



# U.S. DEPARTMENT OF ENERGY

*Presentation to the Savannah River Site Citizens Advisory Board  
Waste Management Committee*

## Savannah River Site Status of Closing Tanks 5 and 6

**Sherri Ross**

Savannah River Operations Office  
Waste Disposition Project

**June 25, 2013**



**EM** *Environmental Management*

safety ♦ performance ♦ cleanup ♦ closure

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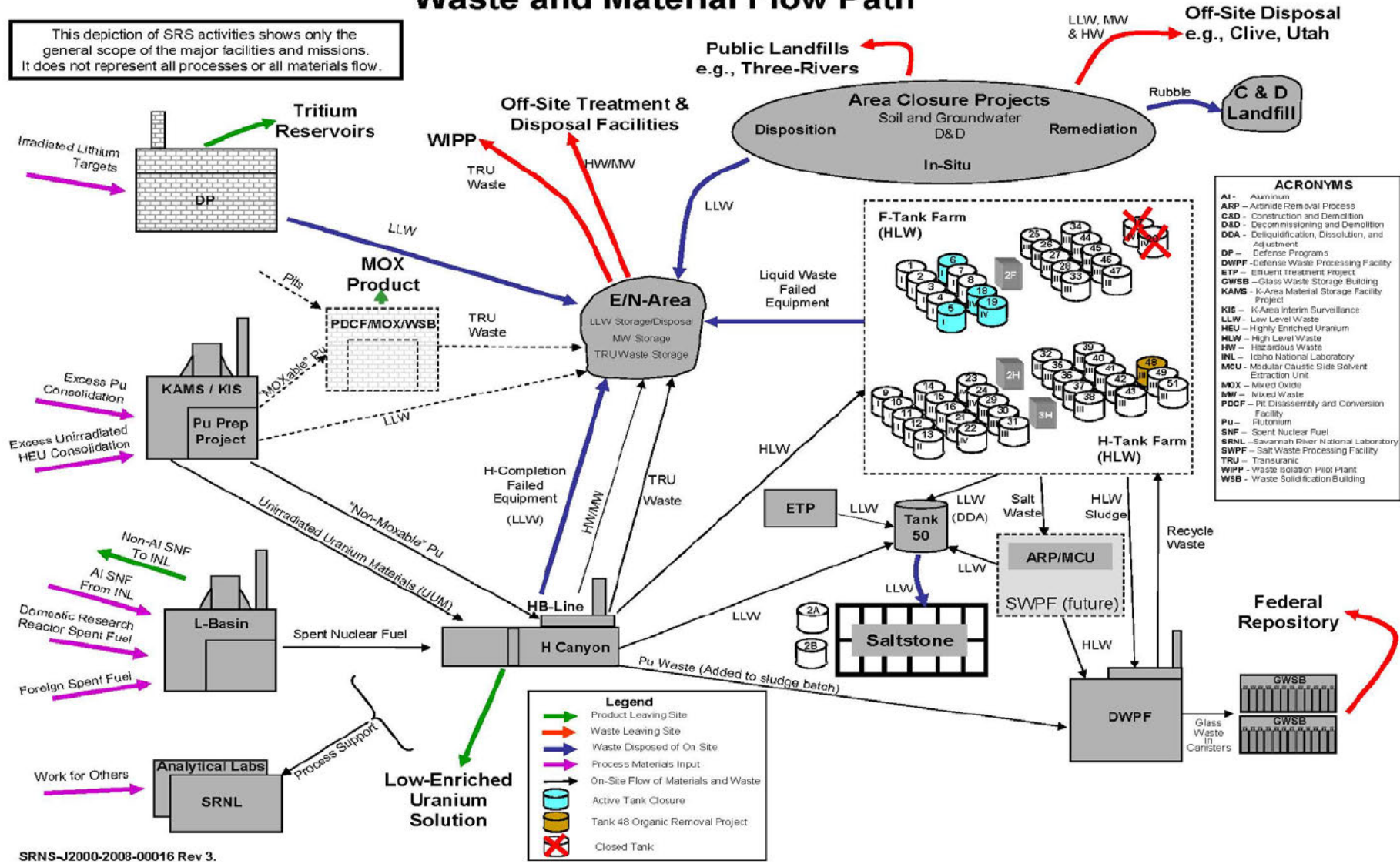
# Purpose

- Provide update of Tanks 5 and 6 closure activities
  - Status of regulatory drivers
  - Overview of Tanks 5 and 6 history, waste removal and risk at closure
  - Status of field grout activities
  - Path Forward



# Savannah River Site Waste and Material Flow Path

This depiction of SRS activities shows only the general scope of the major facilities and missions. It does not represent all processes or all materials flow.





