

State of Washington
Radioactive Materials License



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As stated in the Nuclear Energy and Radiation Act, Revised Code of Washington 70.98, and the Radiation Protection Regulations, chapters 246-220 through 246-254 of the Washington Administrative Code, and in reliance on statements and commitments made by the licensee identified below, a license is issued authorizing the licensee to transfer, receive, possess, and use the radioactive material authorized below; and to use such radioactive material for the purpose(s) and at the place(s) authorized below. **This license is subject to all applicable rules and regulations issued by the State of Washington Department of Health.**

1. Licensee Name: <p style="text-align: center;">R.J. LEE GROUP, INCORPORATED</p>	3. License Number: <p style="text-align: center;">WN-L0223-1 Amendment No. 23</p> <p>Fee Code 29</p>
2. Address: <p style="text-align: center;">Columbia Basin Analytical Laboratories 2710 North 20th Avenue Pasco, Washington 99301</p>	4. Expiration Date: <p style="text-align: center;">30 April 2025</p>
	5. Reference Number(s): <p style="text-align: center;">20-03-50, 20-05-17, 21-06-19.</p>

**6. Radioactive Material
(element and mass number).**

A. Radioactive material, atomic numbers 3 to 100, inclusive.

B. Technetium-99.

C. Radioactive material, atomic numbers 3 to 100, inclusive.

7. Chemical and/or Physical Form.

A. Liquid or solid.

B. Liquid, solid, or pertechnetate.

C. Fixed contamination.

8. Maximum quantity licensee may possess at any one time.

A. No single nuclide to exceed 370 kilobecquerels (10 microcuries).

Annual Possession Quantity not to exceed 1850 megabecquerels (50 millicuries).

B. 1480 megabecquerels (40 millicuries).

Annual possession quantity not to exceed 1480 megabecquerels (40 millicuries).

C. No single nuclide to exceed 1.85 megabecquerels (50 microcuries).

Annual Possession Quantity not to exceed 1.85 megabecquerels (50 microcuries).

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6. Radioactive Material (element and mass number).	7. Chemical and/or Physical Form.	8. Maximum quantity licensee may possess at any one time.
D. Cesium-137.	D. Liquid or solid.	D. 37 kilobecquerels (1 microcurie). Annual Possession Quantity not to exceed 37 kilobecquerels (1 microcurie).
E. Strontium-90.	E. Liquid or solid.	E. 37 kilobecquerels (1 microcurie). Annual Possession Quantity not to exceed 37 kilobecquerels (1 microcurie).

*** Annual Possession Quantity as defined in WAC 246-247-030(5).**

In addition to the restrictions in Item 6 and the possession limits in Item 8, the Licensee shall further restrict their possession of licensed material to quantities below the limits specified in WAC 246-235-150, Schedule C which require consideration of the need for an emergency plan for responding to release of licensed material and to quantities below the minimum limit specified in WAC 246-235-075 for establishing decommissioning financial assurance.

CONDITIONS

9. Authorized Use.
 - A. Nuclides which may be detected in analytical samples.
 - B. To be used as a tracer and/or standard for leachability studies.
 - C. Equipment containing fixed contamination.
 - D.-E. To be used for research and development as defined in WAC 246-220-010.
10. Radioactive materials shall be stored and/or used at Center for Laboratory Sciences at Columbia Basin College, 2710 North 20th Avenue, Pasco, Washington 99301.

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11. The licensee shall comply with the provisions of chapter 246-220 WAC, "Radiation Protection – General Provisions"; chapter 246-221 WAC, "Radiation Protection Standards"; chapter 246-222 WAC, "Radiation Protection – Worker Rights"; chapter 246-231 WAC, "Packaging and Transportation of Radioactive Material"; chapter 246-232 WAC, "Radioactive Material – Licensing Applicability"; chapter 246-235 WAC, "Radioactive Materials – Specific Licenses"; chapter 246-246 WAC, "Radiological Criteria for Decommissioning"; chapter 246-247 WAC, "Radiation Protection – Air Emissions"; chapter 246-249 WAC, "Radioactive Waste – Use of the Commercial Disposal Site"; and chapter 246-254 WAC, "Radiation Protection – Fees."
12. The Radiation Safety Officer for this program is Jacob W. Throolin.

