STABILIZING DISPOSAL STRUCTURES AT RISK OF FAILURE

Planned actions for stabilization of 216-Z-2 Crib, 241-Z-361 Settling Tank and 216-Z-9 Crib

Fact Sheet

The U.S. Department of Energy is preparing to fill three underground liquid waste disposal structures with engineered grout to prevent their collapse and the potential to spread contamination. The stabilization work is planned to be done as a Time Critical Removal Action under the Comprehensive Environmental Response, Compensation and Liability Act. This fact sheet outlines the actions planned to ensure the protection of workers, the public and the environment.

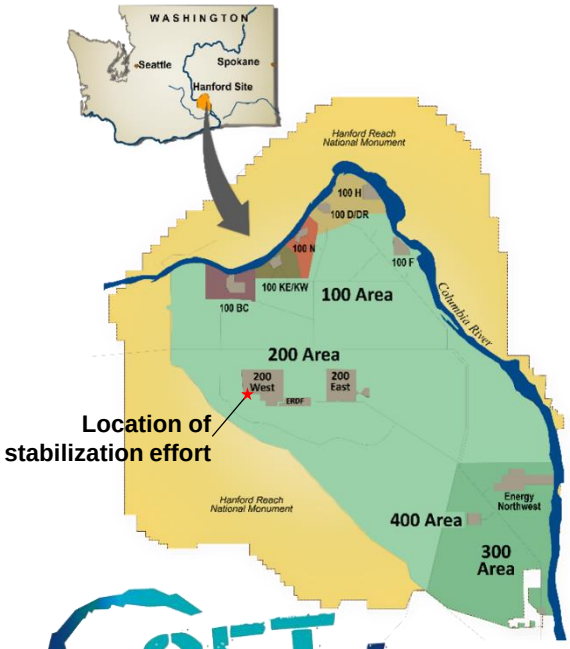
Overview

The 580-square-mile Hanford Site in southeastern Washington state was created in 1943 as part of the Manhattan Project to produce plutonium for the nation's defense program. Today, environmental cleanup is Hanford's primary mission.

Following the partial collapse of a waste storage tunnel near the Plutonium Uranium Extraction Plant (PUREX) in May 2017, the U.S. Department of Energy (DOE) analyzed other older structures in Hanford's former plutonium production area (the Central Plateau) to determine if any other structures are at risk of collapsing.

In 2018, 27 structures that may need risk-mitigation work were identified, and in 2019, 11 of the structures were analyzed further. A report on those structures identified three underground liquid waste disposal structures that represented the highest risk, requiring stabilization to prevent a collapse and the potential to spread contamination.

Filling the structures with engineered grout will provide protection, while not precluding future remedial actions or final closure decisions. Grout has been used in other stabilization projects on the Hanford Site (most recently PUREX Tunnels 1 and 2) to expedite risk reduction. Planning for the stabilization work is underway and grouting of the structures located within the footprint of the former Plutonium Finishing Plant is planned to begin this summer after demolition activities at the plant are completed (see graphic on Page 2).



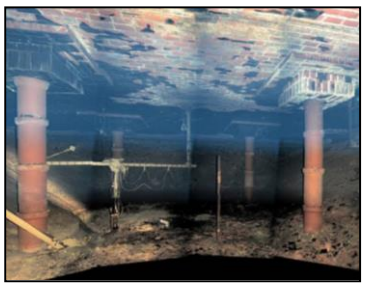
GET INVOLVED

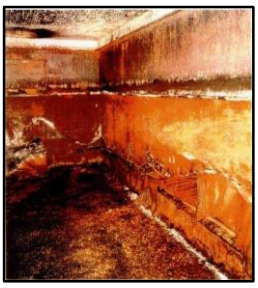
Comment Period
March 23 – ~~May 22~~ June 29, 2020

