



# THE HANFORD SITE

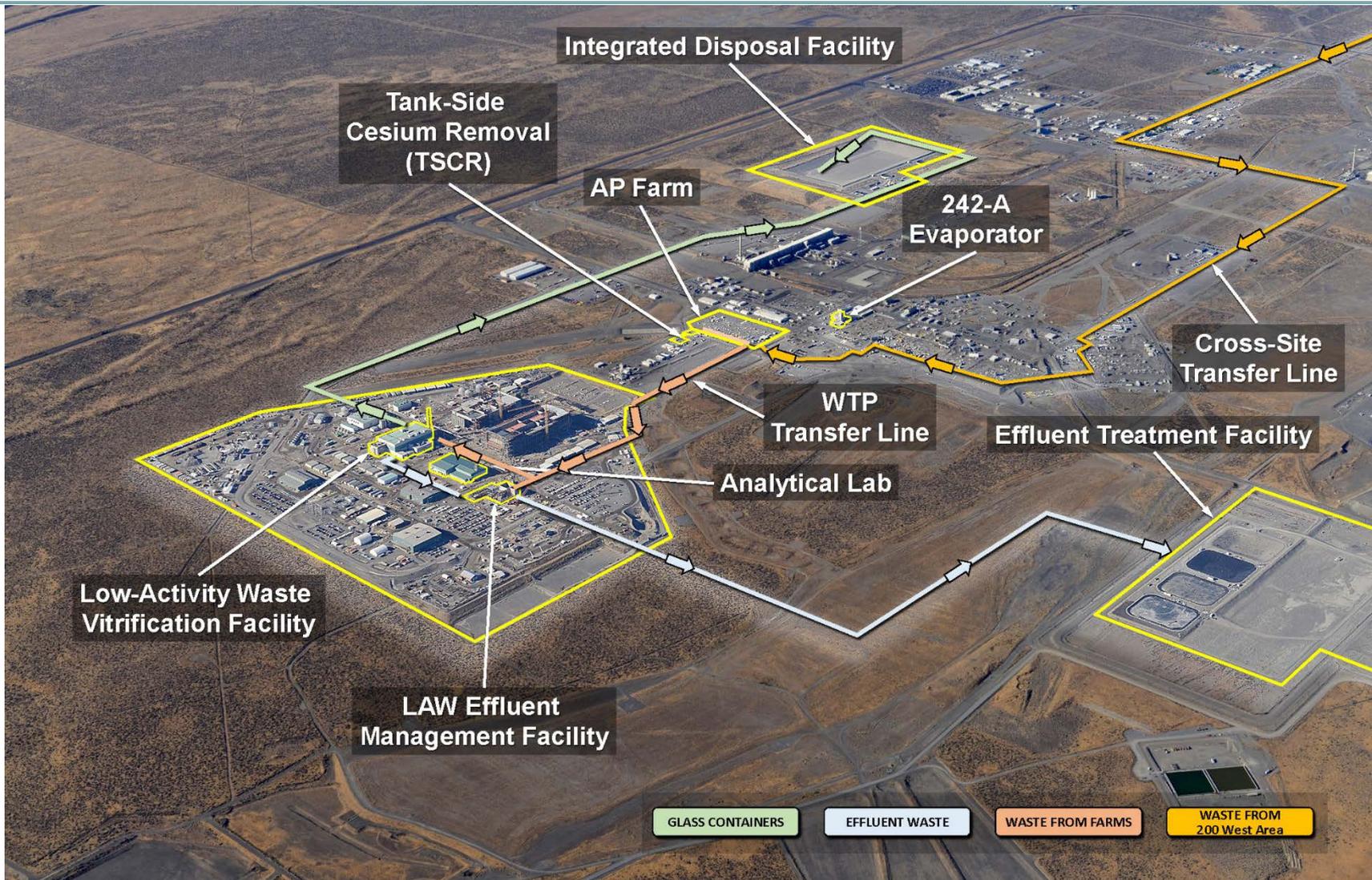
## Permit Modification Application for the Low-Activity Waste Pretreatment System

**Sahid C. Smith**, U.S. Department of Energy, Office of River Protection  
Project Manager for Tank Side Cesium Removal Demonstration Project

