

# The Single-Shell Tank System in the Hanford Site-wide Permit

Hanford's single-shell tanks (SSTs) are part of an underground tank system. This system spans Hanford's Central Plateau and consists of 149 underground storage tanks in 12 "tank farms" connected by more than 100 miles of pipes, valve boxes, and other ancillary equipment.

The SST system currently holds over 27.5 million gallons of mixed radioactive and chemically hazardous waste.

In the 60-plus years since the first tank began accepting waste from Hanford weapons production, about one million gallons of waste have reached soil and groundwater in two ways:

- Leaks from the tanks and ancillary equipment.
- Waste overflowing when it was pumped into tanks.



Single-shell tank construction

Ecology believes 67 SSTs leaked in the past, though none have leaked in recent years. In 2004, the SST system was "interim-stabilized," and most liquids in the tanks were pumped out and sent to the double-shell tank (DST) system for safer storage.

## The SST system permit unit

The SST permit unit is part of the Hanford Facility Dangerous Waste Permit (commonly called the "Hanford Site-wide Permit"). It is being issued slightly later than the rest of the Permit, but will have the same closing date for public comments.

Hanford tanks are in groups, ranging from 2 to 16 in number. These groups are known as "tank farms," but in the permit, they're called waste management areas (WMAs).

## WHY IT MATTERS

The waste in, around, and below Hanford's 149 single-shell tanks poses a threat to the environment and future generations.

## RELATED PUBLICATIONS

- [Tank Closure 101](#)
- [Tri-Party Agreement](#)
- [Washington v. Bodman](#)
- [Consent Decree](#)

## MORE INFORMATION

Join Hanford's email lists:  
[www.ecy.wa.gov/programs/nwp/lists.htm](http://www.ecy.wa.gov/programs/nwp/lists.htm)

View the full permit:  
[www.ecy.wa.gov/programs/nwp/permitting/hdwp](http://www.ecy.wa.gov/programs/nwp/permitting/hdwp)

An animated video about the importance of tank closure:  
<http://tinyurl.com/893hx4t>

## QUESTIONS?

Contact Jeff Lyon:  
[Hanford@ecy.wa.gov](mailto:Hanford@ecy.wa.gov)

## SPECIAL ACCOMMODATIONS

If you need this document in a format for the visually impaired, call the Nuclear Waste Program at (509) 372-7950.

Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Because the SSTs were built so long ago, they do not comply with today's regulations. The SSTs and all related equipment must be closed as soon as possible. But there is no practical alternative to the continued storage of waste in this noncompliant tank system for the next several decades. According to the Tri-Party Agreement (TPA), closure of the SST system will take 31 years.

Though this is a closing unit, it will have conditions to:

- Specify some basic and necessary operations and maintenance requirements.
- Maintain safety during all work efforts.
- Protect people and the environment.
- List general closure plan requirements.
- Incorporate TPA milestones and schedules.

For example, the tanks, ancillary equipment, and structures within the "C" Tank Farm, or WMA-C, are the first part of the SST system that the U.S. Department of Energy (USDOE) must close by 2019.

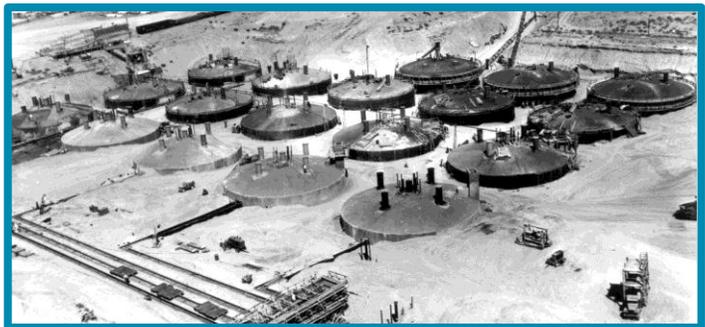
### What will happen to the SST system?

That's what the TPA agencies are trying to decide. Long-term risk to humans, the environment, and Hanford workers during closure activities are the top factors in decision making.

Not all closure actions will be the same. We will decide the closure method(s) for each part of the tank system or tank farm on a case-by-case basis.

The extent of cleanup may vary from farm to farm. Soil cleanup volumes will also vary. USDOE must meet all regulations. Ecology will base all permit decisions on risk, USDOE's physical ability to perform the work, the time it will take, and how much it will cost. But several questions remain, such as:

- Is it protective to remove 20 to 30 tanks, pipelines, and ancillary equipment but to leave everything else in place due to risk?
- Are there commercially available methods for dealing with waste in the soil around the tanks — for example, mining equipment?
- How would we treat all this waste, and where would we dispose of it?
- How long are we willing to wait?
- How much money are we willing to spend?
- Should we wait for new technologies?
- What is the risk of tank failure over time?
- Is there any further risk to groundwater, or is the damage already done?
- Can we use a special-purpose barrier around individual tanks or entire farms to safely contain the waste for the next thousand years?



*A single-shell tank farm and ancillary equipment before they were buried, leaving only small pipes above the ground surface.*

**How to comment on SST decisions**

Every critical decision has, or will have, a public comment period. Decisions we make must be evaluated by the public to ensure our decisions are sound and reflect public values. Public participation planning is already underway.

You'll have a variety of methods to learn and participate:

- Ecology's [Hanford Dangerous Waste Permit website](#).
- Nuclear Waste Program [publications](#).
- [ECOconnect blog](#) posts.
- Ecology's Hanford Education & Outreach [Facebook](#) page.
- Discussions with us and stakeholders.

In the future, when we modify the permit to incorporate a closure plan for a part of the SST system, we will have another public comment period.

You can comment on the SST system portion of the Hanford Site-wide permit starting July 1, 2012. The comment period closes September 30, 2012.

Please send your comments to [Hanford@ecy.wa.gov](mailto:Hanford@ecy.wa.gov), or via the postal service to:

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If you are on Hanford's postal mail or email list, you'll know when we schedule a public hearing for the SST system unit of the permit. To sign up, visit [www.ecy.wa.gov/programs/nwp/lists.htm](http://www.ecy.wa.gov/programs/nwp/lists.htm).