



MISSOURI ANALYTICAL LABORATORIES, INC.

---CHEMISTS - MICROBIOLOGISTS---

1820 DELMAR BLVD.
ST. LOUIS, MO 63103-1798 U.S.A
TELEPHONE 314-241-8772
FAX 314-241-8775
rossl@missourianalytical.com

September 22, 2017

United States Nuclear Regulatory Commission Region III
Attn: Materials Licensing Branch Chief
2443 Warrenville Rd., Suite 210
Lisle, IL 60532-4352

RE: NRC Material License No. 24-12366-01

Dear Sir/Madam,

Missouri Analytical Laboratories, Inc. currently has NRC Material License No. 24-12366-01 (Amendment No. 19) and has decided to cease licensed activities permanently at the entire site. Thus we request that our license be terminated and that our entire site be released for unrestricted use.

Attached is NRC Form 314, our "Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site", dated July 18, 2017, and our report of the execution of this protocol.

Submitted by *Ross Larson* 9/22/17
Ross Larson
Radiation Safety Officer

Submitted by *Richard Gilbert* 9/22/17
Richard Gilbert
Vice President


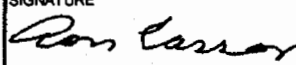
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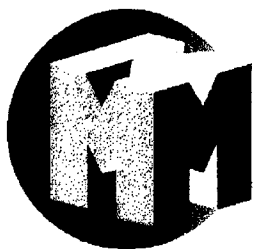
FDA REGISTERED

DEA LICENSED

GMP COMPLIANT

RECEIVED SEP 25 2017

NRC FORM 314 (02-2017) 10 CFR 30.36(j)(1); 40.42(j)(1); 70.38(j)(1); and 72.54(k)(5)(1)(i)		U.S. NUCLEAR REGULATORY COMMISSION CERTIFICATE OF DISPOSITION OF MATERIALS	APPROVED BY OMB: NO. 3150-0028 <small>Estimated burden per response to comply with this mandatory collection request: 30 minutes. This submital is used by NRC as part of the basis for its determination that the facility is released for unrestricted use. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (7-5 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to InfoCollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0028), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.</small>
LICENSEE NAME AND ADDRESS Missouri Analytical Laboratories, Inc. 1820 Delmar Blvd. St. Louis, MO 63103		LICENSE NUMBER 24-12366-01	DOCKET NUMBER 030-05138
		LICENSE EXPIRATION DATE December 31, 2024	
A. LICENSE STATUS (Check the appropriate box)			
<input type="checkbox"/> This license has expired. <input checked="" type="checkbox"/> This license has not yet expired; please terminate it.			
B. DISPOSAL OF RADIOACTIVE MATERIAL <small>(Check the appropriate boxes and complete as necessary. If additional space is needed, provide attachments)</small>			
The licensee, or any individual executing this certificate on behalf of the licensee, certifies that:			
<input type="checkbox"/> 1. No radioactive materials have ever been procured or possessed by the licensee under this license.			
<input checked="" type="checkbox"/> 2. All activities authorized by this license have ceased, and all radioactive materials procured and/or possessed by the licensee under this license number cited above have been disposed of in the following manner.			
<input checked="" type="checkbox"/> a. Transfer of radioactive materials to the licensee listed below: R.M. Wester and Associates, Inc., NRC license 24-20091-01, on September 15, 2017 transfer of sealed sources. Refer to attachments			
<input checked="" type="checkbox"/> b. Disposal of radioactive materials:			
<input checked="" type="checkbox"/> 1. Directly by the licensee: Decay-in-Storage. Refer to attachment.			
<input type="checkbox"/> 2. By licensed disposal site:			
<input type="checkbox"/> 3. By waste contractor:			
<input checked="" type="checkbox"/> c. All radioactive materials have been removed such that any remaining residual radioactivity is within the limits of 10 CFR Part 20, Subpart E, and is ALARA.			
C. SURVEYS PERFORMED AND REPORTED			
<input checked="" type="checkbox"/> 1. A radiation survey was conducted by the licensee. The survey confirms:			
<input checked="" type="checkbox"/> a. the absence of licensed radioactive materials			
<input type="checkbox"/> b. that any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.			
<input checked="" type="checkbox"/> 2. A copy of the radiation survey results:			
<input checked="" type="checkbox"/> a. is attached; or <input type="checkbox"/> b. is not attached (Provide explanation); or <input type="checkbox"/> c. was forwarded to NRC on: _____ Date			
<input type="checkbox"/> 3. A radiation survey is not required as only sealed sources were ever possessed under this license, and			
<input checked="" type="checkbox"/> a. The results of the latest leak test are attached; and/or <input type="checkbox"/> b. No leaking sources have ever been identified.			
The person to be contacted regarding the information provided on this form:			
NAME Ross Larson	TITLE RSO	TELEPHONE (Include Area Code) 3142418772 (FAX) 3142418775	E-MAIL ADDRESS RossL@MissouriAnal ytika.com
Mail all future correspondence regarding this license to: Ross Larson, Missouri Analytical Laboratories, Inc. 1820 DELMAR BLVD., ST. LOUIS, MO 63103			
C. CERTIFYING OFFICIAL I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT			
PRINTED NAME AND TITLE Ross Larson RSO	SIGNATURE 	DATE September 22, 2017	
WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECT. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.			