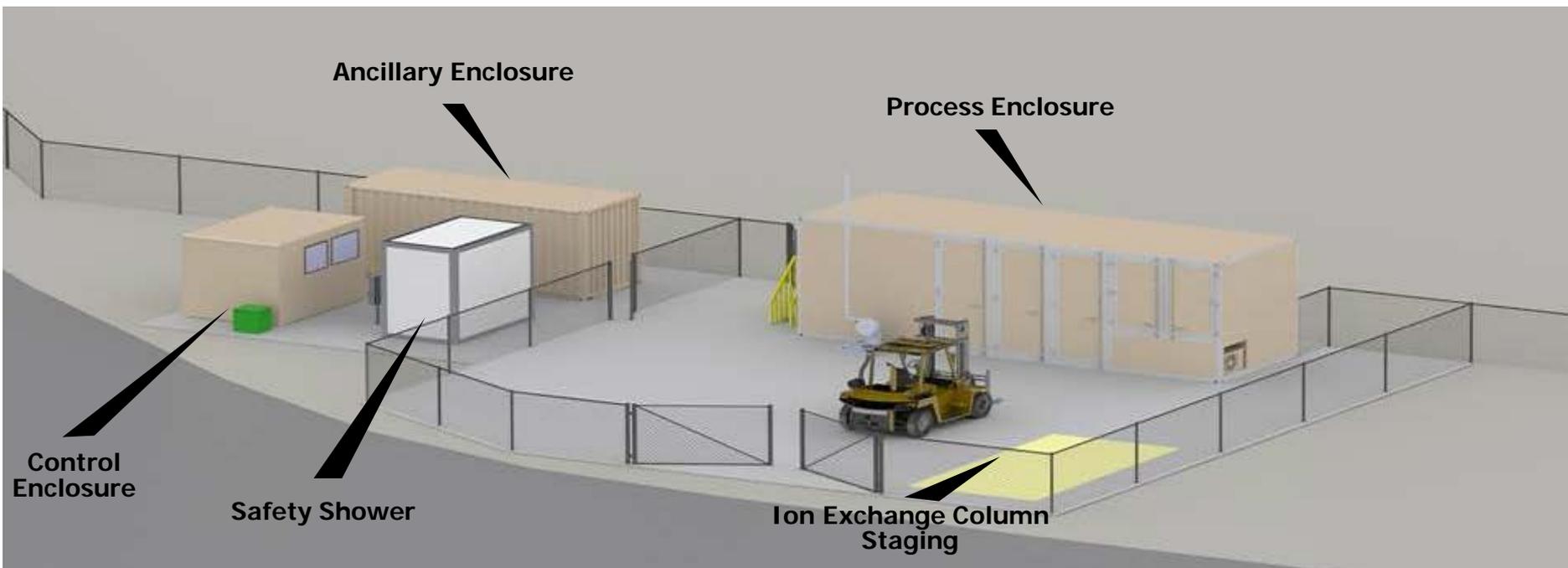
**Mary Beth Burandt**, U.S. Department of Energy, Office of River Protection  
Environmental Compliance Division

- Objective: Remove solids and cesium from tank waste supernate to feed the Waste Treatment and Immobilization Plant (WTP) Low-Activity Waste (LAW) Facility
- The cesium removal system would be deployed in phases
  - Phase One would employ a Tank-Side Cesium Removal (TSCR) unit
  - Phase Two would either use a permanent cesium removal facility (Low-Activity Waste Pretreatment System [LAWPS]) or an additional TSCR unit to support full capacity of the LAW Facility
  - This application covers construction and operation activities needed to support Phase One of the project
  - Phase Two will be submitted at a later date (Spring 2022)
  - The Class 3 Permit modification for Phase One includes:
    - Treatment to remove undissolved solids and radioactive cesium
    - Ion exchange column storage for waste generated during this process

