

(11-2016)

**U.S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE**

Amendment No. 0

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee 1. Water Remediation Technology LLC		In accordance with: letter dated December 21, 2016	4. Expiration Date: February ##, 2039
2. 5525 West 56 <sup>th</sup> Avenue Suite 100 Arvada, Colorado 80002		3. License Number: SUC-1591, amended in its entirety to read as follows:	5. Docket No. / Reference No.: 040-09059
6. Byproduct, source, and/or special nuclear material  Source	7. Chemical and/or physical form  Any	8. Maximum amount that licensee may possess at any one time under this license  No Limit	9. Authorized use  Removal of naturally-occurring uranium from current or potential drinking water sources, sources impacted by mining operations, drilling fluids or other solutions resulting from oil and gas exploration operations, and other groundwater or surface water sources as part of remediation or general water treatment operations
<p align="center"><b>CONDITIONS</b></p> 10. The Water Remediation Technology LLC (WRT) uranium water treatment program, including operation of its uranium removal system, media exchanges, and final disposition pathways, shall operate as specified in its December 21, 2016 transmittal letter and enclosed document entitled "Source Material License SUC-1591, Environmental Report in Support of a Multi-Site, Performance-Based License Renewal Application" (hence, Environmental Report) also dated December 21, 2016, as amended by WRT Responses to NRC Requests			

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for Additional Information, dated November 17, 2017, except where superseded by licensed conditions contained in this specific license or as otherwise approved in writing by the NRC. Whenever the words "will" or "shall" are used in the above referenced documents, it shall denote a requirement. As used herein, the term "Client" shall mean a person or entity that WRT has entered into a contract with to provide uranium removal services. The term "Client" is further defined to include all employees, agents and contractors of the person or entity that WRT has entered into a contract with to provide uranium removal services.

11. WRT shall establish the Safety and Environmental Review Panel (SERP) in accordance with the commitments in Section 3.14.2 of the Environmental Report. The SERP shall consist of a minimum of three individuals employed or appointed by WRT and a WRT employee shall be designated the SERP Chairperson. One member of the SERP shall have expertise in management and be responsible for managerial and financial approval changes; one member shall have expertise in operations and/or construction and shall have responsibility for implementing any operational changes; and one member shall be the Corporate Radiation Safety Officer with the responsibility of ensuring that changes conform to radiological safety and environmental requirements. WRT may include additional members on the SERP as necessary to address health physics or other technical disciplines and legal/regulatory issues. Temporary members or permanent members other than the three identified above may be consultants. Any corporate organizational changes affecting the assignments or reporting responsibilities described in the Environmental Report or in any other WRT licensing documents shall be reviewed and documented by the SERP.
12. WRT will be permitted to register and install new uranium removal systems at Client's facilities that will operate within the scope of the performance requirements delineated in Section 2.3 of the Environmental Report and meet the terms and conditions of this specific license. WRT must register, track the status of, and inform the NRC of all Client's facilities it enters into contracts with to provide uranium removal services, so that the number of such Client facilities, uranium removal systems, and their locations can be readily determined at any given time, including those operating under a general license pursuant to 10 CFR 40.22 and those operating under this specific license. Notification to the NRC shall be made by the last day of the month for any uranium removal system that becomes operational in the preceding month. The notification must contain the name and location of the Client's facility where the uranium removal system has become operational and include a description of the facility that houses or contains the uranium removal system as well as any ancillary facilities. The facility description shall, to the extent feasible, incorporate the information requested in Tables A.3.4 and A.3.5 of Appendix A, NUREG-1757, Volume 3, Revision 1. The SERP will review the Client's requirements and document the conclusion that such requirements are within the performance requirements set forth in the Environmental Report and meet the terms and conditions of this specific license.

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13. For all uranium removal systems that WRT is required by license condition to register, WRT, prior to installation of the uranium removal system, shall execute a contract with the Client that will require WRT to take title to the uranium source material as such source material is loaded onto the treatment media within the uranium removal system. WRT shall ensure that the contract shall include the following terms and conditions:
- (A) That at all times, the treatment media is and shall remain the property of WRT and that WRT will take title to the uranium source material as it is loaded onto the treatment media.
  - (B) WRT shall monitor the installation of the uranium removal system by the Client, and WRT shall be responsible for the initial activation of the uranium removal system to ensure its proper operation.
  - (C) That WRT shall be afforded access to the uranium removal system at all times.
  - (D) That the uranium removal system is contained within a secured site that complies with security requirements issued by the NRC.
  - (E) During the operation of the uranium removal system, WRT shall be responsible for all uranium removal system repair, maintenance and service activities that have the potential for contact with the licensed material.
  - (F) During the operation and decommissioning of the uranium removal system, WRT shall be responsible for the containment and remediation of any inadvertent release or spill of licensed material.
  - (G) WRT shall be responsible for all treatment media exchanges, including the removal of the final charge of spent treatment media and final disposition at an appropriately licensed facility at the termination of the operation of the uranium removal system (any unloaded treatment media may continue to be used by WRT at other sites).
14. Any uranium removal system installed by WRT under this specific license must be installed in either (A) a building or structure that existed prior to the Client entering into a contract with WRT for uranium removal services, or (B) a building or structure to be constructed by the Client in a previously cleared area located within a Client's facility or site, provided that the Client cleared the area prior to the Client entering into a contract with WRT for uranium removal services. A facility or site where a uranium removal system is to be installed must also be accessible to a public street, road or highway and to the extent that WRT relies upon a private road to either install or service the uranium removal system, such private road must have been constructed by the Client prior to entering into a contract with