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Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site

Page 1 of 2

I. Introduction

Missouri Analytical Labs, Inc. currently has NRC Material License No. 24-12366-01 (Amendment No. 19) and has decided to cease licensed activities permanently at the entire site. Per our license, we are authorized to hold radioactive material with a half-life of less than or equal to 120 days for decay-in-storage. The byproduct material handled is P-32 with a half-life of 14.3 days. The last shipment of irradiated teeth was received on November 10, 2016 and the last generation of radioactive slurry was on January 4, 2017. Thus the most recent teeth and slurry have been held for decay-in-storage beyond 10 half-lives. No principal activity has been conducted since January 4, 2017. A report will be prepared by the RSO following the execution of this protocol and NRC Form 314 will be completed.

II. Disposition of Radioactive Material

Per our license, survey the radioactive material waste container surface with a calibrated survey meter set on its most sensitive scale and with no interposed shielding. The meter to be used is Victoreen Model 493, serial number 765, set at the lowest setting (1), and last calibrated on June 13, 2017 by R. M. Wester & Associates, 215 Indacom Dr., St. Peters, MO 63376. A record of the disposal will be made which includes the date of disposal, the date on which byproduct material was placed in storage, the radionuclide disposed, the survey meter used, the background dose rate, the dose rate measured at the surface of each waste container, the name of the individual performing the disposal, and the name of a witness to the disposal. In order to be eligible for disposal, all radioactive materials must be indistinguishable from background. Before disposal as ordinary trash, all radiation labels will be removed.

The following license-exempt sealed sources will be transferred to the licensee R. M. Wester & Associates:

- 1) ^{210}Bi , 0.0187 μCi , 4/22/74, NEN
- 2) ^{210}Bi , 0.0213 μCi , 11/12/87, NEN
- 3) ^{14}C , 0.148 μCi , 7/29/83, NEN
- 4) ^{60}Co , 0.040 μCi , 11/18/82, NEN
- 5) ^{60}Co , 0.042 μCi , 7/14/87, NEN
- 6) ^{137}Cs , 1.04 μCi , 1/12/84, NEN
- 7) ^{90}Sr , 0.022 μCi , 4/11/83, NEN

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Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site

Page 2 of 2

Protocol (continued)

III. Radiation Survey

After all P-32 material has been properly disposed of, a radiation survey will be conducted of the Second Floor Lab Area and Lower Level Radioactive Decay-in-Storage Area where NRC licensed material has been used and stored. The areas surveyed are those depicted in Diagram 99.A.0 which is part of Missouri Analytical SOP Number 99.0 entitled "Radiation Safety Program". The new laboratory bench which was authorized for use of licensed materials in Amendment No. 17 was never put into service and thus will not be surveyed. Diagram 99.A.0 depicts the only areas in which licensed materials have been used or stored. The purpose of this radiation survey is to determine whether or not licensed radioactive materials are absent (indistinguishable from background) or whether any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.