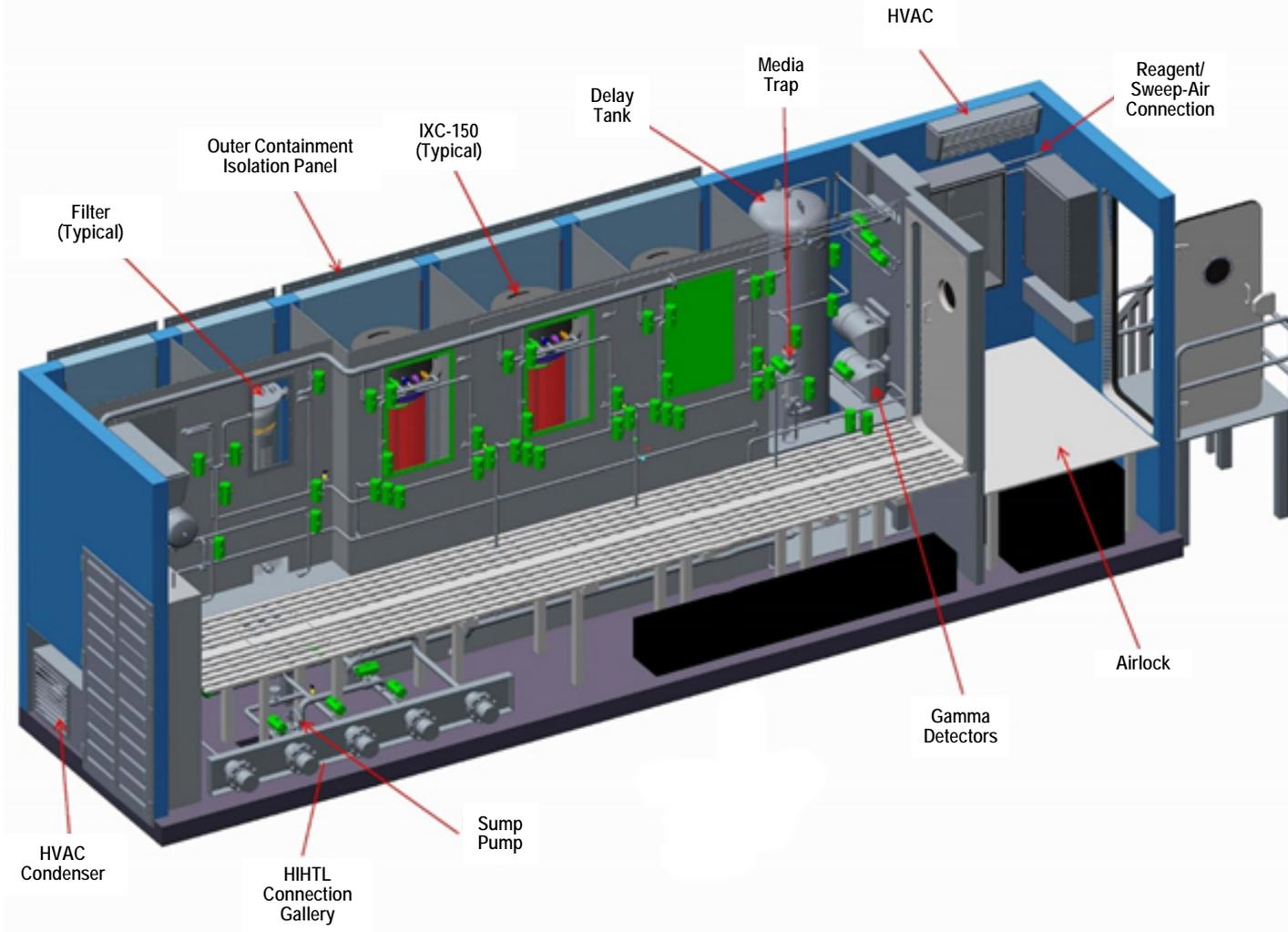
# Direct Feed Low-Activity Waste Overview



