

# Single-Shell Tank System

## Closing Unit #4

- 149 tanks in 12 groups called tank farms.
- Capacity: 53,000 – 1 million gallons.
- In total, Hanford's single-shell tanks (SSTs) hold about 30 million gallons of radioactive and chemical waste in the form of sludge, salt cake, and a small amount of liquid.
- SST system also includes ancillary equipment: vaults, diversion boxes, catch tanks, pits, pipelines, miscellaneous structures, and significant soil contamination.
- Built between 1943 and 1964.
- Because 67 tanks are suspected of leaking or of being overfilled, all the free liquids were pumped out before 2010.



T Tank Farm construction in 1944. See the truck for scale!

## Where did the waste come from?

It came from dissolving irradiated fuel rods to recover plutonium. Extracting plutonium created huge quantities of radioactive and dangerous wastes. After the waste was put into the SSTs, workers added a wide variety of chemicals to the tanks to neutralize the acids and extract certain products. Those chemicals remain in the tanks and may form toxic compounds.

## How does this part of the permit differ from the usual?

SSTs do not comply with regulations, so the permit requires SSTs to be closed as soon as possible. But they can't close yet because they still contain waste. The waste must be retrieved and the soil remediated before the tanks can be closed. There is no place to put all the retrieved tank waste until the Waste Treatment Plant is running. Though this is a closing unit, it will have conditions to allow retrieval, storage, monitoring, etc.



## What's the risk?

The tanks and surrounding contaminated soil are one of Hanford's greatest challenges. We don't really know the full extent of the risks yet. Removing wastes from the tanks will greatly reduce the risks. An ongoing risk assessment for the SST closures will ensure the risks are below acceptable levels.



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

Protecting our air, land and water — today and for the future.