# Tanks 5 and 6



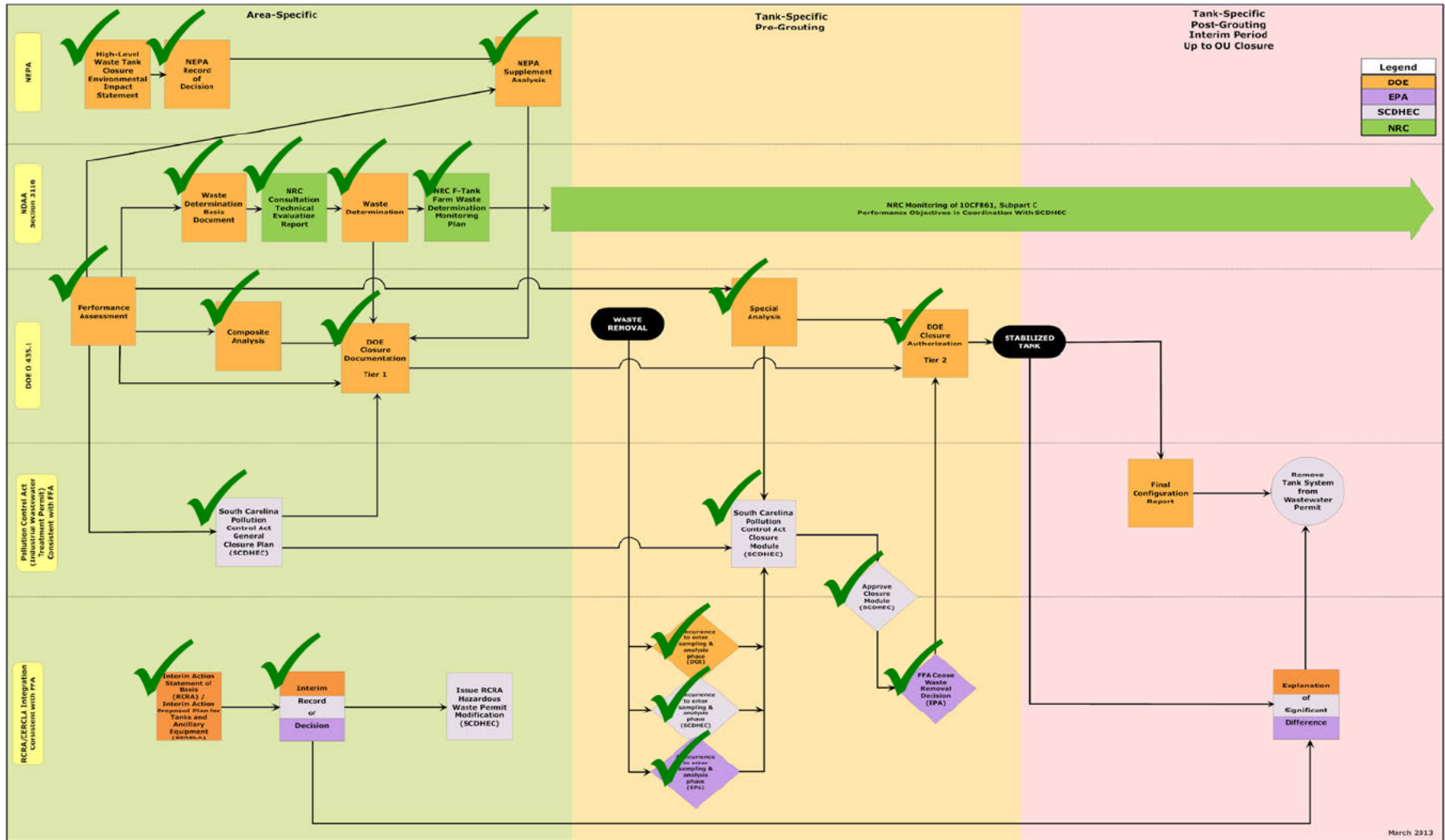
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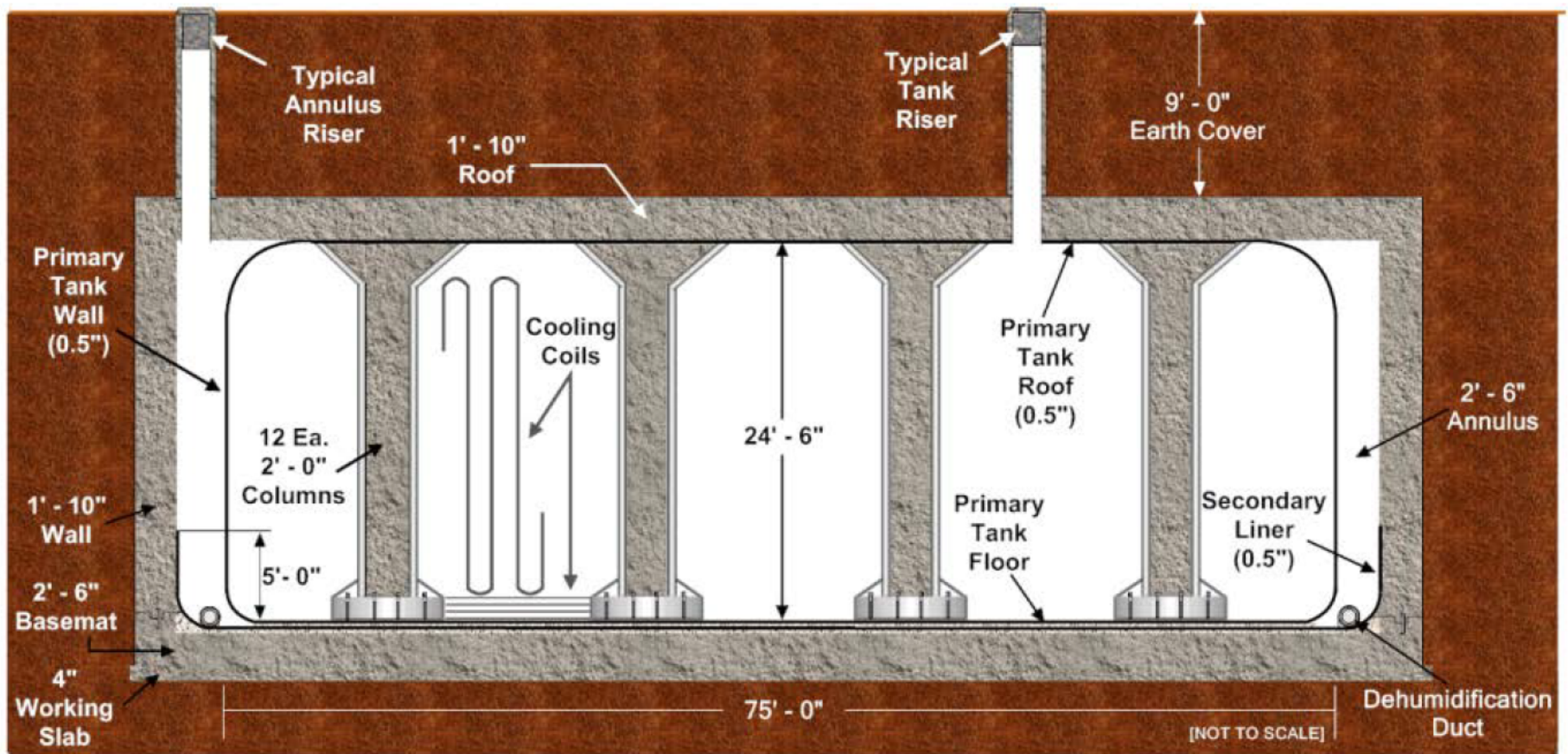
# Status of Regulatory Drivers for Closure of Tanks 5 and 6 in F Tank Farm