IV. Wipe Testing

After the survey referenced in Section III is completed, wipe testing will be performed per SOP No. 99.0 (Radiation Safety Program). The areas to be wipe tested are those depicted in Diagram 99.A.0 and will include any area which the survey found to have an activity of greater than 0.1mR/hr. At each site, swab a 100 square cm area using a water-moistened cotton tip swab and an aluminum 100 square cm template. On the gas flow counter, count the calibrator, blank swabs, and test swabs 7 minutes. The gas flow counter used will be Tennelec APC-II, serial # 71629, calibrated with license-exempt sealed source ⁹⁰Sr, 0.022 µCi, 4/11/83, NEN. The purpose of the wipe testing is to determine whether or not licensed radioactive materials are absent (indistinguishable from background) or whether any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.

Submitted by

Ross Larson 7/18/17

Ross Larson

Radiation Safety Officer

Approved by

Richard Gilbert 7/18/17

Richard Gilbert

Vice President

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Results of the Execution of "Protocol for the Disposition of
Radioactive Material and the Decommissioning of the Site"

Page 1 of 3

I. Introduction

Missouri Analytical Laboratories, Inc. currently has NRC Material License No. 24-12366-01 (Amendment No. 19) and has decided to cease licensed activities permanently at the entire site. Thus the document "Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site", dated July 18, 2017, was written by the Radiation Safety Officer and approved by executive management. This report provides the results of the execution of this protocol.

II. Disposition of Radioactive Material

Per our license, we are authorized to hold radioactive material with a half-life of less than or equal to 120 days for decay-in-storage. The byproduct material handled is P-32 with a half-life of 14.3 days. The last shipment of irradiated teeth was received on November 10, 2016, the last generation of radioactive slurry was on January 4, 2017, and the last generation of planchets containing dried radioactive slurry was on January 5, 2017. Thus the most recent irradiated teeth, radioactive slurry, and radioactive planchets have been held for decay-in-storage beyond 10 half-lives. At the disposal date of June 16, 2017, for the most recent teeth, slurry, and planchets, the age was 218, 163, and 162 days, respectively. Per our license, before disposal as ordinary trash, byproduct material will be surveyed at the container surface with an appropriate survey meter set on its most sensitive scale and with no interposed shielding to determine whether its radioactivity cannot be distinguished from background.

The survey was conducted on June 15 and June 16, 2017 on all byproduct material by Ross Larson (RSO) and Nicole Engler (both authorized users per license). The survey meter used was Victoreen Model 493, serial number 765, set at the lowest setting (1), and last calibrated on June 13, 2017 by R. M. Wester Associates, 215 Indacom Dr., St. Peters, MO 63376 (NRC License 24-20091-01). The disposal record is attached and shows entries for date of disposal, date of storage, radio-nucleotides disposed and type of waste, survey instrument, background dose rate range in mR/hr, waste dose rate at surface in mR/hr, disposal signature, and witness signature.

The background dose rate was 0.00-0.06 mR/hr on June 15, 2017 and 0.00 to 0.05 mR/hr on June 16, 2017. The measured dose rate for all byproduct material was within these ranges. All byproduct material was indistinguishable from background, all radiation labels were removed, and all byproduct material was disposed of as ordinary trash. No byproduct material is present on our site.

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Results of the Execution of "Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site"

Page 2 of 3

Disposition of Radioactive Material (continued)

The following license-exempt sealed sources were transferred on September 15, 2017 to R. M. Wester & Associates, Inc., NRC license 24-20091-01, individual contact and phone number: Joseph D. Koch, 636-928-9628.

- 1) ^{210}Bi , 0.0187 μCi , 4/22/74, NEN
- 2) ^{210}Bi , 0.0213 μCi , 11/12/87, NEN
- 3) ^{14}C , 0.148 μCi , 7/29/83, NEN
- 4) ^{60}Co , 0.040 μCi , 11/18/82, NEN
- 5) ^{60}Co , 0.042 μCi , 7/14/87, NEN
- 6) ^{137}Cs , 1.04 μCi , 1/12/84, NEN
- 7) ^{90}Sr , 0.022 μCi , 4/11/83, NEN

No license-exempt sealed sources are present on our site.

