U.S. DEPARTMENT *of* ENERGY

Office of Environmental Management

Ensuring Sufficient Waste Disposal Capacity for the Oak Ridge Site

ENSURING SUFFICIENT WASTE DISPOSAL CAPACITY FOR THE OAK RIDGE SITE

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Current and planned disposal capacity is sufficient to meet needs

- The Department of Energy (DOE) operates several engineered landfills for safe and compliant disposal of Oak Ridge site remediation, demolition, and sanitary waste
  - Oak Ridge Reservation (ORR) Landfills IV, V, and VII are permitted by the Tennessee Division of Solid Waste Management
  - The Environmental Management Waste Management Facility (EMWMF) and planned Environmental Management Disposal Facility (EMDF) fall under the regulatory requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Each landfill/waste disposal facility has established waste acceptance criteria to determine whether waste is acceptable for disposal

DOE waste disposal decisions follow waste hierarchy

Recycle/Reuse

Materials identified and handled by the project

Sanitary Waste
Oak Ridge Landfills

Landfill IV: Classified, similar waste as Landfill V/VII
Landfill V: Sanitary materials
Landfill VII: Construction/Demolition debris

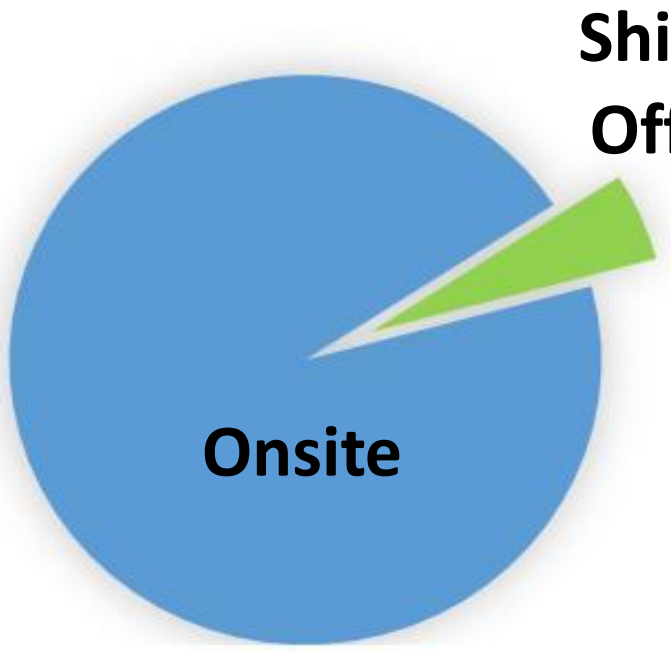
CERCLA Waste
EMWMF/EMDF

Low-level radiological- and/or chemical-contaminated soil and demolition debris and equipment

