	Meterface: 202-002	Calibration Method: Electronic		
Instrument Received: <input checked="" type="checkbox"/> Within Toler. +/-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> Out of Tol. <input type="checkbox"/> Requiring Repair <input type="checkbox"/> Other (See Comments)					
<input checked="" type="checkbox"/> Geotropism <input checked="" type="checkbox"/> Meter Zero <input checked="" type="checkbox"/> Mech. Ck. <input type="checkbox"/> HV Readout <input checked="" type="checkbox"/> Battery Check <input checked="" type="checkbox"/> Reset					
<input checked="" type="checkbox"/> Audio <input type="checkbox"/> Window Status <input checked="" type="checkbox"/> FS Response <input type="checkbox"/> Linearity <input type="checkbox"/> Background Subtract <input type="checkbox"/> Alarm Set					
Temperature: 71.5 F Humidity: 23 % Pressure: 734.1 mm Hg Altitude: 1455 ft					
Instrument Calibration					
Multiplier/Range	Calibration Point	Instrument Response		Reference instruments and / or Sources	
		Before Calibration	After Calibration	Pulser: LUD500-2 220110	
X 0.1	100 cpm	105 cpm	100 cpm	C-14	C7-804 Th-230 C7-644
X 0.1	400 cpm	410 cpm	400 cpm	Tc-99	C7-641 SrY-90 C7-630
X 1	1 Kcpm	1.5 Kcpm	1 Kcpm	<b>Comments</b> Inst. Voltage: 895 V Input Sensitivity: 27 mV 4pi Efficiency @ 0.25" Th-230 (C7-644) = 6.4% Sr-90 (C7-630) = 16.2% Tc-99 (C7-641) = 9.5% C-14 (C7-804) = 2.6%	
X 1	4 Kcpm	4.2 Kcpm	4 Kcpm		
X 10	10 Kcpm	10 Kcpm	10 Kcpm		
X 10	40 Kcpm	41 Kcpm	40 Kcpm		
X 100	100 Kcpm	100 Kcpm	100 Kcpm		
X 100	400 Kcpm	400 Kcpm	400 Kcpm		

### Statement of Certification

MJW Technical Services, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCCL Z540-1-1994 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument	Calibrated By: 	Reviewed By: 	Date: 1/21/08
Calibration Date: 01/21/2008		Calibration Due: 01/21/2009	

**CERTIFICATE  
OF CALIBRATION**  
(AIR SAMPLER)



**RSA Laboratories, Inc.**

19 Pendleton Drive, P.O. Box 61

Hebron, Connecticut 06248

(860) 228-0721 Fax (860) 228-4402

Customer and Contact: **Cabrera Services, Inc., Attn: Larry Pawlus (860) 289-1885**

Customer Address: **809 Main Street, East Hartford, CT 06108**

Inst. Mfr. **F&J Specialty Products**

Reference Inst. **F&J Venturi D-812**

Inst. Model **LV-1**

Inst. s/n **3389**

Inst. s/n **2541**

Cal. Date **21 April 2008**

Due Date **21 April 2009**

Cal. Interval **1 year**

Barometric Press: Actual **29.93** in. Hg

Temperature: Actual **77°F**

Filters Used: ☒Particulate ☐Charcoal/silver zeolite ☐Other:

Corrected to: **29.73** in. Hg

Corrected to: **73.4°F**

Measurement	Air Sampler Flow Rate (LPM)	Ref. Inst. Flow Rate (LPM)	Percent Deviation
1	19.54	19.87	1.70
2	39.07	39.74	1.70
3	48.84	48.69	-0.31
4	58.61	57.63	-1.69
5	78.14	74.52	-4.86
6			
7			
8			
9			
10			
11			
12			

**\*\*Average percent deviation across the range = -0.69**

This is to certify that RSA Laboratories, Inc. of Hebron, Connecticut, has on this date certified this air sampler to be within the accuracy specified above. The Reference Flow Device bears Letters of Certification traceable to the National Institute of Science and Technology. RSA Laboratories, Inc. ID# 11837.

Calibrated by: **Kurt D. Newton**

Date: **21 April 2008**



CERTIFICATE OF CALIBRATION  
(AIR SAMPLER)

Facility: RSA Laboratories, Inc. Customer: Cabrera Services, Inc.

Air Sampler Model F&J LV-1

Calibrator Model F&J Venturi D-812

Air Sampler Serial No. 3389

Calibrator Serial No. 2541

AIR SAMPLER							CALIBRATOR		
Measurement	Inlet Temp. (°F)	Inlet Press (In-Hg)	Gauge Press (In-Hg)	Indicated Flow (LPM)	Temp/Press Correction Factor	Corrected Flow (LPM)	Indicated Flow (LPM)	Temp/Press Correction Factor	Corrected Flow (LPM)
1	73.4	29.73	1	20	0.977	19.54	20	0.994	19.87
2	73.4	29.73	1	40	0.977	39.07	40	0.994	39.74
3	73.4	29.73	1	50	0.977	48.84	49	0.994	48.69
4	73.4	29.73	1	60	0.977	58.61	58	0.994	57.63
5	73.4	29.73	1	80	0.977	78.14	75	0.994	74.52
6									
7									
8									
9									
10									
11									
12									

Air Sampler Temp/Press Corr Factor =  $\sqrt{\frac{530^{\circ}\text{R}}{\text{Inlet temp } (^{\circ}\text{F}) + 460^{\circ}\text{R}}} \times \frac{(\text{Inlet Press} - \text{Gauge Press})}{29.92 \text{ in. Hg}}$

Calibrator Temp/Press Corr Factor =  $\sqrt{\frac{530^{\circ}\text{R}}{\text{Inlet temp } (^{\circ}\text{F}) + 460^{\circ}\text{R}}} \times \frac{\text{Inlet Press}}{29.92 \text{ in. Hg}}$

% Deviation =  $\frac{\text{Corrected Flow} - \text{Sampler Flow}}{\text{Corrected Flow}} \times 100$

Corrected Flow = (Indicated Flow) x (Temp/Press Corr Factor)

Calibrated by: Kurt D. Newton

Date: 21 April 2008