

*River Corridor
Closure Project*



U.S. Department of Energy
Richland Operations Office

River and Plateau Committee

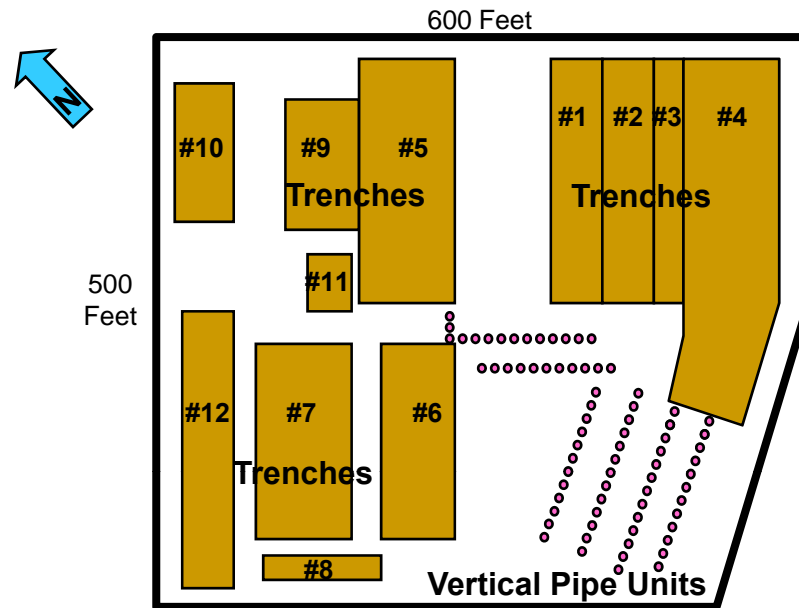
618-10/11 Burial Grounds and 324 Building Update

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U.S. Department of Energy

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618-10 Burial Ground Background

- The six-acre burial ground is located about six miles north of Richland
- Wastes from 300 Area laboratories and fuel development facilities were disposed in the burial ground from 1954 to 1963
- Low-activity wastes were primarily disposed in 12 trenches. Moderate and high-activity wastes were disposed in 94 vertical pipe units (VPUs).
- The VPUs typically were constructed by welding five bottomless drums together
- Remediation of the trenches began in April 2011. The trenches are expected to contain 2,000 to 4,000 drums.



Waste was dumped directly into trenches at the 618-10 Burial Ground.

618-10 Burial Ground Progress

- More than 50,000 bank cubic meters have been excavated during trench remediation
- 108 drums have been unearthed and are being processed
 - 62 concreted drums
 - 40 drums containing chips and oil
 - 1 containing oil
 - 5 others
- 221 bottles containing liquids have been found – thousands are expected. A new method for processing the bottles en masse was developed to reduce releases to the environment and risks to workers. Processing is expected to begin in December.
- Contamination is being controlled by using radiological and hazardous waste zones and controls, use of fixatives, and maintaining uncontained hazardous materials below grade
- Air monitoring is being conducted for radiological and chemical constituents
- Dust suppression water is being managed to protect groundwater
- VPU remediation technology is under development



618-10 Burial Ground

618-10 Burial Ground Schedule

- Trench excavation is scheduled to be completed fall 2012
- VPU remediation is scheduled to begin fall 2012
- Trench excavation load-out is scheduled to be completed December 2012
- Sampling and closeout is scheduled to be completed September 2014



Mock-up exercises were conducted before the start of trench remediation.



Trench excavation began in April 2011.



Nonintrusive characterization activities were performed.

618-11 Burial Ground Background

- The burial ground is located about seven miles north of the 300 Area, next to Energy Northwest's (ENW's) Columbia Generating Station
- From 1962 to 1967, low- to high-activity wastes from the 300 Area were disposed in the burial ground
- Waste was disposed in three 900-foot trenches, 50 VPUs and four large caissons



The 618-11 Burial Ground is adjacent to Columbia Generating Station.



Workers dispose of waste into a vertical pipe unit.