The Assistant Radiation Safety Officer for this program is **Ronish Sharma**.
13. Radioactive material shall be used by or under the supervision of Jacob W. Throolin, Lyle Joseph Sears, Ph.D., and **Ronish Sharma**.
14. All individuals working directly with radioactive materials or frequenting radioactive materials use areas shall receive training commensurate with their duties and responsibilities before beginning work or frequenting the area and at least annually thereafter. At a minimum training shall include: health protection considerations of individuals and potential offspring; procedures to minimize exposure; purposes and functions of protective devices; company radioactive material work procedures; applicable state regulations and the conditions of this license. Documentation indicating the individuals trained, subjects, and dates shall be maintained for inspection by the Department.
15. The radioactive materials authorized in this license shall not be used in animals, human beings or in products distributed to the public.
16. The licensee shall conduct a personnel monitoring and bioassay program in accordance with the criteria set forth in chapter 246-221 WAC.
17. The licensee shall maintain security and control of all radioactive materials received and possessed under the license in accordance with WAC 246-221-150. Materials shall be secured from, or controlled in such a manner so as to prevent unauthorized access or removal from the place of storage.

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18. The licensee shall conduct a physical inventory every six months to account for all sealed sources, electro-plated or foil sources received and possessed under the license. The inventory shall include radionuclides, activities, source descriptions, serial numbers, locations, name of the person conducting the inventory, and the date of the inventory. The licensee shall maintain records for inspection by the Department.
19. The licensee shall maintain a documented running inventory of all unsealed radioactive materials received, possessed, used, transferred, and disposed of under the license. The records shall include radionuclides, activities, and disposition. Records shall be maintained for inspection by the Department.
20. All hoods used for storage and/or use of radioactive material shall have a flow rate that meets the manufacturer's specifications, with the hood sash at the specified working height. Hood flow rates shall be checked annually. A record of the annual flow-rate check shall be maintained for inspection by the Department.
21. Surveys for contamination shall be performed and recorded to prevent the spread of contamination, determine appropriate personal protective equipment, meet release criteria, transportation regulations, and demonstrate the effectiveness of emission controls.
 - A. Surveys for contamination shall be performed and recorded weekly in designated radioactive materials use areas when radioactive materials are being used, or after each use if use is sporadic.
 - B. Storage areas, including waste storage, shall be surveyed monthly, unless no material is being used. If radioactive materials are not being used, but are in storage only, then storage areas may be surveyed quarterly.
 - C. Surveys shall include a direct survey done with an appropriate survey instrument and a wipe survey counted with an appropriate instrument, except for low energy beta emitters. Low energy beta emitters, such as Hydrogen-3, Sulfur-35 and Carbon-14, require a wipe survey counted with a liquid scintillation counter or other appropriate system.
 - D. Contamination is considered above regulatory limits as stated in the removable wipe limits found in WAC 246-232-140 Schedule D. If contamination is above regulatory limits, the area shall be decontaminated, surveyed, and documented until contamination is no longer present.

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21. E. Wipe analysis results used for decommissioning or free release of equipment or facilities shall be converted to disintegrations per minute (dpm) using the nuclide specific efficiency. Contamination is considered above regulatory limits in accordance with the removable wipe limits found in WAC 246-232-140 Schedule D.

F. These records shall be maintained for three years as required in WAC 246-221-230.

22. Survey instruments shall be calibrated annually, but shall not exceed an interval of thirteen months, by persons specifically authorized by the Department, the U.S. Nuclear Regulatory Commission, or an Agreement State to perform such services.

Liquid Scintillation Counters and other non-portable counting systems used for contamination wipe analysis shall have a quality assurance (QA) program to assure the reliability and accuracy of their Counter/Analyzer. This QA assessment shall be performed at least annually and shall be documented and maintained for inspection by the Department. The QA assessment or calibration should demonstrate that the instrument is capable of detecting removable contamination at or below the levels found in WAC 246-232-140 Schedule D. The Licensee shall maintain these records for three years as required in WAC 246-221-230.