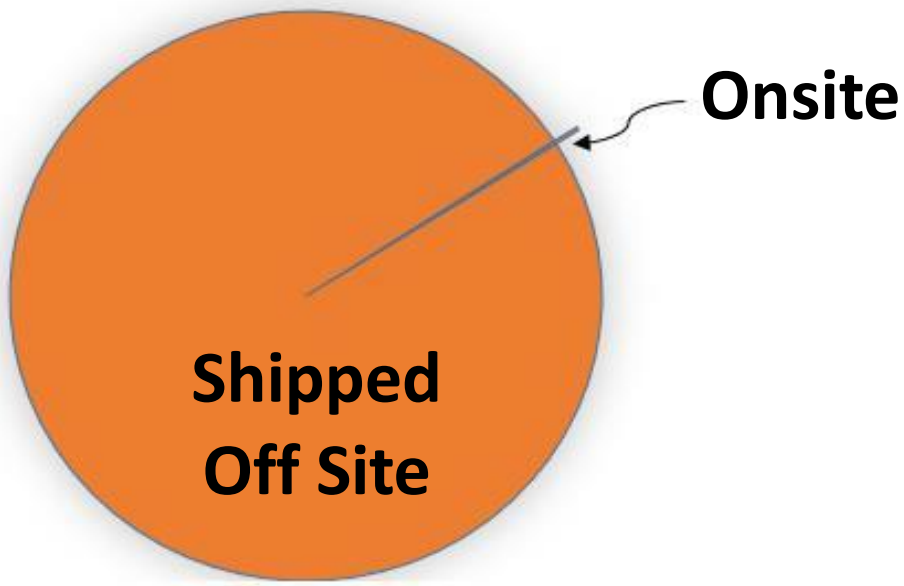
Ship Off Site

Waste that does not meet OR disposal facilities acceptance criteria

The high-hazard radioactive waste is disposed off site by DOE

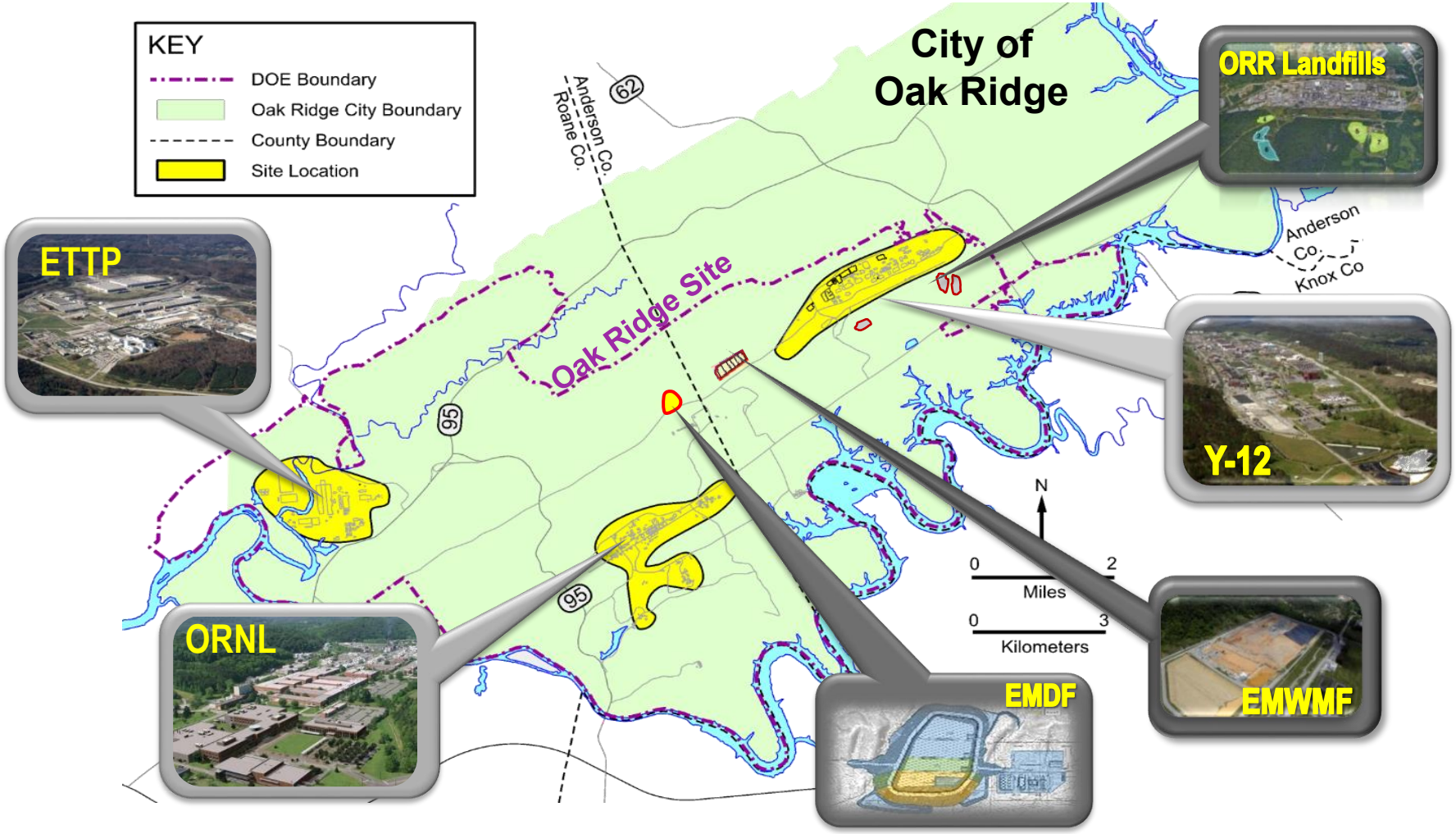


By Volume



By Radiological Activity