618-11 Burial Ground Progress

- In June, WCH completed nonintrusive characterization activities
- During nonintrusive characterization:
 - Geophysical surveys determined the burial ground contains 50 VPUs and 4 caissons
 - Two cone penetrometers (CPT) were installed about 6 to 8 inches from the exterior of each VPU
 - A gamma-logging instrument was inserted into each CPT
 - Measurements performed starting at the bottom of each CPT in 1 foot increments
 - Results: contamination typically located near the bottom of the VPUs
 - 18 VPUs <100 mR/hr
 - 18 VPUs 100 mR/hr to 1R/hr
 - 14 VPUs >1 R/hr up to 9 R/hr
 - Elevated contamination was not detected below the VPUs
- Characterization report was issued in August and a workshop conducted to review the data in support of VPU remediation planning
- Construction of a new interchange into the burial ground was completed
- Technology being developed for VPUs at 618-10 and lessons learned will also be used at 618-11



Two cone penetrometers were installed next to each vertical pipe unit.

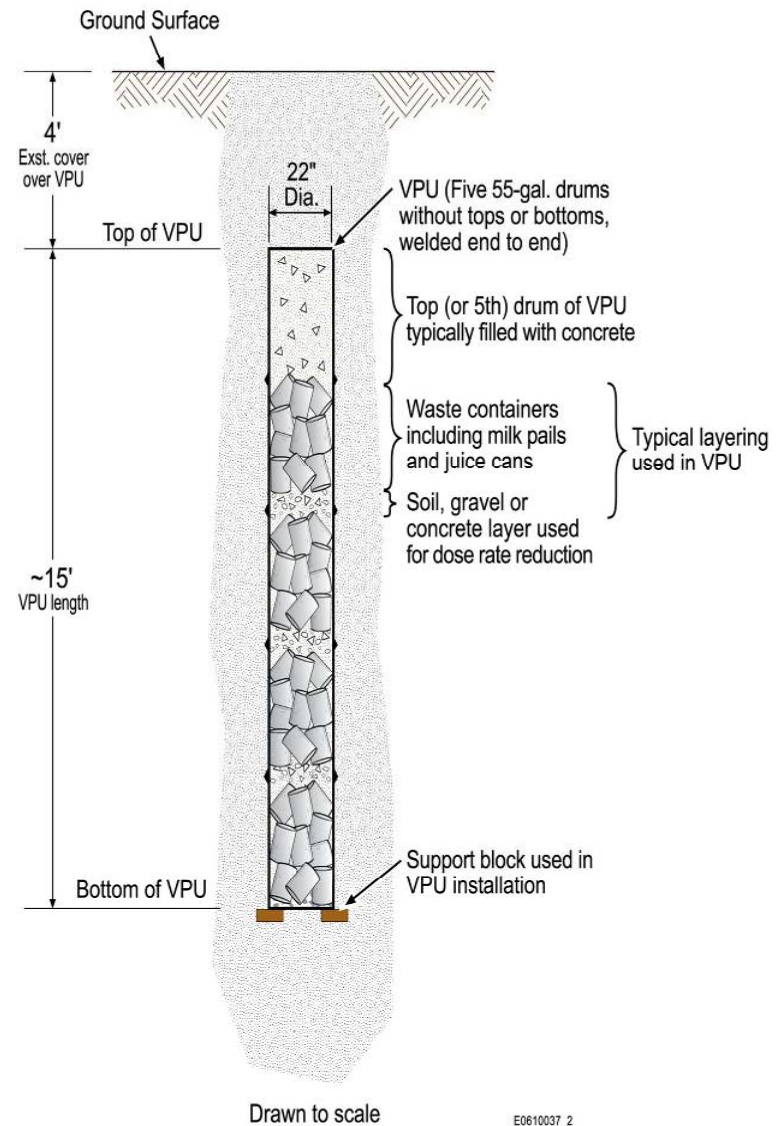


Geophysical surveying.