March 2013



# Tanks 5 and 6 are Type I Tanks



# Type I Tanks



FTF Contains Eight Type I Tanks  
(Tanks 1, 2, 3, 4, 5, 6, 7, and 8)



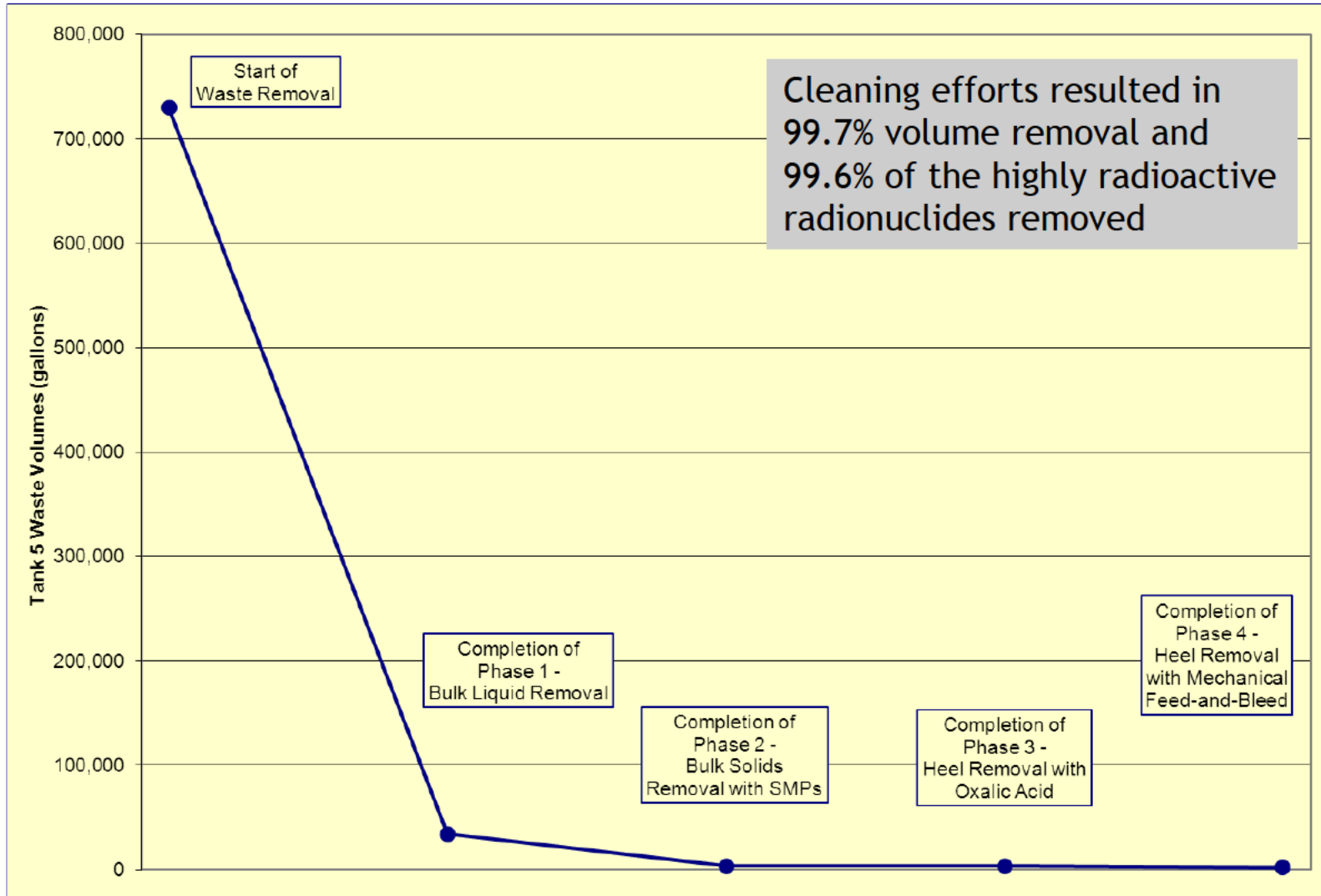
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# Tank 5 Waste Removal Summary



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# Tank 5 After Completion of Waste Removal Operations