DOE uses multiple onsite disposal facilities to support cleanup operations



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Landfills/EMWMF are located within DOE-controlled areas

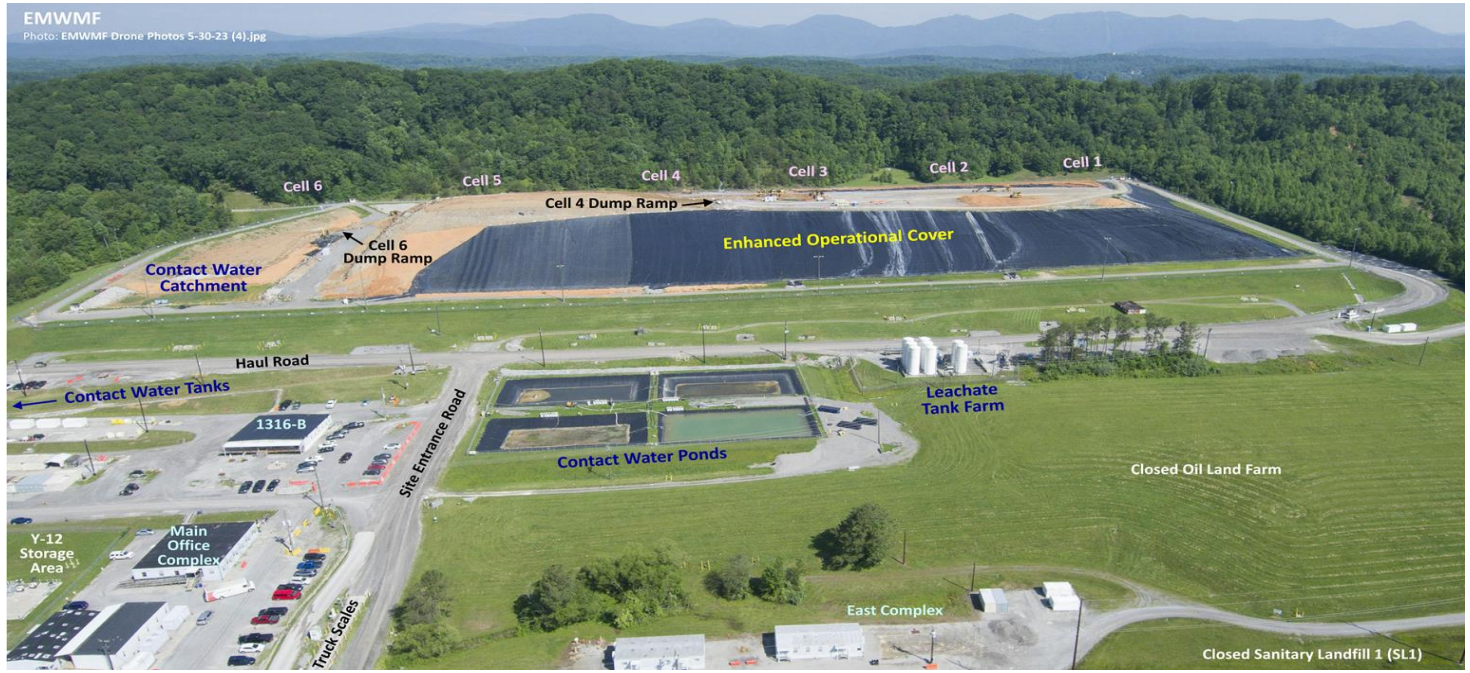
Onsite disposal availability has been key to the successful cleanup of East Tennessee Technology Park (ETTP)