23. The Radiation Safety Officer shall perform an annual review of the radiation safety program for adherence to the conditions of the license, Title 246 WAC and ALARA concepts. A record of this audit shall be maintained for inspection by the Department.

24. In the event the licensee chooses to terminate, move, or vacate, the authorized use location, the licensee shall follow the applicable requirements in WAC 246-221-270, WAC 246-232-060, chapter 246-246 WAC, and WAC 246-247-080.

25. The licensee is authorized to transport licensed material in accordance with the provisions of Chapter 246-231 WAC, "Packaging and Transportation of Radioactive Material." The licensee shall also meet and maintain current U.S. DOT training requirements for shipping and receiving radioactive materials as stated in 49 CFR Part 172, Subpart H – Training; 172.700 through 172.704.

26. The licensee's emergency procedures shall follow those outlined in the Washington State Radiation Emergency Handbook revised May 2014, or subsequent revisions, or other procedures specifically approved by License Condition.

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27. The licensee shall respond in the manner, and within the time frame, specified to any and all Department correspondence necessary to keep the license and related information current.

Where the licensee has submitted proposed corrective action, such action shall be fully implemented in a timely manner, unless the Department has subsequently modified the licensee's proposed corrective action.

28. In accordance with chapter 173-326 WAC and WAC 246-249-020 "Site Use Permits", each licensee shall possess a valid and unencumbered site use permit prior to the transfer of radioactive waste, directly to or through an authorized licensed broker, for disposal of such waste at any commercial disposal facility in the state of Washington. In addition, the licensee shall comply with the permit requirements of the Washington Department of Health.

The Licensee shall retain a valid and unencumbered site use permit until the disposal facility or broker provides documentation stating that the radioactive waste has been accepted by the disposal facility. The licensee shall retain the records of disposal for the life of the company and for Department inspection.

29. The licensee is authorized to hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal in ordinary trash, provided the following conditions are met:
- A. Radioactive waste shall be surveyed prior to disposal:
 - at the container's surface with no interposed shielding.
 - with an appropriate survey meter set at its most sensitive scale, and,
 - the measured radiation is not distinguishable from background levels, and;
 - B. All radiation labels, markings and wording shall be removed or obliterated, and;
 - C. A record of each disposal shall be maintained. Records shall include: date material (container) was put into storage, radionuclides disposed, date of disposal, survey instrument used (including serial number), measured count rate (in counts per minute) on the surface of each waste container, background (in counts per minute) radiation level and name of individual performing survey.
30. To assure the facility remains in compliance with chapter 246-247 WAC, "Radiation Protection - Air Emissions:"

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30. A. The potential-to-emit dose to the maximally exposed individual must be evaluated every calendar year using the actual Annual Possession Quantity (yearly throughput) for each radionuclide. A Radioactive Air Emissions License is required if the dose from the COMPLY Code or CAP88-PC Code is 0.1 mrem/yr or greater from all nuclides.
- B. This COMPLY code or CAP88-PC code calculation may be performed annually and submitted to the Department by June 30 for the previous calendar year's emissions. If the parameters used for the code have not changed during the calendar year evaluation period the calculation is not required. If the calculation is not performed, the licensee is required to send the Department a statement that they have not exceeded the Annual Possession Quantity for each nuclide listed on the license. Both types of annual reports may be submitted by email to AIRRichland@doh.wa.gov, or by mail to 309 Bradley Boulevard, Suite 201, Richland, Washington, 99352.
- C. The Licensee must maintain these records for five (5) years as required in WAC 246-247-080(8).
- D. The licensee must notify the Department if there is a potential or actual increase in air emissions or other modification as defined in WAC 246-247-030(16).
31. Except as specifically provided by this license, the licensee shall possess and use radioactive material described in Items 6, 7, and 8 of this license in accordance with statements, representations and procedures contained in the documents listed below. The department's "Rules and Regulations for Radiation Protection" shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.
- A. Application and attachments dated 30 March 2020 & email and attachments on 19 May 2020. RE: Revision of attachment and additional information.
- B. Email and Attachments dated June 16 2021; RE: New ARSO.**

FOR THE STATE OF WASHINGTON DEPARTMENT OF HEALTH

Date: 13 July 2021

By: Morgan Bullock
Morgan Bullock MS
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