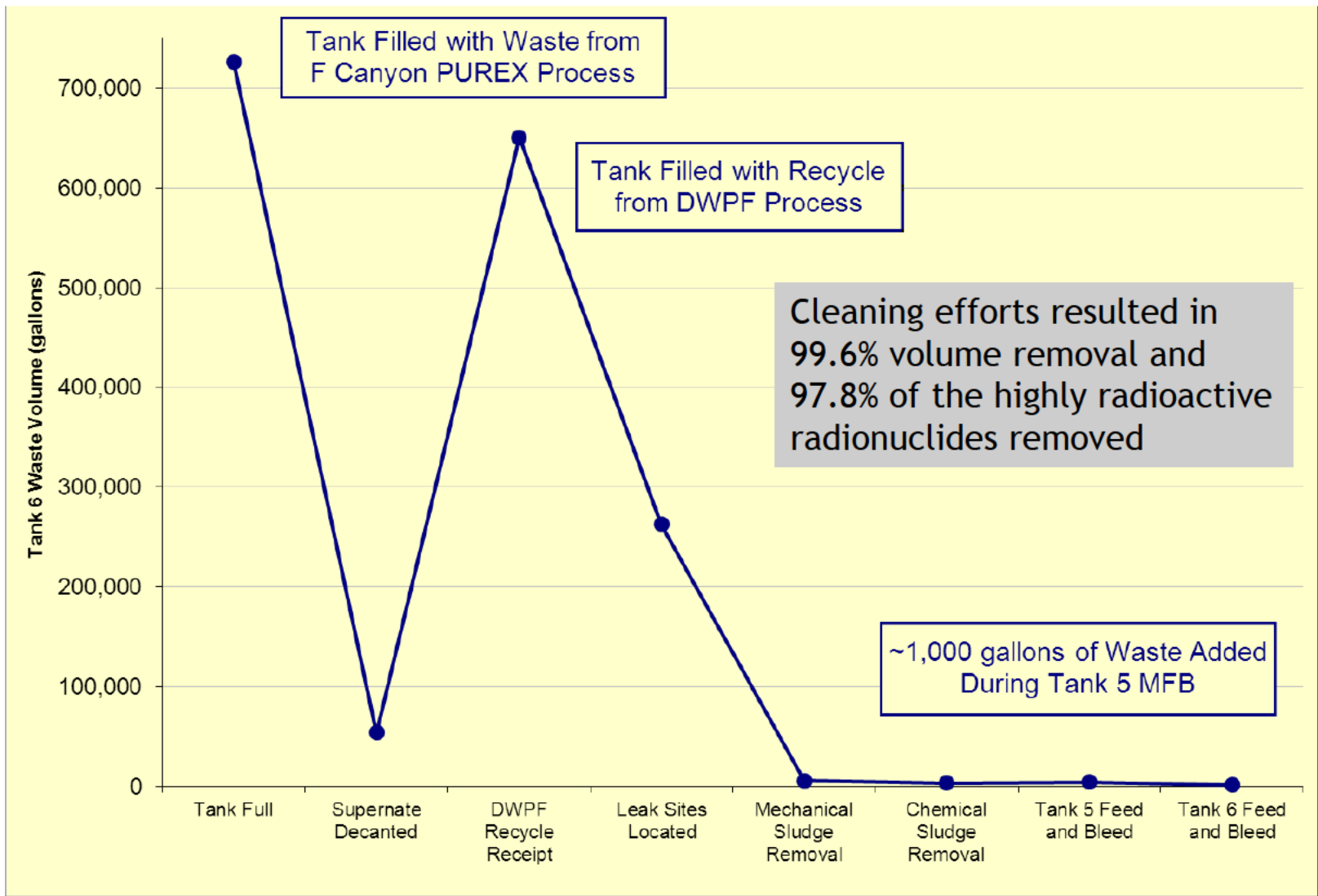


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# Tank 6 Waste Removal Summary