III. Radiation Survey

On September 12, 2017, a radiation survey was conducted by Ross Larson and witnessed by Nicole Engler. The survey meter used was Victoreen Model 493, serial number 765, set at the lowest setting (1), and last calibrated on June 13, 2017 by R. M. Wester & Associates. The radiation survey covered the Second Floor Lab Area and Lower Level Radioactive Decay-in-Storage Area where NRC licensed material had been used and stored. All P-32 material had been properly disposed of prior to this survey. The background radiation was determined about 50 feet away from the licensed area and had the following readings:

Second Floor Lab Area: 0.00-0.06 mR/hr

Lower Level Radioactive Decay-in-Storage Area: 0.00-0.06 mR/hr

The result of the radiation survey was that no readings were outside of the background readings for the areas where NRC licensed material had been used and stored.

IV. Wipe Testing

After the survey referenced in Section III, wipe testing was performed per SOP No. 99.0, entitled "Radiation Safety Program". Diagram 99.A.0 (attached) depicts the areas where licensed materials were used or stored and the sites that were wipe tested. At each site, a 100 square cm area was swabbed using a water-moistened cotton tip swab and an aluminum 100 square cm template. Using a gas flow counter, the calibrator, blank swab, and each site test swab were analyzed 7 minutes for beta counts. The gas flow counter used was Tennelec APC-II, serial #71629,

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Results of the Execution of "Protocol for the Disposition of Radioactive Material and the Decommissioning of the Site"

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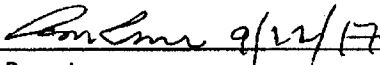
Wipe Testing (continued)

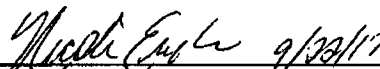
calibrated with license-exempt sealed source ^{90}Sr , 0.022 μCi , 4/11/83, NEN on the day of the wipe testing (September 12, 2017). The swabbing was performed by Ross Larson and witnessed by Nicole Engler. The gas flow counter was operated by Nicole Engler and witnessed by Ross Larson. The dpm/100cm² for the test site swabs was calculated by Ross Larson and the calculations were checked by Nicole Engler.


The wipe test report is attached. The dpm/100cm² ranged from 0.73 to 8.93 for the test site swabs. The limit is 200 dpm/100cm².

V. Conclusion

All radioactive material has been removed from our site. The radiation survey and wipe testing have demonstrated that any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA. Thus we request that our license be terminated and that our entire site be released for unrestricted use.

Submitted by  9/22/17
Ross Larson
Radiation Safety Officer

Submitted by  9/22/17
Nicole Engler
Licensed User

Reviewed by  9/22/17
Richard Gilbert
Vice President

Disposal Record of Radioactive Waste Byproduct Material
to ordinary Trash

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Date of Disposal	Date of Storage	Radionuclides Disposed and Type of Waste	Survey Instrument	Background Count Rate Range in mR/hr	Waste Date Rate at Surface in mR/hr	Disposed By	Witnessed By
3/10/10	4/25/07	P-32 Slurry 1 gal	Victor 443	0.01 → 0.05	0.04	Re	Wade Engle
3/10/10	11/1/07	P-32 Slurry 1 gal			0.04	Re	Wade Engle
3/10/10	4/25/07	P-32 Slurry 1 gal			0.02	Re	Wade Engle
3/10/10	4/27/07	P-32 Slurry 1 gal			0.02	Re	Wade Engle
3/10/10	4/25/07	P-32 Slurry 1 gal			0.04	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.04	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.02	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.04	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.04	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.01	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.02	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.05	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.02	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.01	Re	Wade Engle
3/10/10	2/4/09	P-32 Planchets			0.02	Re	Wade Engle
3/10/10	2/4/09	P-32 Planchets			0.05	Re	Wade Engle
3/10/10	2/4/09	P-32 Planchets			0.04	Re	Wade Engle
3/10/10	2/4/09	P-32 Planchets			0.02	Re	Wade Engle
3/10/10	2/4/09	P-32 Slurry 1 gal			0.05	Re	Wade Engle
End of disposal			Ross Larson	RSO	3/10/10		
4/15/17	8/2/11	P-32 Slurry 1 gal	Victor 443	0.0 → 0.06	0.02	Re	Wade Engle
	12/24/10				0.01	Re	Wade Engle
	12/24/10				0.03	Re	Wade Engle
	1/4/11				0.03	Re	Wade Engle
	12/24/10				0.0	Re	Wade Engle
	7/24/10				0.01	Re	Wade Engle
	12/24/10				0.0	Re	Wade Engle
	3/10/10				0.01	Re	Wade Engle
	3/10/10				0.03	Re	Wade Engle
	7/24/10				0.04	Re	Wade Engle

