

**Null, Kevin**

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**From:** Larry Pitt <lpitt@c70isotopes.com>  
**Sent:** Tuesday, July 21, 2015 10:46 AM  
**To:** Null, Kevin  
**Subject:** [External\_Sender] FW: Leak test certificates for Manhattan Institute and invoice  
**Attachments:** summary\_4cd5e07d-aae0-42e3-bead-693e6529f8b5.pdf; d644dde2-1050-4b6e-86ee-f7753780daf6.pdf

Kevin,  
Attached are the leak check results.

Thanks,

Larry \_\_\_\_\_

**From:** Corey Conn  
**Sent:** Tuesday, July 21, 2015 9:45 AM  
**To:** Larry Pitt  
**Subject:** Leak test certificates for Manhattan Institute and invoice

Lawrence Pitt  
Radiation Safety Officer  
Manhattan Isotope Technology LLC  
2301C 122nd  
Lubbock, TX 79423  
Office: 806-745-3300  
Cell: 806-777-8889  
Fax: 806-209-0012  
lpmanisotech@gmail.com<mailto:lpmanisotech@gmail.com>



510 County Highway V  
Two Rivers, WI 54241  
Voice +1-920-686-3889  
Fax +1-920-686-3899

STATE OF WISCONSIN RADIOACTIVE MATERIALS LICENSE 071-1234-01

Manhattan isotope technology 510 county highway V  Two Rivers, WI 54241 United States of America ATTENTION:				Manhattan isotope technology Manhattan isotope technology SUMMARY LEAK TEST REPORT 17 July 2015				
ASSAY NO.	SERIAL NO.	DEVICE SERIAL NO.	ISOTOPE	SOURCE ACTIVITY  mCi GBq	WIPE DATE ANALYSIS DATE	MDA   μCi Bq	SAMPLE ACTIVITY  μCi Bq	TEST PASS OR FAIL
Source Fails Test if Activity Exceeds Manhattan isotope technology Action Level						185 Bq 37 Bq	.005 μCi 1.00E-3 μCi	
130585	BM06133E1115 7208		Ba-133	0.298 mCi 0.011 GBq	17 Jul 2015 17 Jul 2015	1.1E-05 μCi 0.41 Bq	0 μCi -0.01754 Bq	SOURCE PASSES TEST
130584	BM06057E1121 4120		C0-57	5.53 mCi 0.2046 GBq	17 Jul 2015 17 Jul 2015	1.1E-05 μCi 0.41 Bq	0 μCi -0.03509 Bq	SOURCE PASSES TEST
130583	BM06137E1111 7E7143		Cs-137	0.207 mCi 0.0077 GBq	17 Jul 2015 17 Jul 2015	1.1E-05 μCi 0.41 Bq	0 μCi 0.05263 Bq	SOURCE PASSES TEST


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SEALED SOURCE LEAK TEST CERTIFICATE			
RAM ACCESSION NO.		130585	
Manhattan isotope technology - Manhattan isotope technology			
LOCATION		54241 - RAM SERVICES	
CONTACT PERSON		PHONE	
Manhattan isotope technology Manhattan isotope technology 510 county highway V  Two Rivers, WI 54241 United States of America			
LEAK TEST ANALYSIS			
EQUIPMENT NO.		NOT AVAILABLE	
MODEL #		DEVICE/TOOL NUMBER	
SOURCE SERIAL NO.		MANUFACTURER	
BM06133E11157208		MANUFACTURER S/N	
ISOTOPE		SOURCE ORIGINAL ACTIVITY	
Ba-133		0.298 mCi 0.011 GBq	
DATE SOURCE WIPED		REASON FOR TEST	
17 Jul 2015		PERIODIC	
ANALYSIS DATE		ANALYTICAL METHOD	
17 Jul 2015		Liquid Scintillation Counting	
GROSS SAMPLE COUNT		INSTRUMENT	
18 cpm		Perkin Elmer Tri-Carb 3110TR 130414	
BACKGROUND		COUNTING EFFICIENCY	
19 cpm		95%	
NET SAMPLE COUNT		MINIMUM DETECTABLE ACTIVITY	
-1 dpm		1.1E-05 µCi 0.41 Bq	
SAMPLE ANALYSIS ACTIVITY		PASS/FAIL CRITERION	
0 µCi -0.01754 Bq		0.005 µCi 185 Bq	
SOURCE PASSES TEST		ACTION LEVEL	
		0.001 µCi 37 Bq	
ANALYST Rick Parlato			
			