# Tank 6 After Completion of Waste Removal Operations

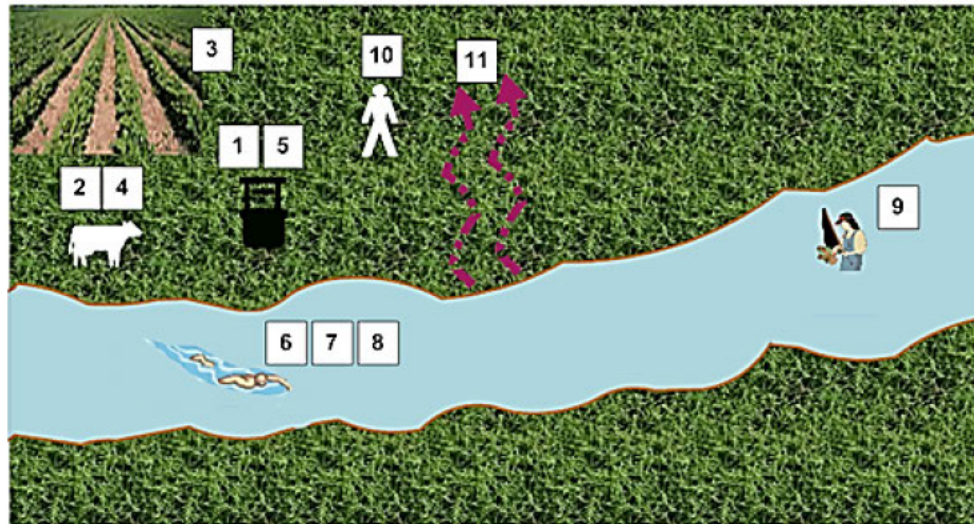


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# Member of the Public



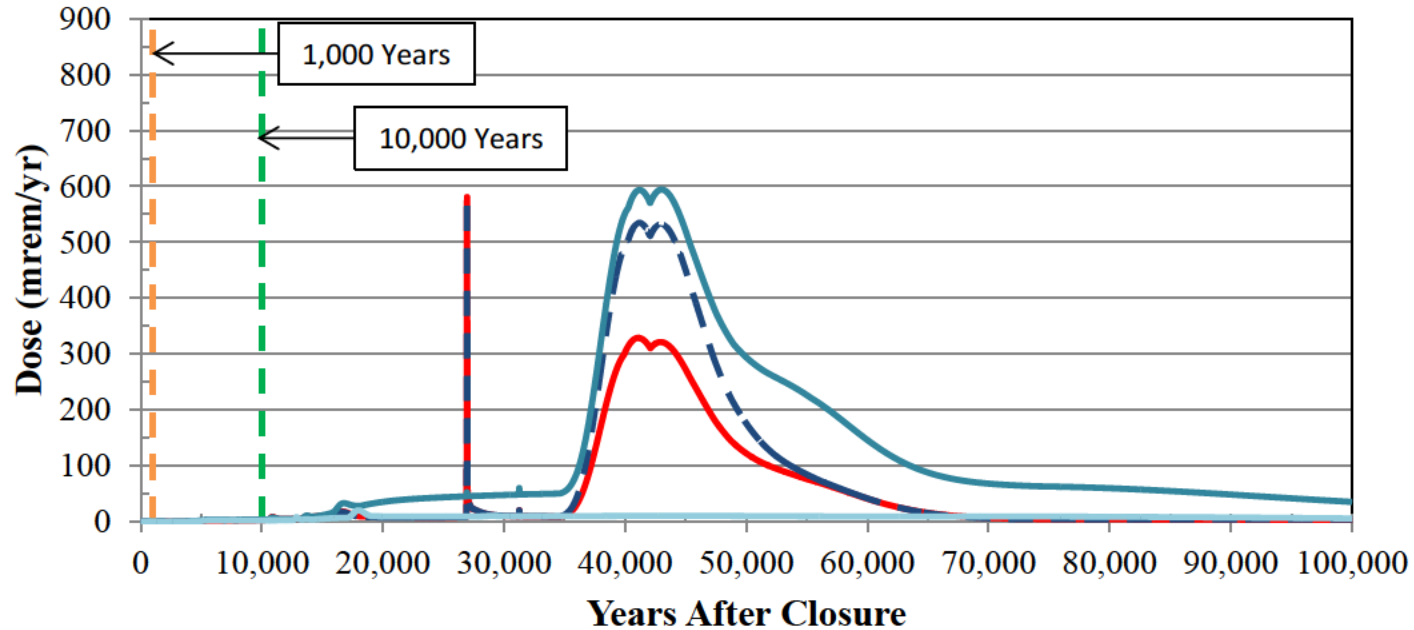
## SCENARIO WITH WELL WATER AS PRIMARY WATER SOURCE

1. Direct ingestion of well water
2. Ingestion of milk and meat from livestock (e.g., dairy and beef cattle) that drink well water
3. Ingestion of vegetables grown in garden soil irrigated with well water
4. Ingestion of milk and meat from livestock (e.g., dairy and beef cattle) that eat fodder from pasture irrigated with well water
5. Ingestion and inhalation of well water while showering
6. Direct irradiation during recreational activities (e.g., swimming, fishing) from stream water
7. Dermal contact with stream water during recreational activities (e.g., swimming, fishing)
8. Incidental ingestion and inhalation of stream water during recreational activities
9. Ingestion of fish from the stream water
10. Direct plume shine
11. Inhalation



# Dose to Member of the Public

Composite Sensitivity Study of 100 Metter Peak All Pathways Dose for Sector E - All Waste Tanks



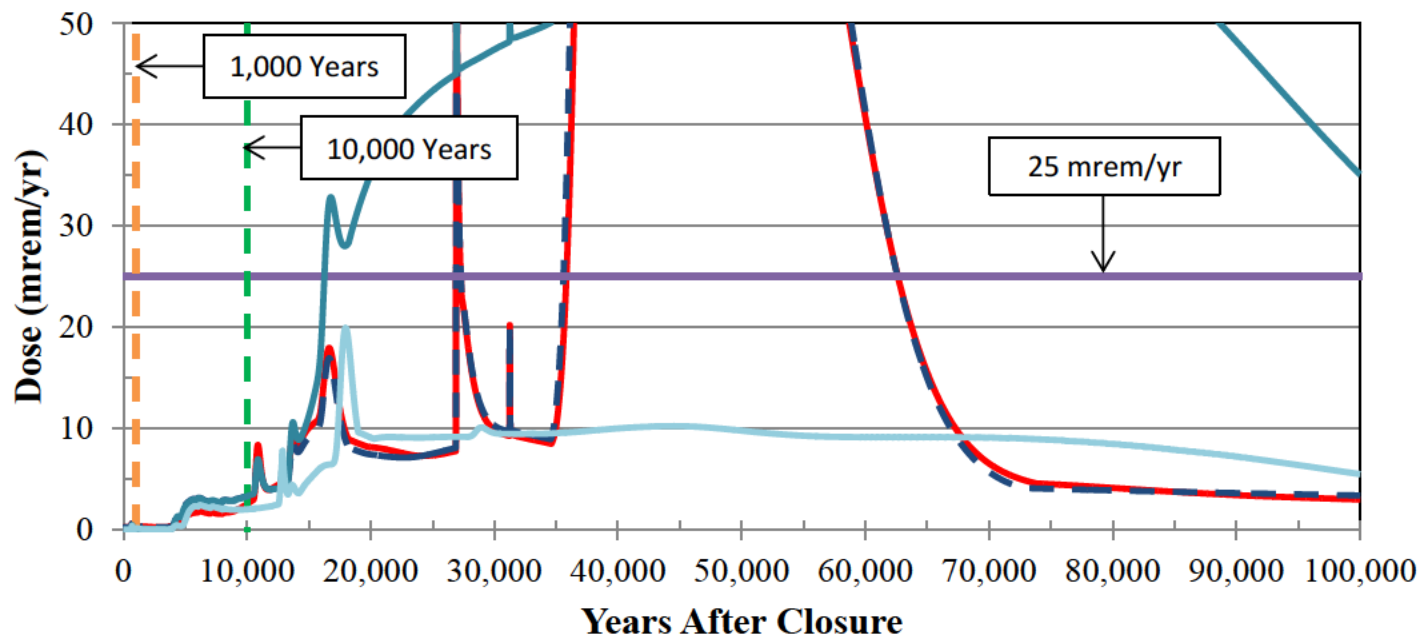
- FTF PA, Rev. 1, All-Pathways Dose <sup>a</sup>
- - Tank 18 and Tank 19 SA, All-Pathways Dose <sup>a</sup>
- Tank 5 and Tank 6 SA, All-Pathway Dose <sup>b</sup>
- Tank 5 and Tank 6 SA, All-Pathway Dose <sup>c</sup>

- a. Peak near 27,000 years (associated with Tc-99 releases) occurs in both the FTF PA and the Tank 18/19 Special Analysis, but not in this Tank 5/6 Special Analysis.
- b. Applies Base Case assumptions for the waste release model and contaminant properties.
- c. Applies more realistic and probable assumptions for the waste release model and contaminant properties.





