



Hanford Site

Office of River Protection

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Office of River Protection



Hanford Overview

SITE OWNER

US Dept of Energy

SIZE

586 square miles

NEARBY TOWNS

Richland, Pasco,
Kennewick
total pop ~250,000

WORKFORCE

~11,000

FUNDING

About \$2.5B
annually

FUTURE USE

To be determined





Office of River Protection Mission

Retrieve, immobilize and dispose of radioactive and chemical tank waste and close Hanford's Tank Farms

Tank Farms

- Washington River Protection Solutions, LLC
 - 177 underground storage tanks
 - 149 Single Shell Tanks (SST)
 - 28 Double Shell Tanks (DST)
 - 53 million gallons radioactive and chemical waste
 - 151,000 tons complex chemicals

Waste Treatment Plant (WTP)

- Bechtel National, Inc.
 - Design/build
 - Operational 2019
 - Largest nuclear construction project in the United States
 - Treat and immobilize in glass chemical and radioactive tank waste

Key River Protection Project TPA/Consent Decree Milestones

- | | |
|--|------|
| • Retrieve C Farm Single Shell Tanks | 2014 |
| • Complete WTP Construction, Startup and Commissioning | 2019 |
| • Retrieve All Single Shell Tanks | 2040 |
| • Treat All Tank Waste | 2047 |
| • Complete Mission | 2052 |