ETTP Before Cleanup

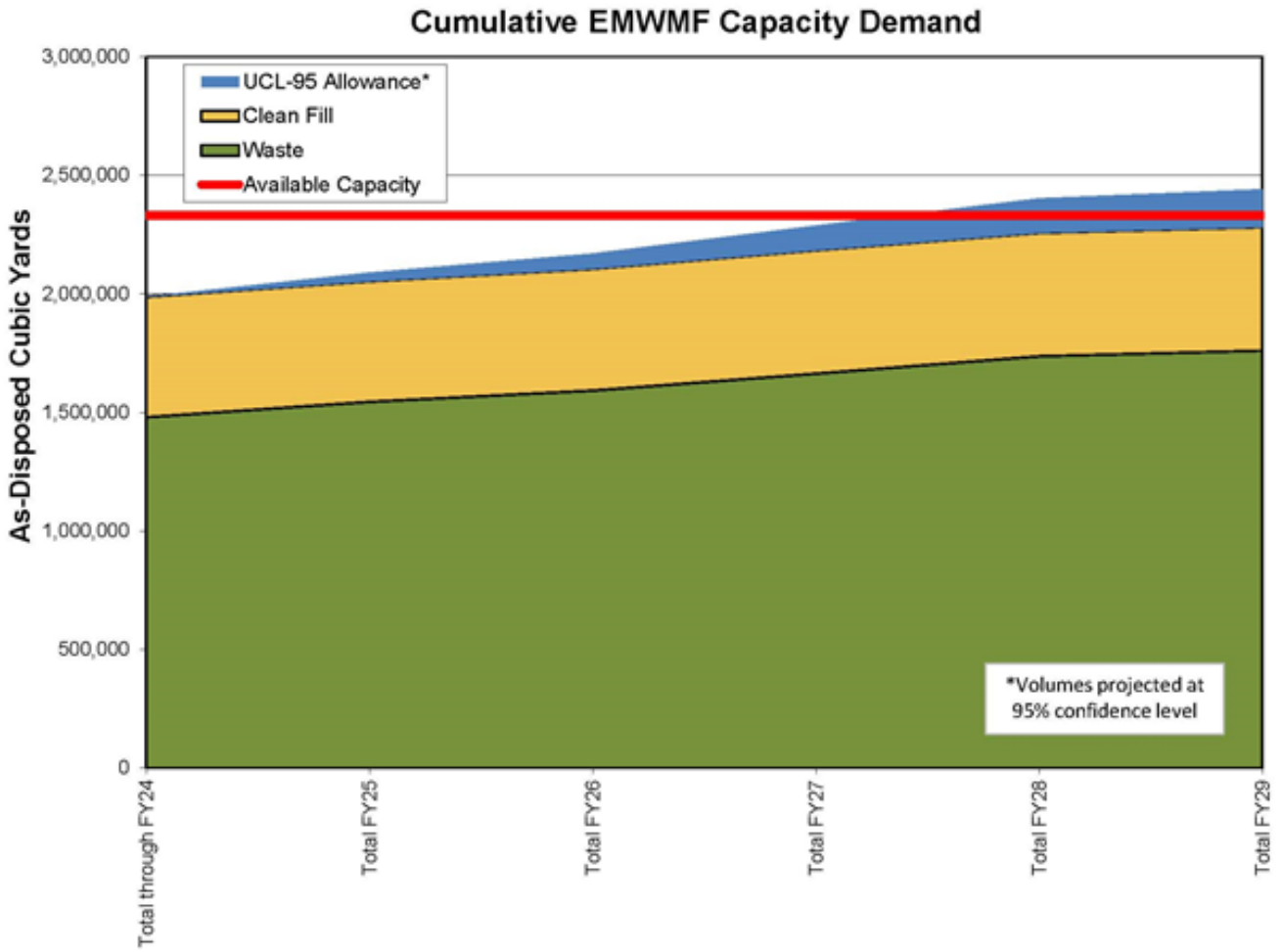
ETTP After Cleanup

EMWMF remaining capacity is not sufficient to complete Oak Ridge National Laboratory (ORNL) and Y-12 cleanup