# Dose to Member of Public

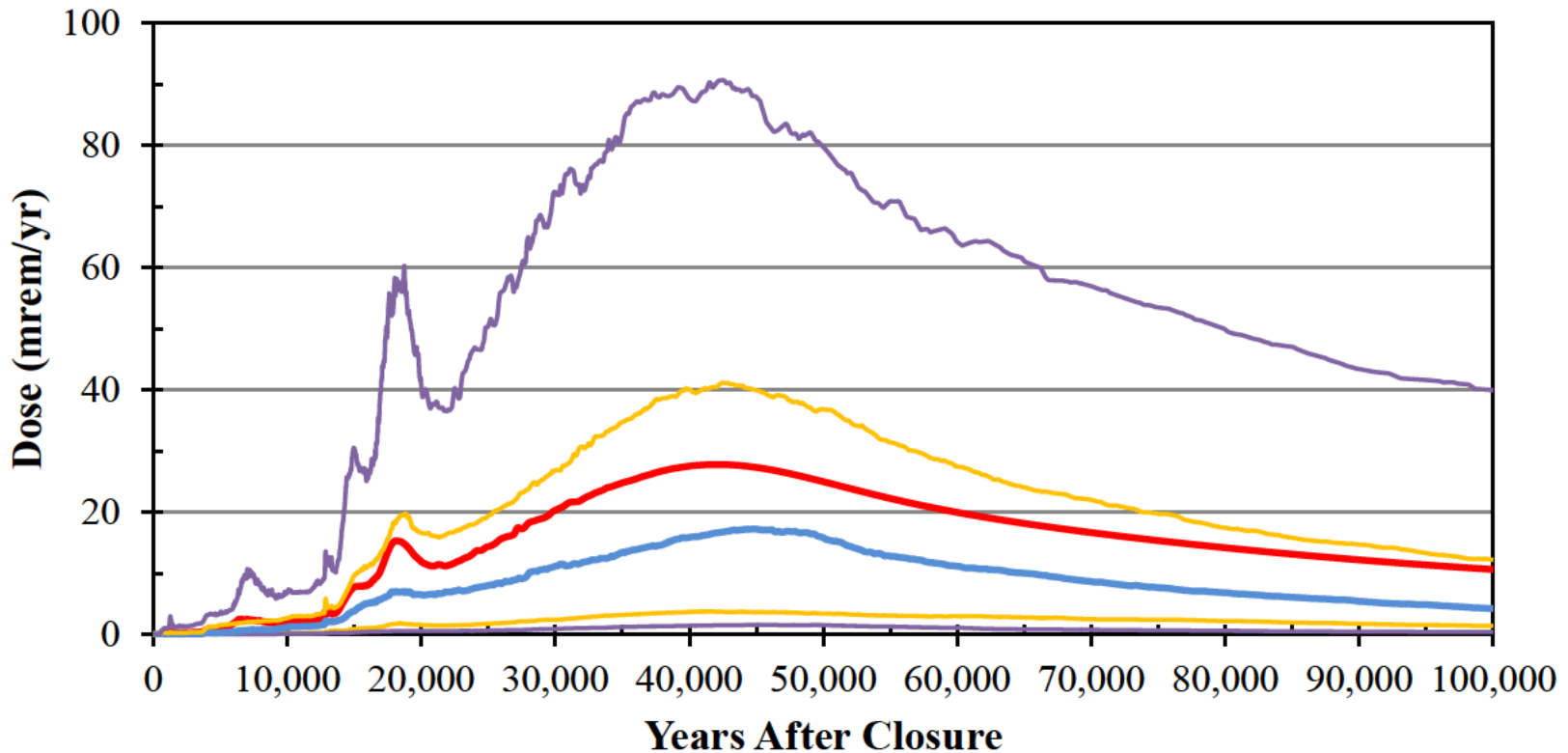


- FTF PA, Rev. 1, All-Pathways Dose<sup>a</sup>
- - Tank 18 and Tank 19 SA, All-Pathways Dose<sup>a</sup>
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- a. Peak near 27,000 years (associated with Tc-99 releases) occurs in both the FTF PA and the Tank 18/19 Special Analysis, but not in this Tank 5/6 Special Analysis.
  - b. Applies Base Case assumptions for the waste release model and contaminant properties.
  - c. Applies more realistic and probable assumptions for the waste release model and contaminant properties.
- The horizontal purple line at 25 mrem/yr is provided for illustration only.