618-11 Burial Ground Schedule

- Infrastructure work is scheduled to begin this spring. WCH is currently evaluating bids for the work.
- WCH submitted safety basis documents to support ENW's License Amendment Request for remediation activities
- Trench remediation is scheduled to begin April 2013
- Caisson remediation is scheduled to begin June 2013
- VPU Remediation is scheduled to begin August 2013
- Sampling and Closeout is expected to be completed in September 2015



324 Building



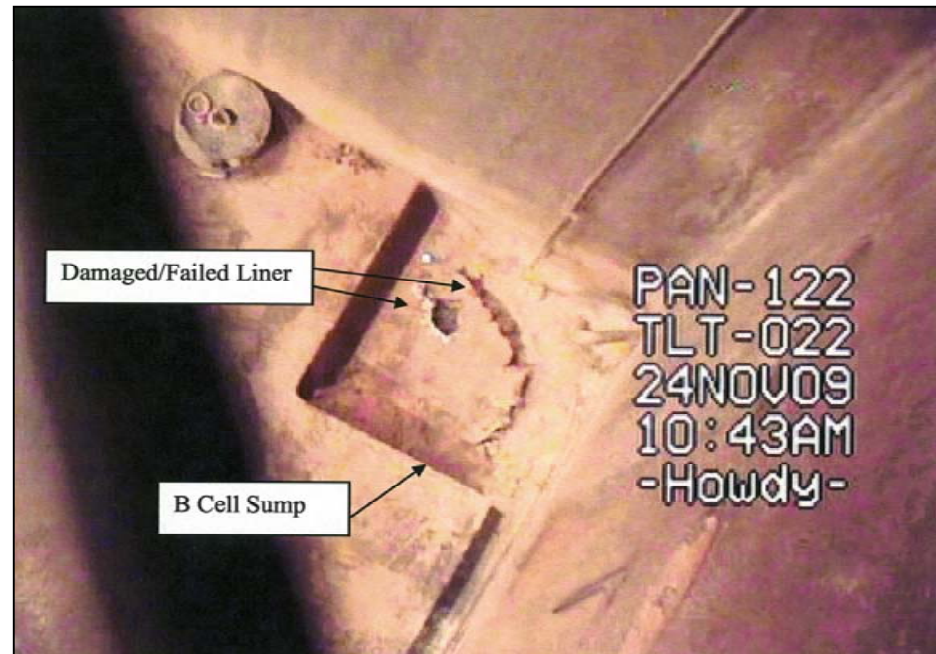
324 Facility Background

- Hazard Category 2 Nuclear facility
- The 324 Building is located in the 300 Area and began operation in 1965, ceasing research operation in 1996
- 324 is the most complex and hazardous research facility being demolished along Hanford's river corridor
- Hot cells are contaminated from research with high-levels of radioactive material
- A significant spill occurred in B-Cell in the mid-1980s
- B-Cell cleanout and stabilization conducted from mid-1990s through 2010