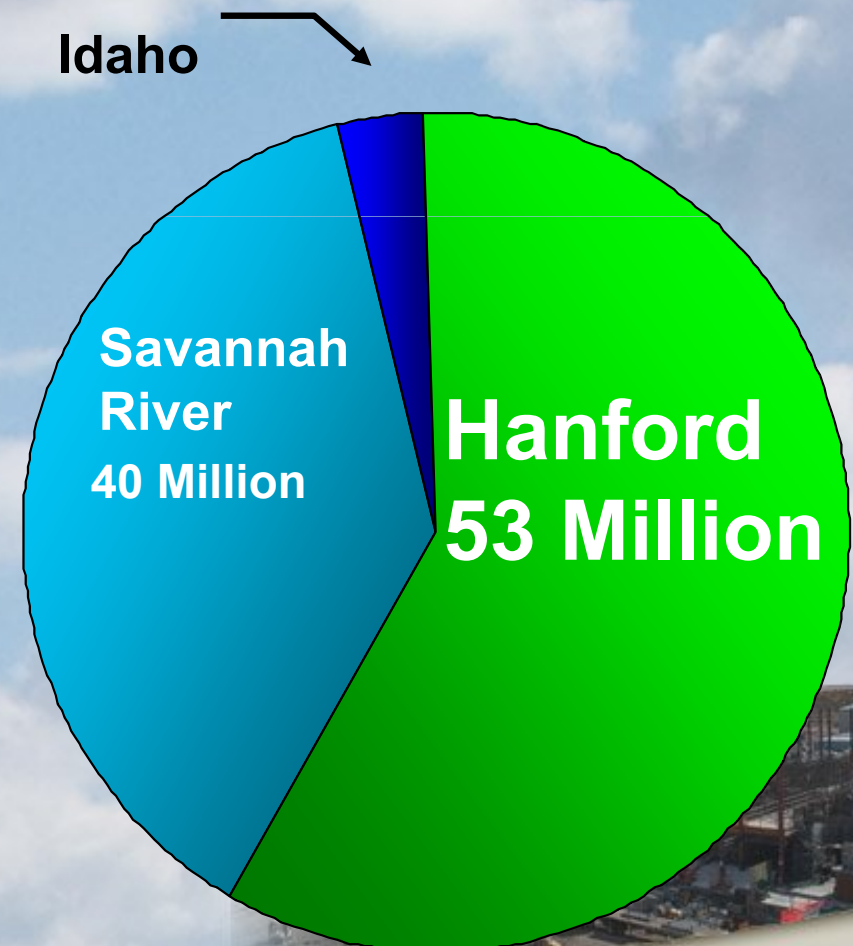


Tank Waste – Critical Path to Hanford Cleanup

Tank Waste Cleanup

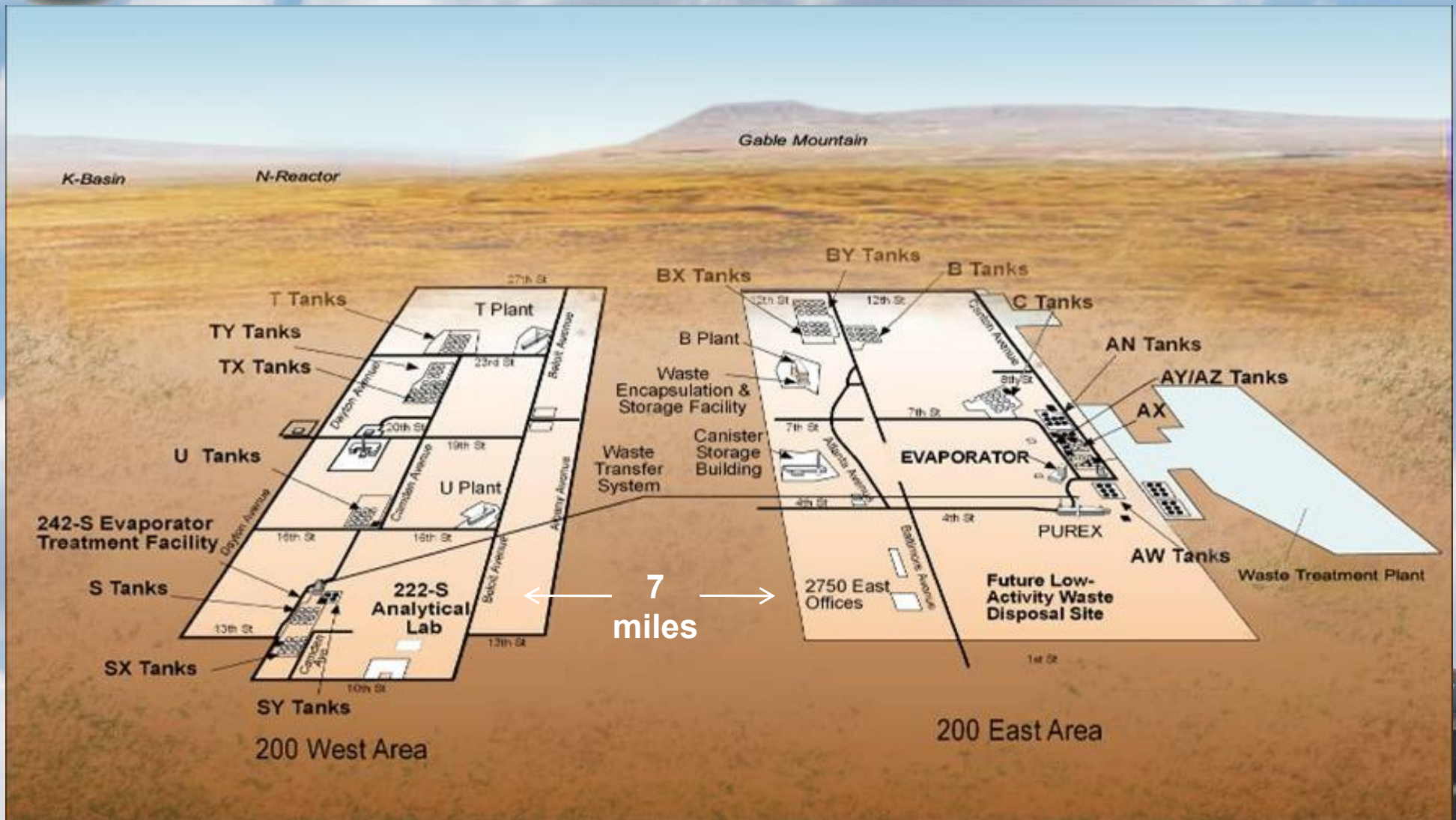
- 177 underground storage tanks
 - 149 single-shell tanks built 1943-1964 (Capacities: 55K-1M gal tanks)
 - 28 double-shell tanks built 1968-1986 (Capacities: 1M to 1.25M gal tanks)
- ~1M gal tank waste assumed to have leaked from 67 single-shell tanks
- ~190,000 tons chemicals