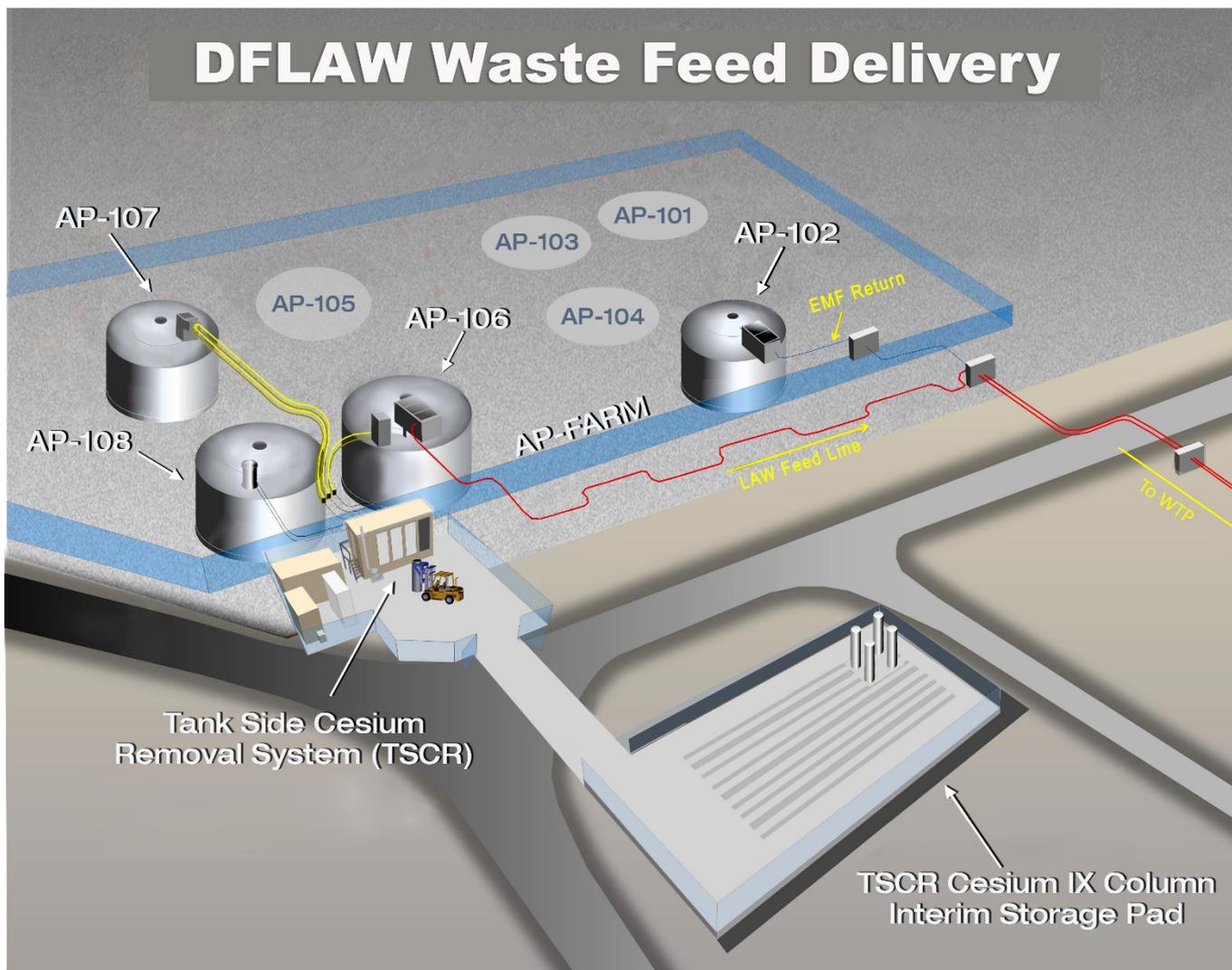
# Tank Side Cesium Removal Layout



# Tank Side Cesium Removal Process Enclosure



# Tank Side Cesium Removal Operations Conceptual Layout



# Regulatory Framework for Permitting

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- A permit issued under the Resource Conservation and Recovery Act (RCRA) provides the regulatory framework for management of hazardous waste at Hanford
  - Washington State Department of Ecology (Ecology) is the regulatory authority for the hazardous waste permit, which will include the LAWPS
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- ❖ **The addition of an Operating Unit Group to the Hanford Site-Wide Permit follows the Class 3 modification process in WAC 173-303-830(4)(c)**

# Low-Activity Waste Pretreatment System Permit Application Overview

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- The Phase One facilities will be located in the 200 East Area of the Hanford Site and will include TSCR, ion exchange column storage pad, and transfer lines
- Phase One will provide pretreated waste feed to the WTP LAW Facility in the Direct Feed Low-Activity Waste (DFLAW) configuration
- Treatment will consist of solids filtration and radioactive cesium removal by ion exchange
- DOE is seeking approval from Ecology to construct and operate the Phase One to support the DFLAW configuration for treating tank waste
- As Ecology reviews this application for completeness it will determine what information should be put into the permit for Phase One

Primary elements of the application include the following

- Seismic and traffic evaluations
- Part A form
- Waste analysis plan
- Process information
- Security requirements
- Preparedness and prevention
- Personnel training
- Closure plan
- Inspection plan
- Contingency plan
- Supporting design media (specifications, calculations, reports, and engineering drawings)

- The public is being asked to comment on the permit application
- Comment period is open through June 30, 2019
- Submit comments via mail or email (preferred) to the Washington State Department of Ecology

Daina McFadden

Washington State Department of Ecology

3100 Port of Benton Boulevard

Richland, WA 99354

Email:<http://wt.ecology.commentinput.com/?id=J6RbP>

- Since this is a Class 3 modification, there will be another 45-day public comment period on the draft permit, led by Ecology at a later date.

# THE HANFORD SITE | Questions?



The Hanford Reach  
White Bluffs Overlooking the Columbia River



OFFICE OF  
**RIVER PROTECTION**  
United States Department of Energy