



Notice of Violation: Chemical Waste Management

On February 13, 2020, ODOE issued a [Notice of Violation](#) for disposal of radioactive materials in violation of Oregon state law at the Chemical Waste Management hazardous waste landfill near Arlington. In consultation with other State of Oregon agencies, ODOE determined there is no current threat to landfill workers, the public, or the environment from this waste. ODOE directed the landfill operator to prepare a risk assessment to formally evaluate potential past, present, and future risk from the waste, and to develop a corrective action plan to outline the processes the company will put in place to prevent this from happening again. Read more [background here](#).

APRIL 2021 UPDATE

Chemical Waste Management of the Northwest submitted its final [risk assessment and corrective action plan](#) following ODOE's March Determination (see below).

MARCH 2021 UPDATE

On March 24, 2021 the Oregon Department of Energy [issued a determination](#) to Chemical Waste Management of the Northwest (CWM) in response to the company's [detailed risk assessment and corrective action plan](#) regarding radioactive materials that were [illegally disposed](#) in CWM's hazardous waste landfill outside Arlington, OR.

ODOE's determination accepts CWM's corrective action plan approach, with amendments to strengthen environmental monitoring and tracking of wastes entering the site. The document also includes written responses to public comments we received during a 60-day public comment period last fall. We appreciate the public's engagement and thoughtful comments, and incorporated some suggestions into the agency's determination.

In its corrective action plan, CWM presented two alternatives: 1. Leave the waste in place; or 2. Dig up the waste and move it to a disposal site out of state. CWM proposed, and ODOE concurs, that the first option to leave the waste in place, with additional environmental monitoring, is the best and safest option. Removing the waste, which is already buried within a landfill that includes other chemically-hazardous materials, would pose a considerably greater risk to landfill workers than leaving the waste in place. The risk assessment analysis showed that there would be no significant long-term risk to workers, the public, or the environment from keeping the waste buried.

As part of its corrective action plan, CWM has outlined a series of actions it will take to prevent this from happening again in the future, including installing a radiation portal monitor to scan waste entering the landfill to ensure shipments are not radioactive. Since the violation, ODOE

has worked with CWM to proactively review waste profiles of incoming materials and specifically, potentially-radioactive materials. Among other actions for the waste that is already in the landfill, CWM will regularly test what is known as leachate, a liquid material that collects at the bottom of the landfill and is recirculated to the top of the landfill to reduce dust in the dry environment.

Documents

- [ODOE Determination and Matrix of Public Comments](#)
- [Frequently-Asked Questions](#)

SEPTEMBER 2020 UPDATE

On September 1, 2020, Chemical Waste Management of the Northwest and its team of technical support contractors submitted the detailed risk assessment and corrective action plan. After completing our initial technical review, we have published the documents on our website for public review.

The Documents

(summary of documents available below)

- [ODOE Cover Memo](#)
- [Corrective Action Plan](#)
- [Risk Assessment](#)
- [Risk Assessment Addendum](#) (Submitted by CWM on September 28, 2020)

Public Comment Period

As of November 8th, 2020, the public comment period on the Risk Assessment and Corrective Action Plan has closed. The Department is reviewing the comments received and will provide responses alongside our formal determination regarding the acceptability of the landfill's proposed corrective and preventative actions.

September 30, 2020 Public Meetings

The Oregon Department of Energy held two public meetings on September 30, 2020 to discuss Chemical Waste Management's submitted documents. The two meetings, one virtual and one in-person, covered the same information.

- [Meeting Presentation](#) (PDF of PowerPoint)
- [Virtual Meeting September 30, 2020, 9 - 11 a.m.](#) (click to view video of the meeting)
- [In-Person Meeting September 30, 2020, 6 - 8 p.m. in Arlington](#) (click to listen to audio recording of the meeting)

Summary of the Documents

As described in the documents, CWM's preferred alternative is the in-place closure of the subject TENORM wastes (i.e., leaving the wastes where they are currently buried). CWM's Risk Assessment concluded that even in the event of multiple compounding worst-case scenarios, including a future resident living on a then-closed landfill surface and drinking water from a well at the edge of the landfill, the risk of cancer morbidity due to the radioactivity in these wastes

would be up to one in a million, but likely far less. Future concentrations in groundwater are also calculated to be well below drinking water standards. The risk to current and future workers resulting from leaving the buried waste in-place was found to be essentially zero. By contrast, CWM's analysis concludes that the decision to exhume the wastes and redispense them at another out-of-state facility would carry a number of uncertain and potentially serious risks resulting from the disturbance of the other hazardous chemical (non-radioactive) wastes legally disposed in the landfill.

CWM's assessment of the potential risk to landfill workers and members of the public associated with the original disposal of the wastes confirmed ODOE's prior assessment, with OHA and DEQ, that the risk to workers was exceedingly small, even in the unlikely event that the same person had been present at every disposal instance from 2016-2019. In addition, the risk to offsite members of the public would have been small enough as to result in essentially zero adverse health effects.