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Disposal Record of Radioactive Waste Byproduct Material To Ordinary Trash

Date of Disposal	Date of Storage	Radionuclides Disposed and Type of Waste	Survey Instrument	Background Count Rate Range in mR/hr	Waste Case Rate at Surface in mR/hr	Disposed by	Witnessed by
6/15/17	7/24/10	P-32 Slurry/Gel	Victor 493	0.0-0.06	0.02	Anders	Wright, Eagle
	10/24/10				0.02	Anders	Wright, Eagle
	3/10/10				0.0	Anders	Wright, Eagle
	7/24/10				0.0	Anders	Wright, Eagle
	7/29/09				0.0	Anders	Wright, Eagle
	10/25/09				0.01	Anders	Wright, Eagle
	10/28/09				0.0	Anders	Wright, Eagle
	10/28/09				0.02	Anders	Wright, Eagle
	10/28/09				0.0	Anders	Wright, Eagle
	8/2/11	P-32 Planchets			0.01	Anders	Wright, Eagle
	3/10/10				0.02	Anders	Wright, Eagle
	6/2/11				0.01	Anders	Wright, Eagle
	11/2/09				0.01	Anders	Wright, Eagle
	8/2/11				0.01	Anders	Wright, Eagle
	2/6/09				0.01	Anders	Wright, Eagle
	2/10/09				0.05	Anders	Wright, Eagle
	11/2/09				0.02	Anders	Wright, Eagle
	3/10/10				0.04	Anders	Wright, Eagle
	8/2/11				0.01	Anders	Wright, Eagle
	8/2/11				0.0	Anders	Wright, Eagle
✓	11/2/09				0.03	Anders	Wright, Eagle
End of disposal Anders, Ross Larson, 050 8/13/17							
6/16/17	2/7/13	P-32 Slurry/Gel	Victor 493	0.0-0.05	0.0	Anders	Wright, Eagle
	2/7/13				0.01	Anders	Wright, Eagle
	2/17/12				0.04	Anders	Wright, Eagle
	7/22/13				0.04	Anders	Wright, Eagle
	2/7/13				0.04	Anders	Wright, Eagle
	7/22/13				0.0	Anders	Wright, Eagle
	2/17/12				0.04	Anders	Wright, Eagle
✓	2/17/12				0.03	Anders	Wright, Eagle

Disposal Record of Radioactive Waste Byproduct Material To Ordinary Trash

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Date of Disposal	Date of Storage	Radioisotopes Disposed and Type of Waste	Survey Instrument	Background Dose Rate Range in mR/hr	Waste Dose Rate at Surface in mR/hr	Disposed By	Witnessed By
4/16/17	2/17/12	P-32 Slurry / Gel	Victor 493	0.0-0.05	0.01	John	Heidi Engle
	5/29/14				0.01	John	Heidi Engle
	2/17/12				0.04	John	Heidi Engle
	2/17/12				0.03	John	Heidi Engle
	2/17/12				0.02	John	Heidi Engle
	2/17/12				0.04	John	Heidi Engle
	2/17/12				0.04	John	Heidi Engle
	5/29/14	P-32 Planchets			0.01	John	Heidi Engle
	5/29/14				0.01	John	Heidi Engle
	5/29/14				0.01	John	Heidi Engle
	5/29/14				0.01	John	Heidi Engle
	5/29/14				0.01	John	Heidi Engle
	6/29/14				0.0	John	Heidi Engle
	7/7/15	P-32 Teeth			0.01	John	Heidi Engle
	7/7/15				0.01	John	Heidi Engle
	1/5/17				0.02	John	Heidi Engle
	1/5/17	P-32 Planchets			0.04	John	Heidi Engle
	1/4/17				0.01	John	Heidi Engle
	1/4/17				0.0	John	Heidi Engle
	1/4/17	P-32 Slurry / Gel			0.02	John	Heidi Engle
	1/4/17				0.04	John	Heidi Engle
	1/4/17				0.02	John	Heidi Engle
	1/4/17				0.03	John	Heidi Engle
	1/4/17				0.02	John	Heidi Engle
	1/4/17				0.01	John	Heidi Engle
	7/7/15	P-32 Planchets			0.01	John	Heidi Engle
	7/7/15	P-32 Teeth			0.01	John	Heidi Engle
	7/7/15	P-32 Planchets			0.01	John	Heidi Engle
	7/7/15				0.0	John	Heidi Engle
	12/2/15	P-32 Slurry / Gel			0.01	John	Heidi Engle