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WRT for uranium removal services and such private road must have been constructed by the Client for a primary purpose other than installation and operation of a uranium removal system. Approval by the NRC of a license amendment to this specific license shall be a condition precedent for the installation of a uranium removal system at any Client's facility or site that does not meet the criteria of this license condition.

15. If a possible direct outlet to storm sewers, sanitary sewers, or drain field exists at the Client's facility where the uranium removal system will be operated, the uranium removal system will be designed and installed with a secondary containment system to protect against a release of any treatment media containing source material that could affect water resources. The uranium removal system shall not be located on the 100-year flood plain unless the SERP determines that the reasonably foreseeable impacts of any floods upon an installed uranium removal system, including any uranium- laden treatment media, can be appropriately mitigated through application of best management practices and other prudent measures.
16. The WRT Corporate Radiation Safety Officer shall possess the professional qualifications and shall satisfy the professional training requirements set forth in Sections 3.16.1.1 and 3.16.2.1 of the Environmental Report and Appendix D of NUREG-1556, Volume 18, Revision 1, before engaging in any corporate radiation safety officer activities.
17. The WRT field radiation safety officer and radiation control technicians shall, at a minimum, possess the professional qualifications and shall satisfy the professional training requirements for health physics technicians described in NRC Regulatory Guide 8.31 or for authorized users in Appendix D of NUREG-1556, Volume 18, Revision 1, before engaging in any licensed activities.
18. The WRT system specialists shall possess the professional qualifications and shall satisfy the professional training requirements set forth in Sections 3.16.1.3 and 3.16.2.2 of the Environmental Report before engaging in any licensed activities.
19. WRT will ensure that WRT Clients' managers and operators satisfy appropriate basic training requirements set forth in Section 3.16.2.3 of the Environmental Report before initiating licensed activities.
20. WRT will implement its radiation safety program as described in Section 3.16 of its Environmental Report. All training sessions and materials shall conform to the commitments in Section 3.16 of the Environmental Report and requirements in license conditions 16 through 19.

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21. WRT may, without NRC approval, make changes to the radiation safety program and standard operating procedures, and conduct tests or experiments, provided that they are reviewed by the SERP and WRT ensures that the following three conditions are met:

- (A) The change, test, or experiment does not conflict with any requirement specifically stated in this specific license or impair WRT's ability to meet all applicable NRC regulations.
- (B) WRT continues to comply with the safety or environmental commitments made in the Environmental Report or other licensing documents identified in license condition 10.
- (C) The change, test, or experiment is consistent with the NRC's findings in its environmental assessment and safety evaluation report.

If any of these conditions are not met, or if WRT seeks to change any conditions of this specific license or any of the performance requirements in Sections 2.3, 3.13, 3.14, 3.15, 3.16, 3.17, and 3.18 of the Environmental Report, or if WRT determines that the proposed installation and operation of any uranium removal system is outside the scope of such performance requirements, then NRC approval through a license amendment will be required.

22. Standard operating procedures shall be developed and followed for all licensed activities, including the handling of licensed materials during media exchange activities. The standard operating procedures shall also include provisions to prevent and to respond to the range of reasonably foreseeable potential accidents, such as a release or spill of licensed material. A copy of the current standard operating procedures shall be kept in the area(s) of the facility housing or containing the uranium removal system. The SERP will review and approve all standard operating procedures before they are implemented.
23. The SERP shall document all decisions and determinations required by this specific license and as set forth as commitments in the Environmental Report and make such documentation available for NRC inspection. WRT shall provide the NRC with annual reports of all such decisions and determinations. Records shall be maintained at the address listed in license condition 2 and reports shall be made in accordance with all applicable NRC regulations.