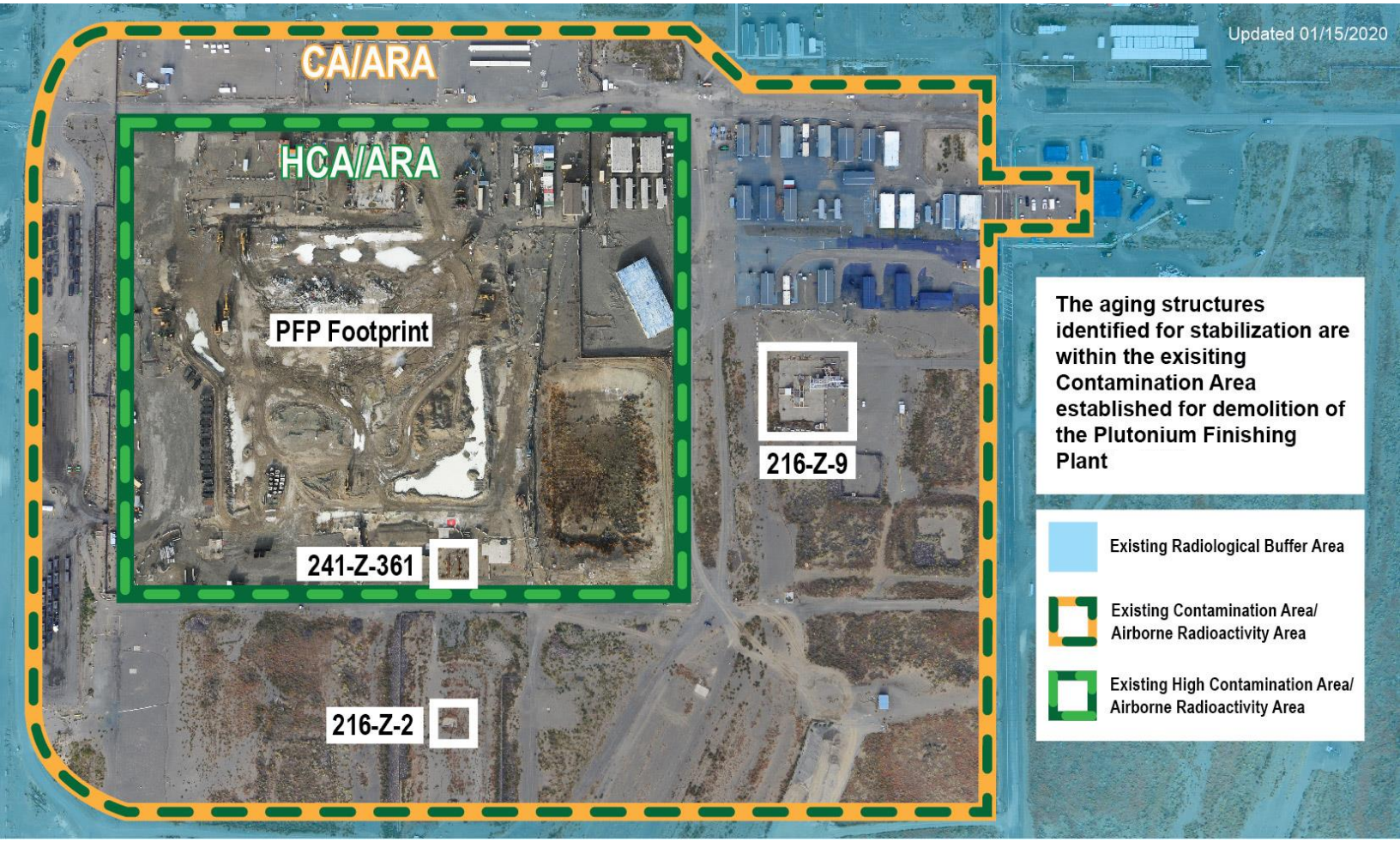
Send comments by ~~May 22~~ June 29
AgingStructures@rl.gov

Supporting Documents
https://go.usa.gov/xdUCn

Three structures will be stabilized with engineered grout. The left photo shows the 216-Z-9 Crib. The center photo is the 241-Z-361 Settling Tank. The right photo shows subsidence above a crib similar to the 216-Z-2 Crib. The subsidence was backfilled.