# Composite Analysis All Cases Probabilistic Results (100,000 years)



— Mean      — 25th Percentile      — 5th Percentile  
— Median      — 75th Percentile      — 95th Percentile

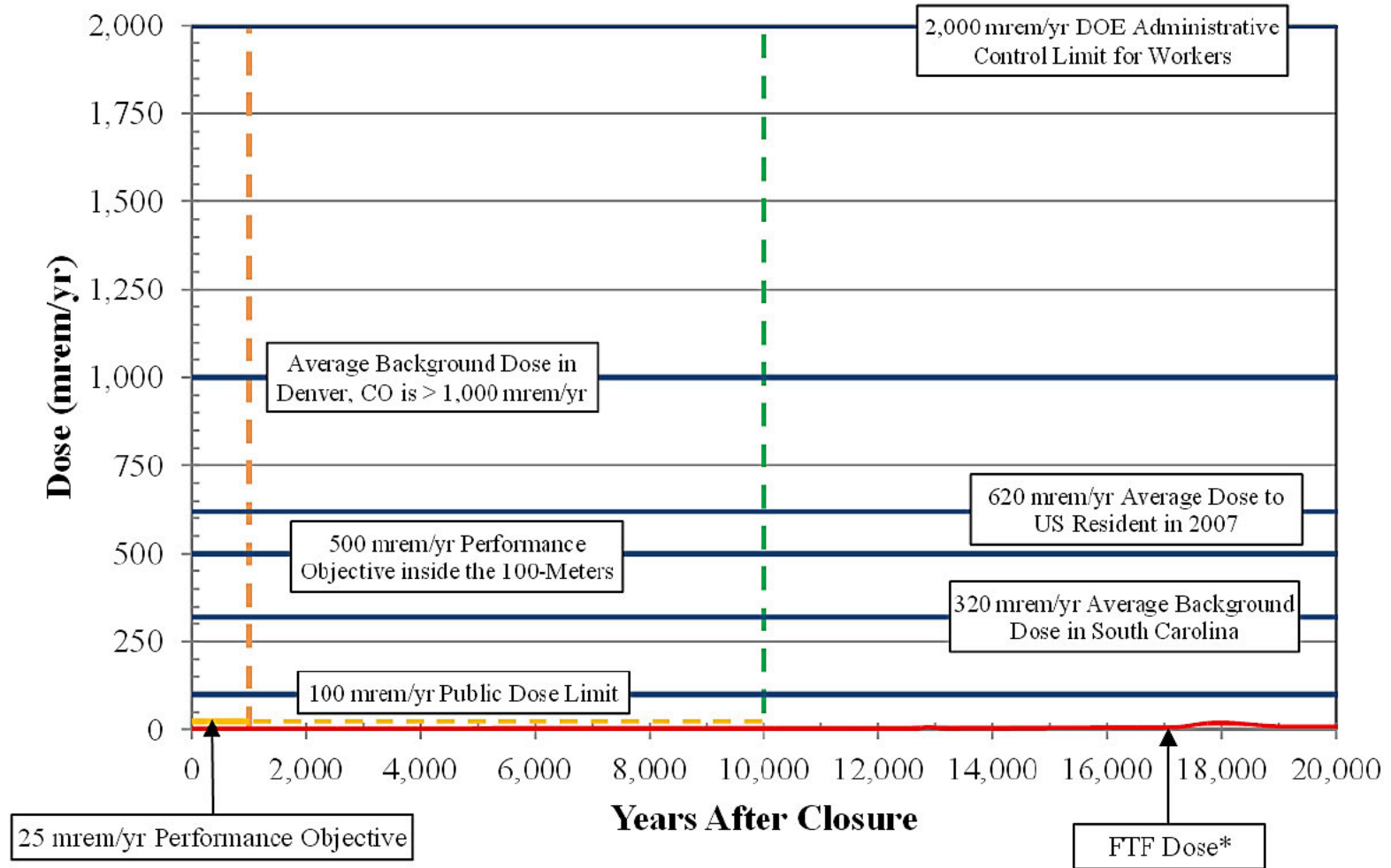


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# F Tank Farm Closure Risk

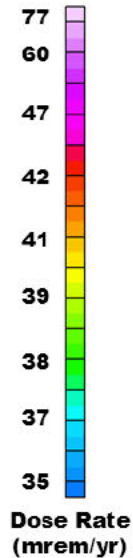
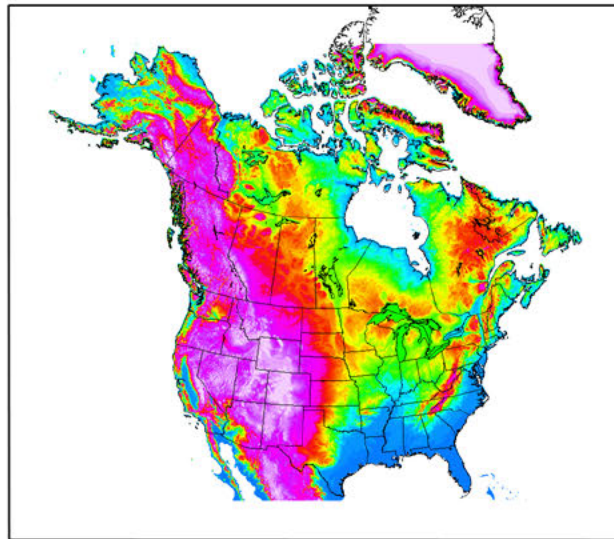


\* The FTF Dose estimate is based on the Composite Sensitivity Study All Pathways Dose from the Tank 5 and Tank 6 Special Analysis.

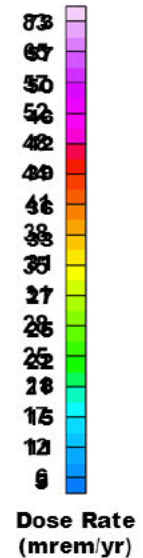
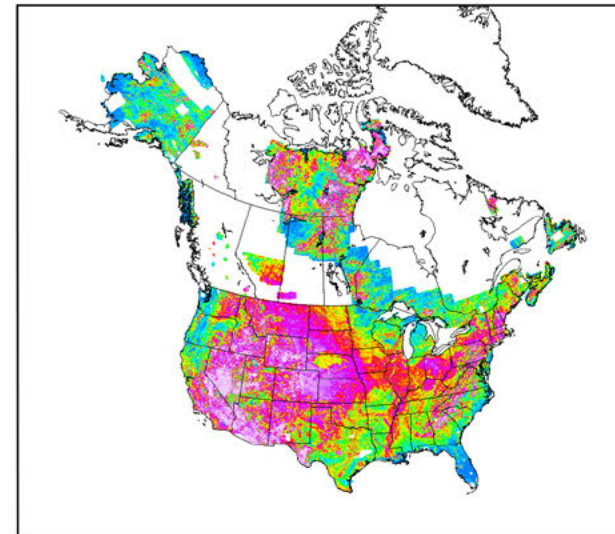