- 28-acre waste disposal footprint, opened in 2002
- Lined disposal cells receive low-level radiological and chemical waste from CERCLA cleanup of Oak Ridge site
- Approximate total capacity of 2.3 million cubic yards
- Currently about 86% full
- Projected to be full in late 2020s/early 2030s



EMWMF projected capacity nears zero at end of 2020s/early 2030s



Additional waste disposal capacity allows for continued progress at ORNL and Y-12

Anticipated cleanup scope at Y-12

Anticipated cleanup scope at ORNL

- Over 200 buildings to be demolished at Y-12 and ORNL
- Oak Ridge contains DOE's largest inventory of high-risk facilities
- These facilities present hazards and occupy space needed to support current day research and national security missions

Additional capacity is needed for Y-12 and ORNL CERCLA cleanup

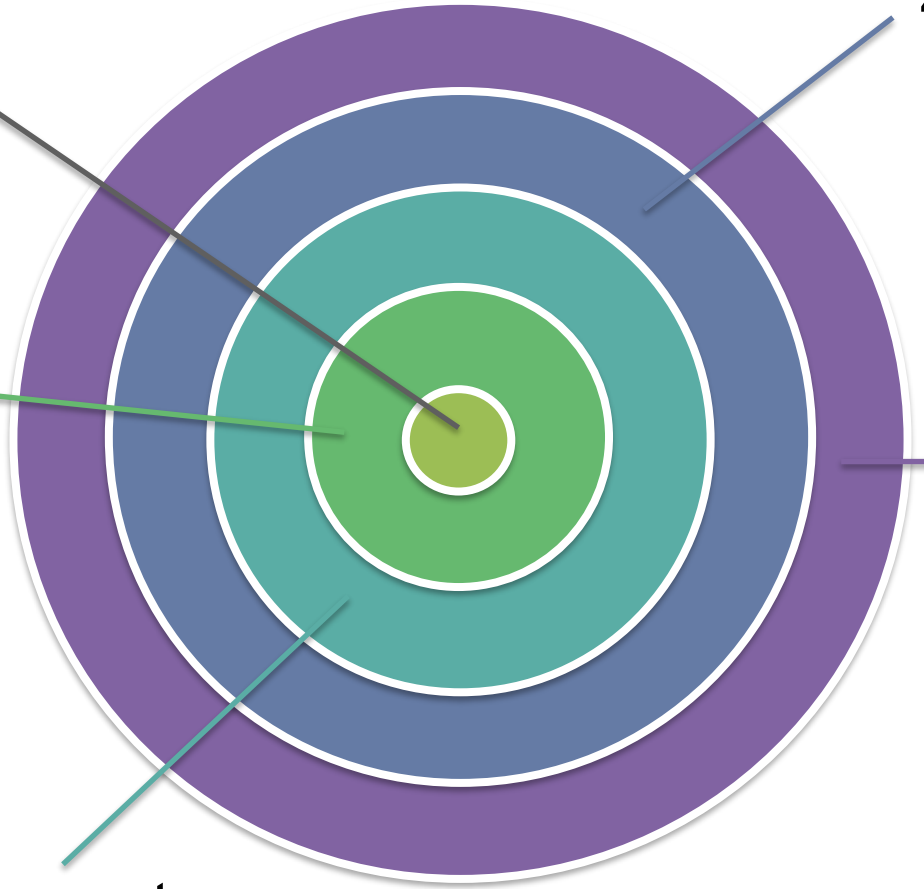
- Permitted ORR Landfills
  - Constructed in phases to reach buildout of permitted capacity
  - Additional area at Landfill V constructed in 2023
- EMDF (Low-Level CERCLA Cleanup Waste)
  - Chosen site is located at Central Bear Creek Valley
  - Projected disposal capacity is approximately 2.2 M yd^3
  - Record of Decision was signed September 30, 2022
  - Projected to be operational by late 2020s