Aging Structures Identified for Near-Term Stabilization

216-Z-2 Crib

Operations: 1949 to 1969

Size: Excavated to 14 feet square and 21 feet deep; a 12-foot-square, 14-foot-tall open-bottom wooden box was installed within the excavation for support

Waste Disposed: Together with 216-Z-1, the cribs received about 10 million gallons of waste, mostly from the Plutonium Finishing Plant (PFP)

Contamination: Estimated discharge to cribs includes 6.8 kg of plutonium

Estimated Grout Volume to Stabilize: 75 cubic yards

Estimated Completion: Fall 2020

241-Z-361 Settling Tank

Operations: 1949 to 1973

Size: Reinforced concrete structure 28 feet long and 15 feet wide, with a 3/8-inch-thick steel liner

Waste Disposed: Received liquid waste from the PFP complex, including the main processing facility and Plutonium Reclamation Facility

Contamination: An estimated 29 kg of plutonium remains in the tank

Estimated Grout Volume to Stabilize: 125 cubic yards

Estimated Completion: Fall 2020

216-Z-9 Crib

Operations: 1955 to 1962

Size: 20-foot-deep excavation (120 by 90 feet) sloping to a 60-by-30-foot floor, with a concrete cover supported by six concrete columns

Waste Disposed: Received approximately 1 million gallons of process waste from PFP

Contamination: An estimated 48 kg of plutonium remains in the crib

Estimated Grout Volume to Stabilize: 4,000 cubic yards

Estimated Completion: Fall / winter 2020

CENTRAL PLATEAU AGING STRUCTURES STABILIZATION

Planned actions for stabilization of 216-Z-2 Crib, 241-Z-361 Settling Tank and 216-Z-9 Crib

Agency Roles in Removal Actions

DOE is the lead agency for removal actions at the Hanford Site. EPA's role is to determine if any removal actions taken will impede the ability to implement future remedial action at the waste sites addressed. DOE is proceeding with a Time Critical Removal Action under the *Comprehensive Environmental Response, Compensation and Liability Act* to address these three underground structures. The structures received liquid waste during Hanford's plutonium production operations and contain residual radioactive and chemical contamination.

A 2011 Record of Decision (ROD) exists for these three waste sites and is available at https://go.usa.gov/xdUmN. The final remedy for these waste sites is to remove the structures and remove, treat and dispose of contaminated soil from the 216-Z-Crib and the 216-Z-9 Crib. The final remedy for the 241-Z-361 Settling Tank is to remove the remaining sludge from the tank and grout in place, while the Remedial Design / Remedial Action Work Plan for this tank considered removing it entirely. The agencies have agreed that this Time Critical Removal Action will not change the selected remedy for the 216-Z-2 Crib, 216-Z-9 Crib and 241-Z-361 Settling Tank.

Public Involvement

A ~~60-day~~ 90-day public comment period will run from March 23 through ~~May 22~~ June 29, 2020. The previously scheduled public meeting is being moved to an online only format and will be held May 7, 2020, at 5:30 p.m. PST. To participate via GoToWebinar, please follow the instructions below:

Visual:

Click the GoToWebinar link: https://attendee.gotowebinar.com/register/2995727588127069965;
ID #: 776-461-667

Audio:

1. Dial the appropriate number: 376-3622 (local) or 1-877-401-5229 (toll free)
2. Enter in the Conference ID _520605 _ (followed by pound key)

Supporting documentation will be available online during the public comment period at https://go.usa.gov/xdUCn, on the Hanford public involvement website at https://go.usa.gov/xVmew, in the Administrative Record at https://go.usa.gov/xVDbx, and in the Hanford Public Information Repositories at https://go.usa.gov/xVDTS.

Following completion of the public comment period, DOE will address public comments and prepare a Response to Comment document.

All comments must be submitted by ~~May 22~~ **June 29** to AgingStructures@rl.gov (preferred) or in writing to:

U.S. Department of Energy
Attn: Jennifer Colborn
P.O. Box 450, H6-60
Richland, WA 99352

Questions? Please contact Jennifer Colborn, at Jennifer_M_colborn@rl.gov, Daina McFadden, Ecology, at Hanford@ecy.wa.gov, or Emy Laija, EPA, at Laija.Emerald@epa.gov.

Please contact Jennifer Colborn, Jennifer_M_Colborn@rl.gov, (509) 376-5840 at least 10 working days prior to the event to request disability accommodation. DOE makes every effort to honor disability accommodation requests.

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Public Involvement Opportunity

We want to hear your comments on planned action for stabilization of aging structures in the Central Plateau.

EXTENDED Comment Period:

March 23 – ~~May 22~~ June 29, 2020

Central Plateau Aging Structures Stabilization
U.S. Department of Energy
P.O. Box 450, H6-60
Richland, WA 99352