Total Number of Gallons in Waste Tanks at DOE Sites:



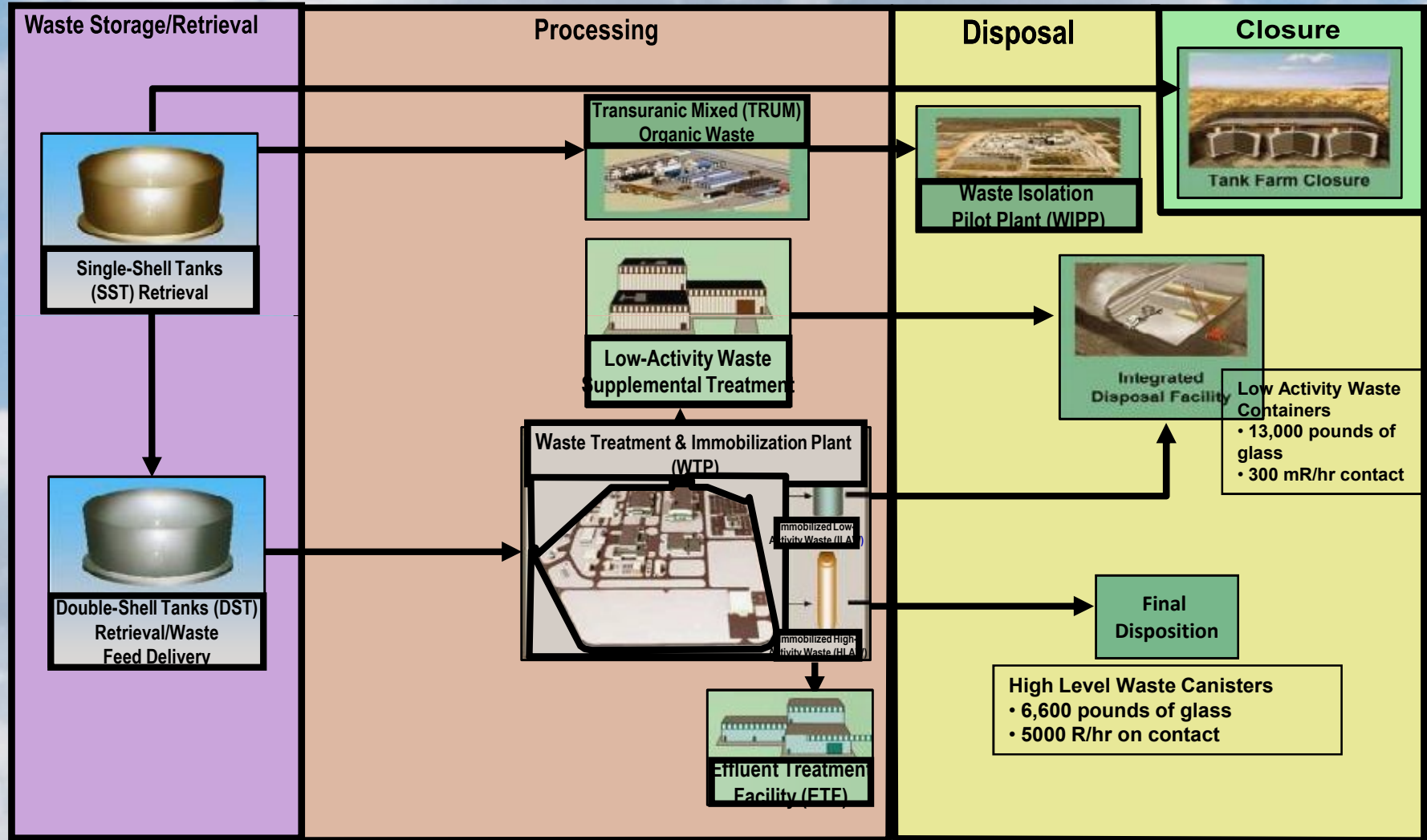


Hanford Tank Farms Layout



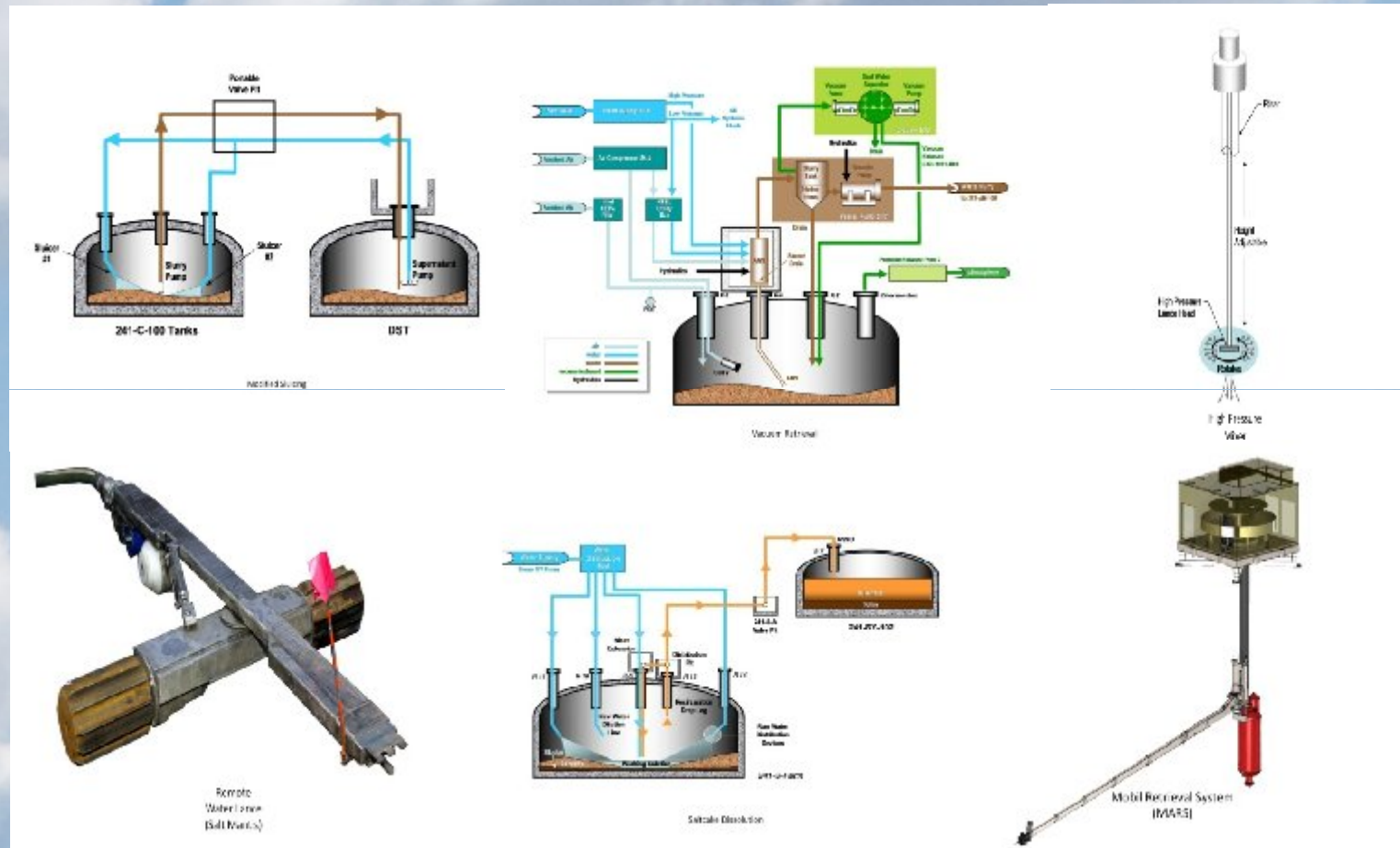


River Protection Project Complexity of Tank Waste Cleanup





Retrieval Technologies





Office of River Protection FY 2011 Congressional Budget Request

(x\$1,000)

River Protection Budget Summary
Defense Environmental Cleanup
 Office of River Protection

