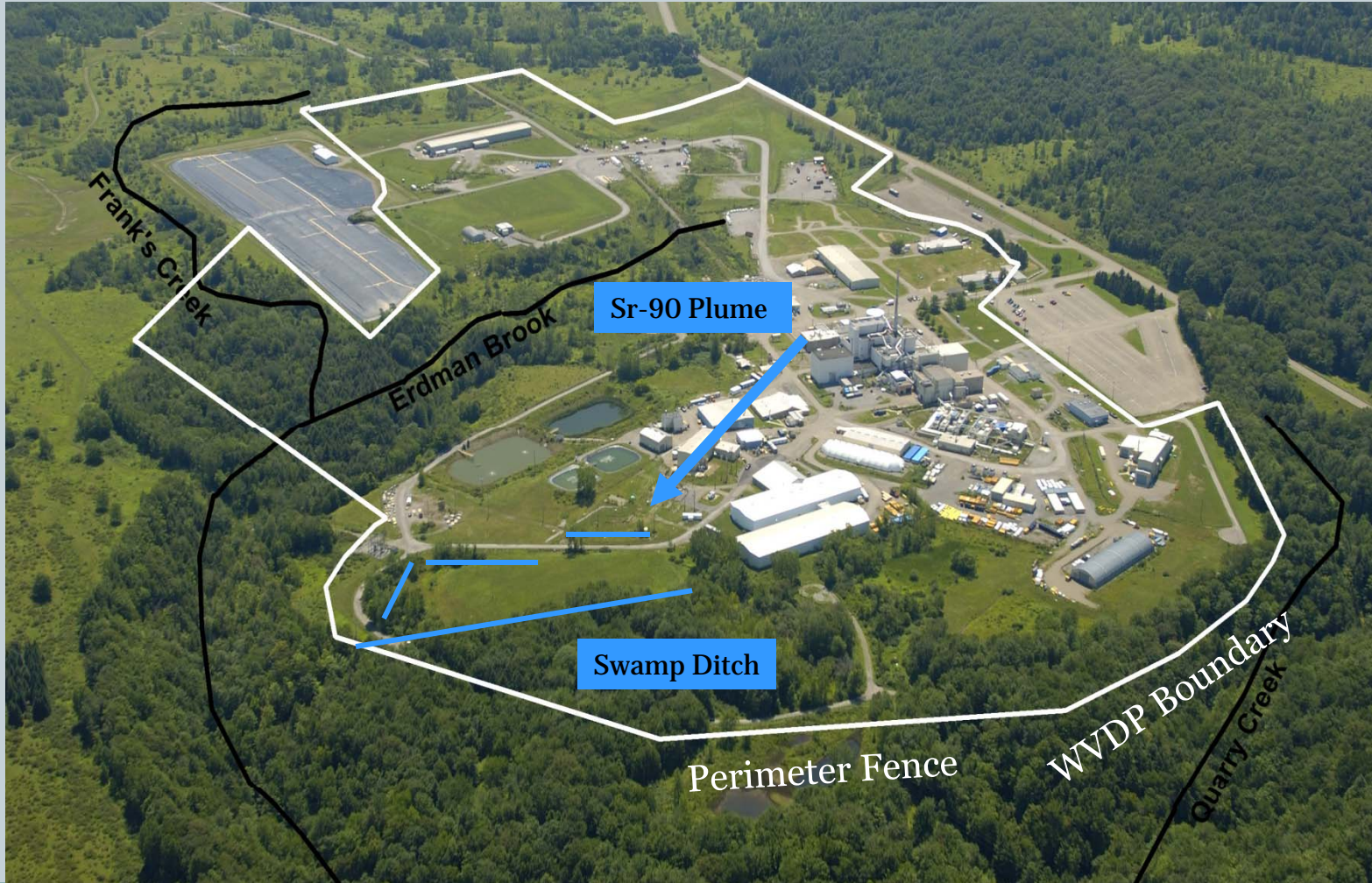


# West Valley Demonstration Project



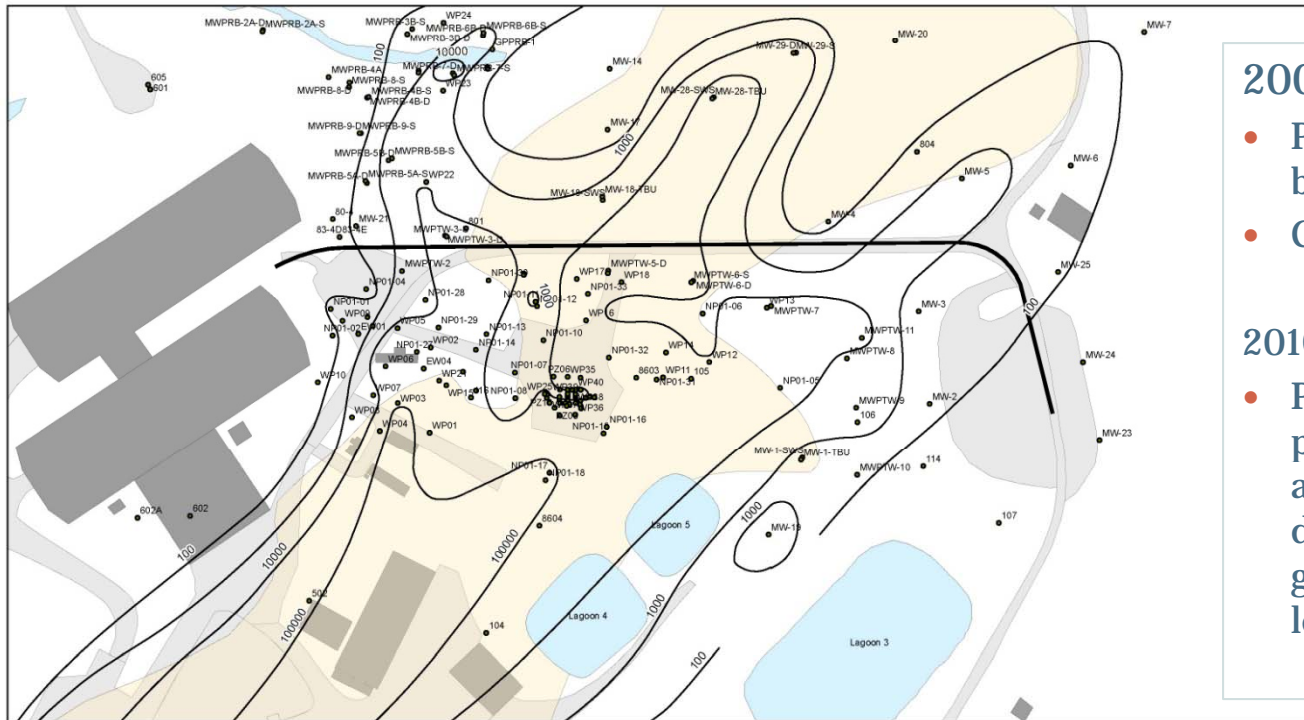
## PERMEABLE TREATMENT WALL INSTALLATION BRIEFING

# Groundwater Plume



Plume of Strontium-90 (Sr-90) contaminated groundwater extends from the Main Plant Process Building to the northeast

# Leading Edge Characterization



- 2008-2009**
  - Placed more than 80 borings and microwells
  - Conducted pump tests
- 2010**
  - Placed 39 borings along potential PTW alignment to confirm depth to glacial till and gauge distribution levels of Sr-90

**Legend**

- Monitoring Well
- PTW Alignment
- March 2009 Sr-90 Contours
- Surface Hydrology
- SWS
- Roads
- Structure

0 20 40 80 120 160 Feet  
1 inch = 80 feet

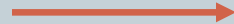
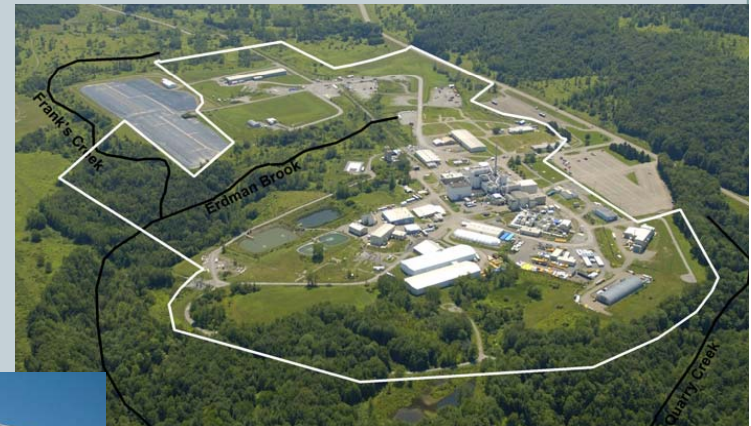
PERMEABLE TREATMENT WALL ALIGNMENT West Valley Environmental Services, LLC West Valley, New York		
By: ACF	Date: 12/16/09	Project No: 13302.003.0
<b>AMEC Geomatrix</b>		Figure 1

# PTW Design

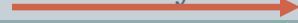


- Design required addressing plume morphology and site features, installation requirements and PTW performance

A one-pass trencher was selected to maximize potential for free groundwater flow through the PTW



Natural zeolite was selected for PTW media due to proven effectiveness in removing Sr-90, cost and availability



PTW location and dimensions were established with the target of containing the plume leading edge for up to 20 years



# Trencher



## The trencher is . . .

- ~200,000 pounds
- Powered by two 1,000 hp diesel motors
- Cutting bar 30' long, 39" wide
- Cutting teeth are titanium tipped
- Soil (spoils) conveyor designed, fabricated specifically for West Valley



# Zeolite



- University at Buffalo's department of Civil, Structural and Environmental Engineering tested zeolite from two sources for possible use
- Column studies were conducted for more than a year at UB using simulated (nonradioactive) groundwater and at WVDP using actual (radioactive) groundwater
- Using data collected, UB conducted modeling to assist in estimating PTW longevity



# Bear River Mine



## Selection of Bear River zeolite based on:

- Laboratory testing for cation exchange capacity
- Results of shipping tests
- Compatibility with trencher installation confirmed through field testing



## 1,940 bags – one metric ton each – staged on site

- UB tested composite samples from 60 bag lots to check that mined zeolite was comparable to zeolite tested



# PTW Structures



The existing access road was graded to prepare for trench installation

Soil containment is staged alongside the trenching pathway; high-density polyethylene liner was used in the "smart ditch"

New access road is located on opposite side of soil containment



New surface water drainage installed to divert stormwater away from PTW



# PTW

