Hanford Advisory Board
River and Plateau Committee

Environmental Restoration Disposal Facility (ERDF)

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ERDF Vertical Expansion Project

• Vertical Expansion allows for continued disposal of Hanford waste without a change in tempo of disposal operations.
  – Current ERDF cells (10) have a combined capacity of 18 million tons and contain 17.5 million tons of waste.
  – Without expansion, ERDF will be filled to capacity in 2017.
  – Excavating and constructing a new disposal cell takes approx. two years and costs approx. $30 million.
  – Vertical expansion will provide additional waste disposal capacity equivalent to one super cell (approx. 3.6 million tons).
  – Vertical expansion will cover existing cells and future cells.
ERDF Vertical Expansion

- The engineering design for vertical expansion meets regulatory requirements.
- The existing ERDF liner, leachate collection, and instrumentation systems (lysimeters) will support vertical expansion.
- Expanding the landfill vertically will avoid an estimated $30 million in costs to construct another disposal cell.

Conceptual view showing the vertical expansion of the Environmental Restoration Disposal Facility (ERDF)
ERDF Vertical Expansion (cont’d)

- ERDF cells 1-4 have been filled and are protected with an interim cover.
- Cells 5 and 6 are full. Cells 7-10 are nearly filled to capacity.
- The cover over cells 1-4 will be removed or penetrated to ensure leachate generated from waste in the vertical expansion infiltrates into the underlying waste and leachate collection system.
ERDF Vertical Expansion (cont’d)

- Vertical expansion will result in a 20-foot elevation increase.
- The uppermost surface of the waste fill will be shaped to form a crown and will be covered with a 2-percent grade and 12-percent side slopes.
- Surface water runoff (liquid that has not contacted waste) will continue to be controlled to minimize contact with waste.
- Fixatives, vegetative cover, aggregate surfacing, berms, and surface grading will continue to be used to minimize erosion.

![South-North Section at Center of Cells 9 & 10](image-url)
In-Trench Treatment – Safe and Simplified Operations

• In-trench treatment uses one method (grout) for all waste forms.
• Waste is never moved after treatment, assuring the integrity of macro-encapsulation.
  – Contaminant migration potential is eliminated upon completion of grouting
  – Curing process is complete in seven days
• Waste handling is at absolute minimum – one time
In-Trench Treatment – Safe and Simplified Operations (cont’d)

• Benefits of in-trench treatment
  – Disposal cell area is compliant and protects environment
  – More room to work: Not confined to small operations areas
  – Workers further from waste
  – Lower treatment cost

• Summary
  – Waiver approved in December
  – Controls and procedures are being finalized
  – In-trench treatment will begin soon
ERDF Leachate

- ERDF leachate is currently transferred by pipeline to the Effluent Treatment Facility in the 200 East Area for treatment (ERDF is in the 200 West Area).
- The 200 West Area Pump and Treat Facility was added as an option for the treatment of ERDF Leachate.

Two new leachate storage tanks were constructed at ERDF in 2011.
ERDF Leachate (cont’d)

• EPA and DOE issued an Explanation of Significant Differences in October authorizing treatment of ERDF leachate at 200 West Pump and Treat Facility
• ERDF leachate pump station will be upgraded with new pumps and controls to transfer leachate
• CH2M HILL Plateau Remediation Company will construct upgrades to allow for first transfer as early as May

Aerial of Environmental Restoration Disposal Facility in October