Disposal Record of Radioactive Waste Byproduct Material To Ordinary Trash

Date of Disposal	Date of Storage	Radioisotopes Disposed and Type of Waste	Survey Instrument	Background Radiation Rate in mR/hr	Waste Dose Rate at Surface in mR/hr	Disposed By	Witnessed By
6/14/17	12/2/15	P32 D-luciferase	Victorec 493	0.0-0.05	0.02	Paul	Wesley Engle
	7/7/15				0.03	Paul	Wesley Engle
	7/7/15				0.03	Paul	Wesley Engle
	11/7/14				0.02	Paul	Wesley Engle
	11/7/14				0.04	Paul	Wesley Engle
	11/7/14				0.05	Paul	Wesley Engle
	11/7/14				0.05	Paul	Wesley Engle
	7/7/15				0.03	Paul	Wesley Engle
	7/7/15				0.01	Paul	Wesley Engle
	5/9/14				0.05	Paul	Wesley Engle
	7/22/13				0.04	Paul	Wesley Engle
	7/22/13				0.03	Paul	Wesley Engle
	5/24/14				0.02	Paul	Wesley Engle
	7/22/13				0.04	Paul	Wesley Engle
	12/2/15				0.01	Paul	Wesley Engle
	End of disposal Paul, Ross Larson, RSO,						6/16/17

"Specializing In Your Radiation Safety Needs"

R. M. WESTER and ASSOCIATES, INC

215 Indacom Drive
St. Peters, MO 63376
(636) 928-9628
www.rmwest.com

September 15, 2017

Ross Larson
Missouri Analytical Laboratories, Inc.
1820 Delmar Blvd.
St. Louis, MO 63103 USA

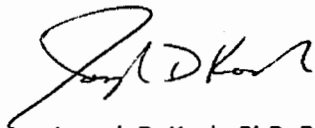
Dear Mr. Larson,

This letter is to confirm receipt of the following sources at R. M. Wester and Associates, Inc., NRC license 24-20091-01 on September 15, 2017:

- 1) ^{210}Bi , 0.0187 μCi , 4/22/74, NEN
- 2) ^{210}Bi , 0.0213 μCi , 11/12/87, NEN
- 3) ^{14}C , 0.148 μCi , 7/29/83, NEN
- 4) ^{60}Co , 0.040 μCi , 11/18/82, NEN
- 5) ^{60}Co , 0.042 μCi , 7/14/87, NEN
- 6) ^{137}Cs , 1.04 μCi , 1/12/84, NEN
- 7) ^{90}Sr , 0.022 μCi , 4/11/83, NEN

Please feel free to contact me if you need additional information.

Sincerely,



Joseph D. Koch, PhD, RPIH
Director of Operations
R. M. Wester and Associates, Inc.

Shipper's No. _____

Date: September 15, 2017Carrier: R. M. Wester and Associates, Inc.at 1820 Delmar Blvd., St. Louis, MOfrom Missouri Analytical Laboratories, Inc.