FY 2009 Original Appropriation	FY2009 ARRA	FY 2010 Appropriation *	FY 2011 Request *
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<i>Tank Farm Activities</i>	319,943	326,035	408,000	418,000
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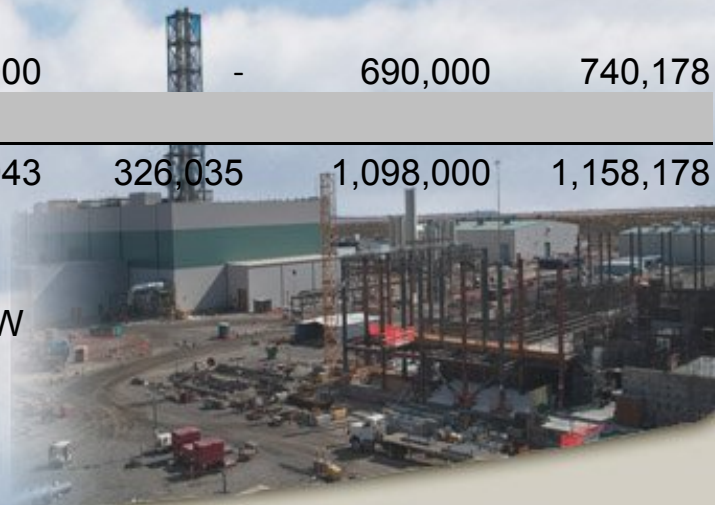
*Waste Treatment and Immobilization Plant**

01-D-16A: Low Activity Waste Facility(LAW)	160,000	-	100,000	57,500
01-D-16B: Analytical Laboratory(LAB)	65,000	-	55,000	2,500
01-D-16C: Balance of Facilities(BOF)	75,000	-	50,000	5,000
01-D-16D: High Level Waste Facility(HLW)	125,000	-	160,000	260,178
01-D-16E: Pretreatment Facility(PT)	265,000	-	325,000	415,000

Total, Waste Treatment and Immobilization Plant	690,000	-	690,000	740,178
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Total, Office of River Protection	1,009,943	326,035	1,098,000	1,158,178
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* 2 control points – One for PT and one for LAW, LAB, BOF, and HLW





Tank Farm Accomplishments



Left:
Retrieval Preparations

Right: *Mobile Arm
Retrieval System*



Left:
*Proposed TY
Interim Barrier
Footprint*



Tank Farms: Building for the Future



**Left: 242-A
Evaporator Valve
Upgrade**



**Right:
Hose-in-Hose
Transfer Line**



**Left:
Retrieval
Preparations**



**Left:
Demonstration of
Ultrasonic testing
on Double-Shell
Tanks**



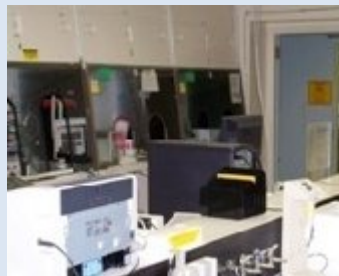
Tank Farms: Building for the Future American Recovery and Reinvestment Act



**SY-P28 Exhauster removal
(lead, asbestos, and radioactive material removal)**



**NEC
Resolutions
& Electrical
Mods**



**222-S Lab
Upgrades**

- Tank Farm Infrastructure Upgrades (Operating)
- Other Infrastructure Upgrades (Operating)
- Facilities Upgrades (Operating)

\$326M



**242-T HEPA filter
removal**



- Waste Feed Infrastructure Upgrades (Operating)
- Waste Feed Transfer Lines Upgrades (Capital Asset)



**Tank Waste
Mixing**



**Wiped Film
Evaporator**



Waste Treatment Plant Accomplishments

52% complete

Aerial view of WTP August 2009

Overall design = 77% complete

Overall construction = 48% complete





Waste Treatment Plant: Building for the Future

- Accelerating engineering
- Reducing schedule risk
- Integrating with TF
- QA focus





Find out more

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www.hanford.gov

to learn about

**The latest news on Hanford cleanup
The Hanford Advisory Board
Opportunities to comment on pending decisions
Public events**