NOTES:			
ADDITIONAL SOURCE DESCRIPTION: RPK-1018			



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SEALED SOURCE LEAK TEST CERTIFICATE			
RAM ACCESSION NO.		130584	
Manhattan isotope technology - Manhattan isotope technology			
LOCATION		54241 - RAM SERVICES	
CONTACT PERSON		PHONE	
Manhattan isotope technology Manhattan isotope technology 510 county highway V  Two Rivers, WI 54241 United States of America			
LEAK TEST ANALYSIS			
EQUIPMENT NO.		NOT AVAILABLE	
MODEL #		DEVICE/TOOL NUMBER	
SOURCE SERIAL NO.		MANUFACTURER	
BM06057E11214120		MANUFACTURER S/N	
ISOTOPE		SOURCE ORIGINAL ACTIVITY	
C0-57		5.53 mCi 0.2046 GBq	
DATE SOURCE WIPED		REASON FOR TEST	
17 Jul 2015		PERIODIC	
ANALYSIS DATE		ANALYTICAL METHOD	
17 Jul 2015		Liquid Scintillation Counting	
GROSS SAMPLE COUNT		INSTRUMENT	
17 cpm		Perkin Elmer Tri-Carb 3110TR 130414	
BACKGROUND		COUNTING EFFICIENCY	
19 cpm		95%	
NET SAMPLE COUNT		MINIMUM DETECTABLE ACTIVITY	
-1.97895 dpm		1.1E-05 µCi 0.41 Bq	
SAMPLE ANALYSIS ACTIVITY		PASS/FAIL CRITERION	
0 µCi -0.03509 Bq		0.005 µCi 185 Bq	
SOURCE PASSES TEST		ACTION LEVEL	
		0.001 µCi 37 Bq	
ANALYST Rick Parlato			
			
NOTES:			
ADDITIONAL SOURCE DESCRIPTION: RPK-1018			



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SEALED SOURCE LEAK TEST CERTIFICATE			
RAM ACCESSION NO.		130583	
Manhattan isotope technology - Manhattan isotope technology			
LOCATION		54241 - RAM SERVICES	
CONTACT PERSON		PHONE	
Manhattan isotope technology Manhattan isotope technology 510 county highway V  Two Rivers, WI 54241 United States of America			
LEAK TEST ANALYSIS			
EQUIPMENT NO.		NOT AVAILABLE	
MODEL #		DEVICE/TOOL NUMBER	
SOURCE SERIAL NO.		MANUFACTURER	
BM06137E11117E7143		MANUFACTURER S/N	
ISOTOPE		SOURCE ORIGINAL ACTIVITY	
Cs-137		0.207 mCi 0.0077 GBq	
DATE SOURCE WIPED		REASON FOR TEST	
17 Jul 2015		PERIODIC	
ANALYSIS DATE		ANALYTICAL METHOD	
17 Jul 2015		Liquid Scintillation Counting	
GROSS SAMPLE COUNT		INSTRUMENT	
22 cpm		Perkin Elmer Tri-Carb 3110TR 130414	
BACKGROUND		COUNTING EFFICIENCY	
19 cpm		95%	
NET SAMPLE COUNT		MINIMUM DETECTABLE ACTIVITY	
3.03158 dpm		1.1E-05 $\mu$ Cl 0.41 Bq	
SAMPLE ANALYSIS ACTIVITY		PASS/FAIL CRITERION	
0 $\mu$ Cl 0.05263 Bq		0.005 $\mu$ Cl 185 Bq	
SOURCE PASSES TEST		ACTION LEVEL	
		0.001 $\mu$ Cl 37 Bq	
ANALYST Rick Parlato			
			
NOTES:			
ADDITIONAL SOURCE DESCRIPTION: RPK-1018			