As part of the corrective action, Waste Management has proposed the installation of an automated radiation portal monitor to screen all future waste loads entering the site. The company has also already enacted a new waste verification process, which involves direct sampling and radiological measurement of representative wastes associated with each waste profile that may contain TENORM, followed by a check with ODOE to seek concurrence that disposal of the wastes represented by the waste profile is legal in Oregon. This two-step verification system will provide the company, and ODOE, greater confidence that the company is taking appropriate safeguards to operate the facility in accordance with Oregon statutes and rules.

COMPLETE TIMELINE AND OTHER RELEVANT DOCUMENTS:

- February 13, 2020: ODOE issues [Notice of Violation](#)
- February 2020: ODOE presents to the Oregon Legislature during session. February 20 [Senate Committee on Environment & Natural Resources](#). February 27 [House Committee on Energy & Environment](#).
- March 4, 2020: ODOE participates in two Town Hall meetings with the Gilliam County Court. Watch the Town Halls in [Condon](#) and in [Arlington](#)
- March 11, 2020: ODOE presents to the Confederate Tribes of Warm Springs regarding the Notice of Violation
- March 13, 2020: Chemical Waste Management [requests an extension](#) to submit the Corrective Action Plan and Detailed Risk Assessment
- March 27, 2020: ODOE [grants the extension](#); new due dates for the documents is September 1, 2020, with annotated agendas and other preliminary documents due April 30 and May 29.
- April 30, 2020: Chemical Waste Management submitted the following preliminary documents:
 - [CWMNW Final Gamma Survey Plan](#): an explanation of the survey plan for the specific disposal cell and for characterizing the radiological background of the area

- [Final Annotated CAP Outline Memorandum](#): an annotated outline of the Corrective Action Plan under development, including a description of the purpose of each document section and any key methods of analysis
- [Final Annotated Outline of the CWMNW Landfill Dose and Risk Assessment](#): annotated outline of the TENORM dose and Risk Assessment report under development, including a description of the purpose of each document section and any key methods of analysis
- [Final Overview and Approach to Groundwater Pathway Modeling](#): a site-specific discussion of the geology and hydrogeology of the impacted cell at the Chemical Waste Management Arlington facility and the potential for future migration of radionuclides to underlying groundwater resources or surface waters in the vicinity of the site
- [Final Summary of Preliminary Doses and Risk to Waste Handlers During TENORM Disposal](#): a detailed evaluation of past and present worker doses and risks during the TENORM waste disposals
- [Location-Specific Map](#): shows all subject TENORM wastes within the specific disposal cell, including a series of two-dimensional slices communicating key waste locations
- May 21, 2020: the Energy Facility Siting Council initiated a rulemaking project to revise Oregon Administrative Rules related to the enforcement of rules and laws governing the transport or disposal of radioactive materials and wastes in Oregon. A Rulemaking Advisory Committee will assist in developing rule updates. More information on the rulemaking process [is available here](#).
- May 29, 2020: Chemical Waste Management submitted the following preliminary document:
 - [Leachate Management Practices](#): This report describes the leachate management system at the landfill and looks specifically at whether the disposed TENORM waste has the potential to enter the leachate system at levels that would be significant to the health of workers or the public. Based on actual recent leachate samples, as well as extensive modeling and risk analysis, the report concludes that radiological doses from the leachate management practices at the landfill are extremely low and do not suggest that any changes are necessary to the current leachate management methods. The highest calculated effective dose attributed to a hypothetical landfill worker was 0.22 millirem per year, and the annual effective doses to the nearest resident were less than 0.005 millirem. These calculated doses are orders of magnitude less than the 25 millirem per year recommended dose limit by the American National Standards Institute (ANSI 2009) for unrestricted release of soils from land containing TENORM, and the 100 mrem per year public dose limit set by the Nuclear Regulatory Commission in 10 CFR § 20.1301.
- September 1, 2020: Chemical Waste Management submitted its [detailed risk assessment and corrective action plan](#).
- September 9, 2020: ODOE opened a 60-day public comment period (through November 8, 2020) on the documents. Comments may be submitted to ODOE.Comments@Oregon.gov
- September 28, 2020: CWM submitted [an addendum to its risk assessment](#)
- September 30, 2020: ODOE held two public meetings, one virtual and one in-person, to [present the information](#) in the CWM documents.
 - [Virtual Meeting September 30, 2020, 9 - 11 a.m.](#) (click to view video of the meeting)

- [In-Person Meeting September 30, 2020, 6 - 8 p.m. in Arlington](#) (click to listen to audio recording of the meeting)
- November 8, 2020: Public comment period closed.
- March 24, 2021: ODOE [issued a Determination to CWM](#), including a matrix of public comments received through November 8, 2020.
- April 2021: Chemical Waste Management submitted its [final risk assessment and corrective action plan](#), reflecting the adjustments outlined in ODOE's March Determination.