To:

Consignee: R. M. Wester and Associates, Inc.Shipper: Missouri Analytical Laboratories, Inc.Street: 215 Indacom Dr.Street: 1820 Delmar Blvd.Destination: St. Peters, MO Zip 63376Origin: St. Louis, MO Zip 63103Route: major roads and highways

Quantity and Unit of Material	HM	TD Subject	Description of Material	Hazard Class	PL Type	Radioactive Material, Activity or Amount	Weight, Volume or Measure	Class of Label
1 box	X	UN2910	Radioactive Material, Excepted Package,	7		1.332 uCi	5 lb	
			limited quantity of material					

Shipper: Missouri Analytical Laboratories, Inc.Carrier: R. M. Wester and Associates, Inc.Per: Ross Larson Date: 9/15/17Per: Joseph Koch Date: 9/15/17Signature: Ross LarsonSignature: Joseph KochEMERGENCY RESPONSE TELEPHONE NUMBER: 636-928-9628

This is to certify that the above named materials are properly classified, packaged, described, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per above signature.

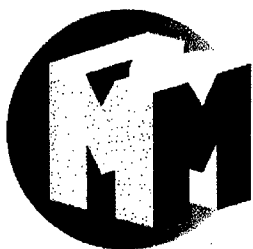
Diagram 99.A.0

BATTERY DEAD TUE SEP 12. 2017

GROUP C

SAMPLE SN CODE	TIME (MIN.)	ALPHA COUNTS	BETA COUNTS	ALPHA CPM	BETA CPM	TOD CLOCK HR:MM:SEC	
1	7.00	2	91417	0.28	13059.57	10:04:01	Calibrator
2	7.00	1	58	0.14	8.28	10:10:40	Blank (Background) Swab
3	7.00	5	83	0.71	11.85	10:17:19	Site 1 Swab
3	7.00	4	66	0.57	9.42	10:23:58	Site 2 Swab
3	7.00	1	75	0.14	10.71	10:30:38	Site 3 Swab
6	7.00	2	62	0.28	8.85	10:37:17	Site 4 Swab
7	7.00	1	60	0.14	8.57	10:43:56	Site 5 Swab
7	7.00	1	65	0.14	9.28	10:50:35	Site 6 Swab
9	7.00	0	74	0	10.57	10:57:15	Site 7 Swab
10	7.00	0	76	0	10.85	11:03:55	Site 8 Swab
11	7.00	0	64	0	9.14	11:10:35	Site 9 Swab

Other test swabs per survey result: No Radon 9/12/17
 Survey by: Radon 9/12/17 Witnessed by: Michael Engle 9/12/17
 Swabbed by: Radon 9/12/17 Witnessed by: Michael Engle 9/12/17
 Analysis (Counting) by: Michael Engle 9/12/17 Witnessed by: Radon 9/12/17



MISSOURI ANALYTICAL LABORATORIES, INC.

---CHEMISTS - MICROBIOLOGISTS---

1820 DELMAR BLVD.
ST. LOUIS, MO 63103-1798 U.S.A
TELEPHONE 314-241-8772
FAX 314-241-8775
rossl@missourianalytical.com

Wipe Test Report

Date of Swabbing: September 12, 2017

Swabbed by: Ross Larson

Witnessed by: Nicole Engler

Instrument: Tennelec APC-II, serial #71629

Instrument Efficiency: 40%

Area Swabbed: 100 cm²

Monitoring For: Phosphorus-32 beta counts

Counting Time: 7 minutes

Calibrator: ⁹⁰Sr, 0.022 μCi, 4/11/83, NEN

Article Counted	cp7m	cpm	cpm-blank	dpm/100 cm ²
Calibrator	91,417	13059.57	-	-
Blank Swab	58	8.28	-	-
Site 1 Swab	83	11.85	3.57	8.93
Site 2 Swab	66	9.42	1.14	2.85
Site 3 Swab	75	10.71	2.43	6.08
Site 4 Swab	62	8.85	0.57	1.43
Site 5 Swab	60	8.57	0.29	0.73
Site 6 Swab	65	9.28	1.00	2.50
Site 7 Swab	74	10.57	2.29	5.73
Site 8 Swab	76	10.85	2.57	6.43
Site 9 Swab	64	9.14	0.86	2.15
Other Swab	None	-	-	-

where dpm = cpm - blank (background)

0.40

Limit: 200 dpm/100 cm²

Submitted by Ross Larson 9/22/17
Ross Larson
RSO

Submitted by Nicole Engler 9/22/17
Nicole Engler
Licensed User

- ESTABLISHED IN 1965 *** ST. LOUIS, MISSOURI U.S.A. -