# Radiation Exposure Comparison



Cosmic



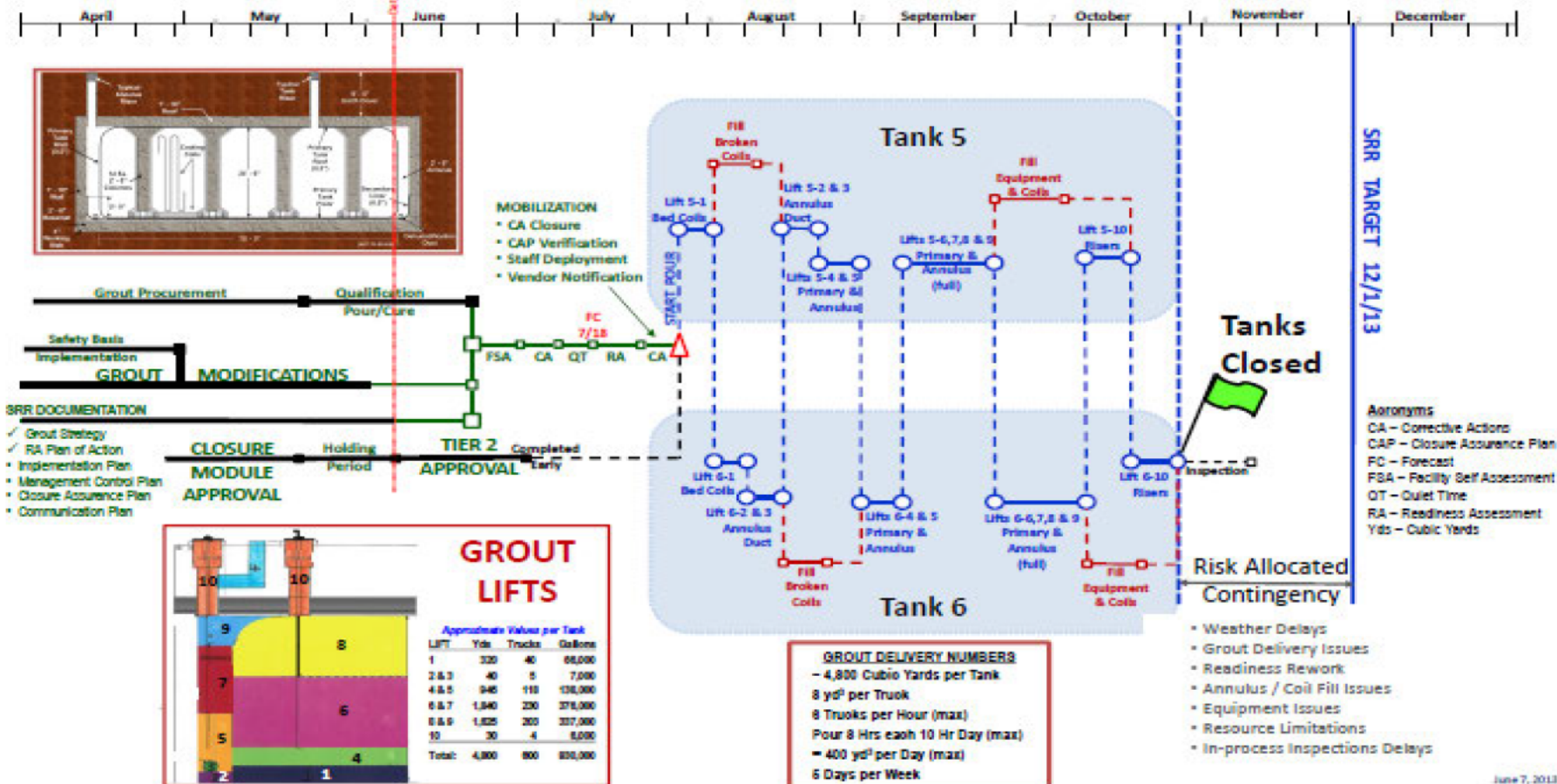
Terrestrial

Annual doses from background radiation varies significantly across the United States. Would you decide not to visit or move to the western states knowing that your annual exposure increases by tens of mrem per year?



# Status of Field Grout Activities

## Tank 5 and 6 Field Execution Acceleration



June 7, 2013



# Path Forward

- Continue field activities to grout Tanks 5 and 6
- Planning a NRC F Tank Farm onsite monitoring visit in August 2013
- Complete closure of Tanks 5 and 6 by December 2013
  - Achieves partial FFA commitment to close 4 tanks by September 2015
  - Tank 16 in H Tank Farm undergoing sampling and analysis
  - Tank 12 in H Tank Farm undergoing chemical cleaning
- Public meetings
  - July 18 (5:00 pm) - Lessons Learned from implementing Section 3116





# Acronyms

|        |  |
|--------|--|
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act     |
| DOE    | Department of Energy   |
| EPA    | Environmental Protection Agency  |
| FFA    | Federal Facility Agreement   |
| HTF    | H Tank Farm  |
| NDAA   | Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 |
| NEPA   | National Environmental Policy Act  |
| NRC    | Nuclear Regulatory Commission  |
| PA     | Performance Assessment   |
| RAI    | Request for Additional Information                                       |
| RCRA   | Resource Conservation and Recovery Act                                   |
| SCDHEC | South Carolina Department of Health and Environmental Control            |
| TER    | Technical Evaluation Report  |

