

**SWM-SWP-P-142 - Radiological Waste Screening Criteria Memorandum of Understanding (MOU)
Between TDEC's Division of Radiological Health (DRH) and Division of Solid Waste Management
(DSWM) - 071321**

MOU Between DRH and DSWM on Department of Energy Landfills Waste - Policy

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EFFECTIVE DATE: 071321

SIGNATURES:



Lisa A. Hughey, Director, Division of Solid Waste Management
Approver



[Debra G. Shults \(Jul 14, 2021 15:55 CDT\)](#)

Debra G. Shults, Director, Division of Radiological Health
Approver



[Roger Fenner \(Jul 13, 2021 09:50 CDT\)](#)

Roger Fenner, Environmental Consultant 4, Division of Radiological Health
Reviewer



[Paula Plont \(Jul 13, 2021 10:45 EDT\)](#)

Paula Plont, Environmental Consultant II, Division of Solid Waste Management
Drafter / Preparer



[Jeremy Hooper \(Jul 12, 2021 14:19 CDT\)](#)

Jeremy Hooper, Environmental Consultant I, Division of Solid Waste Management
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Introduction

This Memorandum of Understanding (MOU) between the Division of Radiological Health (DRH) and the Division of Solid Waste Management (DSWM) confirms the understanding and agreed upon principles of these two Divisions concerning matters related to the waste material the U.S. Department of Energy Oak Ridge Reservation (DOE ORR) plans to send to one of its three operating landfills, including Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045), located at the Y-12 National Security Complex, and the potential for volumetric residual radioactivity to be present in this waste material. Based upon the information gathered in the September 25, 2001 meeting between members of DSWM and DRH, and the Tennessee Division of DOE Oversight with representatives of DOE, it has been determined that DOE ORR and its contractors have a program in place which is adequate to assure that waste materials with the potential for surface contamination that are proposed for landfill disposal will be adequately assessed to assure that the surface release criteria originally from Table IV-1 of DOE Order 5400.5 (as amended in November 1995 guidance), since superseded by DOE Order 458.1, are achieved. Furthermore, a working group comprised of individuals representing DOE ORR, DRH, and DOE Oversight has developed and agreed upon volumetric contamination screening criteria for 18 radionuclides, considered to be the most common constituents in the DOE ORR wastes.

This MOU pertains to three U. S. DOE Oak Ridge Landfills permitted by the Division of Solid Waste Management, specifically, Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083) and Construction and Demolition Landfill VII (DML010000045) (see "Technical Support Document: Authorized Limits for Disposal of Waste Containing Residual Radioactive Material at the U.S. Department of Energy Industrial Landfill IV, Y-12 Security Complex, Oak Ridge, Tennessee," "Sampling and Analytical Summary," "Volumetric Screening Criteria and Compliance Calculations for ILF-IV," "Technical Support Document for Screening Criteria for Residual Radioactive Material In Waste for Disposal at Industrial Landfill V and Construction/Demolition Landfill VII at the Y-12 National Security Complex," and "Volumetric Screening Criteria and Compliance Calculations for ILF-V and C/DL-VII").

This agreement is intended to provide a method to facilitate DSWM review of special waste applications for disposal of solid wastes that are shown to contain sufficiently low levels of residual radioactive material to allow disposal at the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045). Furthermore, the MOU is now updated to include all three DSWM-permitted DOE ORR landfills, located at the Y-12 National Security Complex, and is intended to provide documentation that the trained, professional staff of both Divisions have effectively reviewed and discussed this issue to assure that the placement of this waste material in the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045) provides protection for the environment and public health, safety, and welfare of the citizens of the State of Tennessee.

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Based on these efforts, DRH recommends acceptance of the radiological parameters of any special waste application from DOE for the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045) when the waste request, which will be sent to DSWM, contains one of the following assurance statements or an equivalent statement:

"This waste complies with applicable authorized limits, as provided in DOE Order 458.1, for release from radiological control and is appropriate for disposal at the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045). The waste has been fully characterized and found to meet the following criteria (use either Category 1 or 2 or a combination, as applicable):

- 1) This waste has been shown to meet the applicable surface contamination criteria from Table IV-1 from DOE Order 458.1 (formerly DOE Order 5400.5, as amended in November 1995 guidance), and the potential for volumetric contamination within the waste has been evaluated and found to be insignificant; or
- 2) This waste has been shown to meet the agreed upon screening criteria for volumetric contamination, as demonstrated in the Sampling and Analytical Summary and the Volumetric Screening Criteria and Compliance Calculations Spreadsheet for Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045) included with this waste request."

In addition to surface surveys and volumetric measurements, a third method, Process Knowledge, may be used for waste not originating in a contamination area. The precept of Process Knowledge is that the material/waste has been used in such a way as to preclude the potential for residual radioactivity to be present as a result of DOE operations. The use of Process Knowledge is as described on the Fact Sheet "Use of Process Knowledge for Release of Material to DOE Landfills." A special waste application from DOE for the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045) is also acceptable when that application contains the following, or equivalent, assurance statement:

"The potential for surface and volumetric contamination of the waste was evaluated and determined to be insignificant, based on process knowledge. Process knowledge of the waste was used to determine that the waste is not radiologically contaminated as a result of U.S. Department of Energy operations and that the waste is appropriate for disposal in the identified DOE landfill (i.e., Industrial Landfill IV, Industrial Landfill V, or Construction and Demolition Landfill VII). The process knowledge determination is applied only to materials which have not been within radiological contamination

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areas and is based on the known origin, use, and usage location of the materials. The process knowledge determination is not applied to legacy wastes or other materials for which the origin, use, or usage locations are not well known.”

DSWM will review all special waste applications from DOE to determine if the appropriate assurance statement, or an equivalent statement, is included with the special waste application or that the submitted materials meet the volumetric screening criteria established and the application is eligible for approval by DSWM. If a special waste application is submitted for materials that does not meet the volumetric screening criteria, DSWM will forward this request to DRH for a technical evaluation of the radiological aspects of the waste to determine if the individual application can be processed.

Conclusion

This MOU shall take effect immediately upon signing by the Directors of DSWM and DRH. With the execution of this MOU, DSWM and DRH agree to allow DOE to dispose of the waste material that meet the above criteria at the Industrial Landfill IV (IDL010000075), Industrial Landfill V (IDL010000083), and Construction and Demolition Landfill VII (DML010000045) as a special waste with relatively low residual radioactivity, as requested in a complete special waste evaluation form and presented with corresponding waste characterization data and approved by the DSWM, in writing, under this process.

REVISION HISTORY TABLE

Revision Number	Date	Brief Summary of Change
0	10/19/2001	Initial
1	10/18/2005	General updates
2	07/13/2021	Add a DOE landfill (i.e., IDL010000075) not found in previous versions.