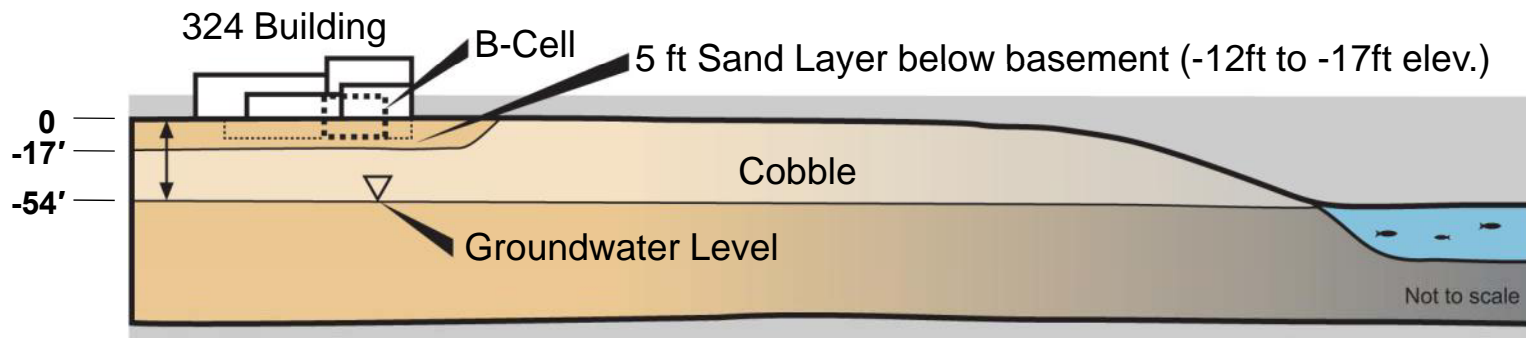


Soil Contamination

- Grout removed from B-Cell trench and sump (November 2009) uncovered a breach in the liner
- Dose profile of B-Cell floor showed 14,400 R/hr at failed location in sump floor
- Breach constituted a changed condition
- Planning began to determine if a new hazard was located beneath the building

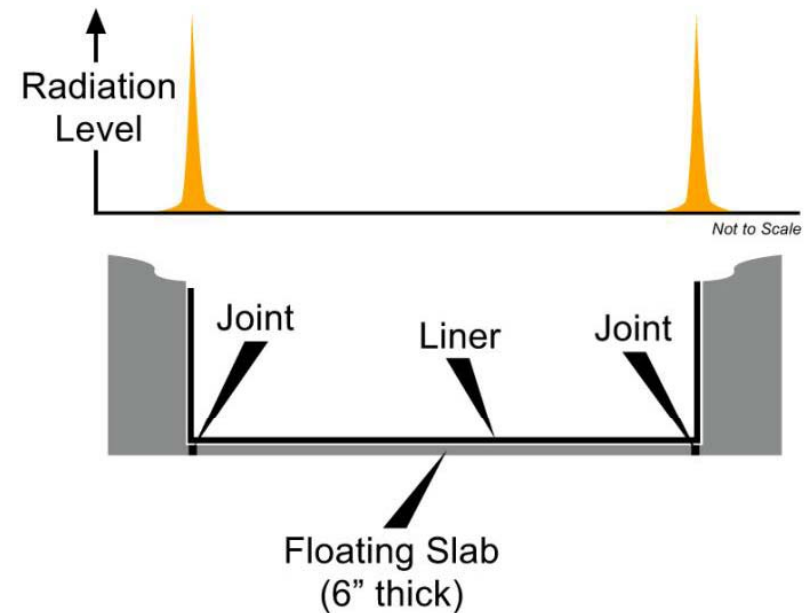


324 Facility Background



Soil Contamination (cont'd)

- Installed closed casings using Geoprobe through sand under B-Cell to gather dose measurements
- November 2010 obtained reading from closed casing as high as 8,900 Rad/hr
- High dose measurements followed the perimeter of the B-Cell floor expansion joint
- Little or no contamination detected beneath center of cell or outside cell footprint
- Established environmental controls to ensure the hazardous material does not pose a risk to workers



Soil Contamination (cont'd)

- Additional characterization performed with larger push unit to determine bottom edge of contamination plume
- Physical samples retrieved in June 2011 for laboratory analysis after extensive mockups and practice with long-handled tooling and containment sleeving
- Two samples collected/analyzed from different elevations under the sump
- Sample results indicate that the highly contaminated soil can be retrieved and packaged in a form that should be suitable for disposal at ERDF

Remediation Alternative Study

- During soil characterization efforts, technical team established to evaluate remediation alternatives
- Technical team chartered to:
 - Establish grading criteria early in the process (eliminate biased thinking)
 - Obtain regulator and DOE buy-in to the evaluation process
 - Search the DOE complex and beyond for remediation methods
 - Shortlist the applicable remediation methods then apply the grading criteria once laboratory data became available

Path Forward – Timeline

Activity	Date
Contractor Senior Management Review	November 8, 2011
Present Approach to DOE	November 22, 2011
Present Approach to Regulators	Early December
Decision Point Keep Building or Demolish	December
Complete Remediation Alternative Selection Report	December
Transmit to DOE-HQ (Technical Assist Group)	December
Initiate RFP Preparation	December

Path Forward – Timeline (cont'd)

Activity	Date
Receive/Address Comments from TAG	January
Finalize Remediation Methodology Selection	February
Issue RFP	March
Receive Proposal from Bidders	May
Issue Subcontract to Remediate Soil	June