Systems Approach to waste disposal provides multiple layers of protection

1. Site Selection
   - Siting
   - Characterization

2. Design and Construction
   - Engineered Barriers
   - Construction QA/QC

3. Performance Assessment

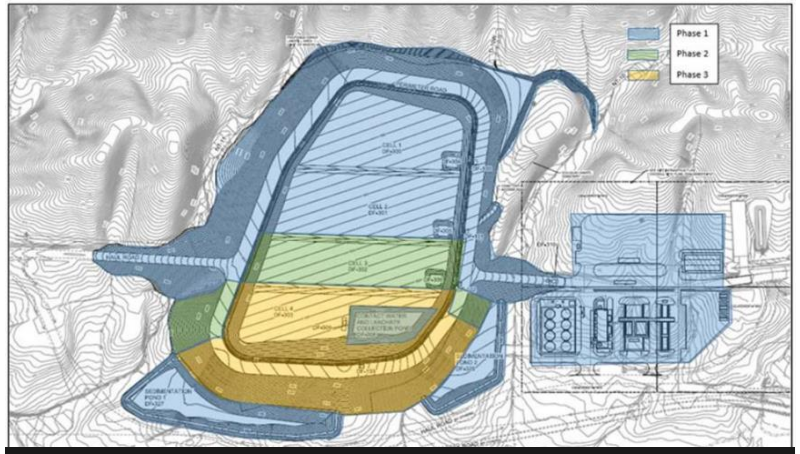


4. Site Operations
   - Waste Acceptance Criteria
   - Rigorous Waste Characterization
   - Generator Certification Program
   - Wastewater Management

5. Performance Assurance
   - CERCLA 5-Year Reviews; DOE Order 458.1, Radiation Protection of the Public and the Environment
   - Active/Passive Institutional Controls
   - Monitoring

Steps remain before EMDF Balance of Construction can begin and waste disposal start

- DOE Regulatory Approval
  - Disposal Authorization Statements approval prior to waste disposal
- CERCLA Approval Process
  - Early Site Preparation: Remedial Design Work Plan (RDWP) / Remedial Action Work Plan (RAWP) approved April 2023
  - Groundwater Field Demonstration RDWP/RAWP approved October 2023
  - Support Facilities and Infrastructure (SF&I) Remedial Design Report (RDR)/RAWP to be submitted July 2026
  - Landfill Wastewater Treatment System (LWTS) RDR/RAWP to be submitted March 2027
  - Balance of Construction:
    - Landfill Remedial RDWP approved October 2024
    - Landfill RDR/RAWP to be submitted by April 2027



EMDF Conceptual Design

EMDF Fieldwork Progress and Schedule

- Early Site Preparation:
  - Started: August 2023
  - Completed: May 2024
- Groundwater Field Demonstration Construction:
  - Started: February 2024
  - Monitoring to be completed April 2026
- SF&I:
  - Started: January 2026
- LWTS:
  - Scheduled to begin in 2027
- Balance of Construction:
  - Scheduled to begin in 2028

OREM is committed to continued outreach

- Meetings with members of the public began in 2015
- OREM offered an initial 120-day public comment period
  - Included public info sessions in Fall 2018
  - Formal public meeting in November 2018
  - Outreach with local government
- OREM offered a 30-day public comment period in Spring/Summer of 2022 that addressed:
  - Water quality protection
  - Site groundwater characterization
  - Waste acceptance criteria

OREM hosted a tour of the EMDF project site in July 2024

- OREM will continue hosting events and sharing updates to the public on progress

QUESTIONS?

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