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24. All written notices and reports to the NRC required under this specific license shall be addressed in care of the Document Control Desk, Director, (Mail Stop T-5 A10), Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission, Washington D.C. 20555-0001, or by express delivery to 11545 Rockville Pike, Two White Flint North, Rockville, MD 20852-2738. Required telephone notification shall be made to the NRC Operations Center at (301) 816-5100 unless otherwise specified.
25. WRT will ensure that all uranium removal system equipment is installed properly before the commencement of licensed activities. After the commencement of licensed activities, WRT will ensure that no alterations are made to components of the uranium removal system that contain, or potentially contain, licensed material unless approved by either the SERP or the NRC, as required.
26. WRT will ensure that all equipment used for media exchanges are functional and operate within the specifications described in Section 3.17 of the Environmental Report. WRT system specialists will ensure that all media exchange activities are conducted in accordance with the written procedures required by license condition 22 and in a manner that minimizes potential releases of uranium-laden treatment media into the environment.
27. WRT shall, at a minimum, use a radiation monitoring program in as described in Section 3.16.5 of the Environmental Report.
28. WRT shall, at a minimum, use an environmental monitoring program and emergency response procedures as described in Sections 3.16 and 3.17 of the Environmental Report.
29. WRT shall, at a minimum, use a radiological contamination control program as described in Section 3.16 and 3.17 of the Environmental Report.
30. WRT shall, at a minimum, use security procedures and measures as described in Section 3.16.14 of the Environmental Report. WRT shall also comply with and implement, in conjunction with appropriate Client personnel, all applicable NRC and any Client security requirements.
31. To prevent any unauthorized persons from accessing the uranium removal system when unattended, the system shall be housed in a locked shed or locked structure, be within the locked Client facility, or be within a locked, fenced-in, and properly marked area at all times, in accordance with the requirements of 10 CFR Part 20, Subpart I.



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32. Prior to the initial operation of a uranium removal system, and prior to a re-start of a uranium removal system following any major overhaul or modification, WRT shall ensure the fire marshal or equivalent individual who has responsibility for the site has been contacted and provided instruction on uranium source material hazards and possible effects from a fire. The SERP shall document WRT's or the Client's contacts with the fire marshal or equivalent individual.
33. WRT shall, at a minimum, use transportation accident response standard operating procedures in accordance with the DOT-approved transportation contractor's response procedures. In the event of a transportation accident resulting in the release or spill of licensed material, WRT will conduct the appropriate follow-up accident site surveys.
34. WRT shall transfer uranium-laden (spent or fully loaded) treatment media only to properly licensed or permitted facilities for final disposition as described in Section 3.17 of the Environmental Report.
35. Uranium-laden (spent or fully loaded) treatment media shall not be stored at the Client's facility for greater than 60 days following a media exchange and shall only be contained within the ion exchange vessel or DOT-approved containers.
36. WRT shall conform its decommissioning activities to the methodology and requirements described in Section 3.18 of the Environmental Report and the NRC regulations in 10 CFR Part 20, Subpart E, and 10 CFR 40.42.
37. Before a uranium removal system becomes operational, WRT shall create, or caused to be created by the Client, a standby trust, acceptable to the NRC, for the uranium removal system located at a Client's facility. WRT shall obtain acceptable financial assurance mechanisms for site- specific Client facilities before the uranium removal system becomes operational. For Clients that are federal, state, or local government entities, WRT may obtain statements of intent or guarantees pursuant to 10 CFR 40.36(e)(4) in accordance with WRT license application dated September 27, 2005; subsequent supporting documentation dated August 14, 2006, August 30, 2006 and September 13, 2006; and Section 3.18.2 of the Environmental Report dated December 21, 2016. For private Clients, WRT will obtain acceptable financial assurance mechanisms pursuant to 10 CFR 40.36 in accordance with WRT license application dated September 27, 2005; subsequent supporting documentation dated August 14, 2006, August 30, 2006 and September 13, 2006; and Section 3.18.2 of the Environmental Report dated December 21, 2016.
38. The contract between WRT and each Client shall include the statement, "For purposes of this Agreement, the NRC shall be considered an intended third-party beneficiary of any financial assurance mechanism required for activities under this Agreement and shall be granted rights to enforce the provisions of such financial assurance mechanism for decommissioning or other related activities."

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39. WRT will prepare site-specific decommissioning cost estimates pursuant to the methodology delineated in Section 3.18.2 of the Environmental Report before initiating licensed activities. WRT will document such decommissioning cost estimates in its financial assurance mechanism for each Client. WRT will adjust decommissioning cost estimates pursuant to applicable NRC requirements, such as changes in engineering or design, and economic conditions, such as inflation, on a triennial basis or at license renewal.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Dated: \_\_\_\_\_

By: \_\_\_\_\_

John Tappert, Director  
Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards