U.S. DEPARTMENT of ENERGY

CTF Presentation - January 2026

West Valley Demonstration Project Main Plant Process Building Decommissioning – Lessons Learned

US DOE – West Valley

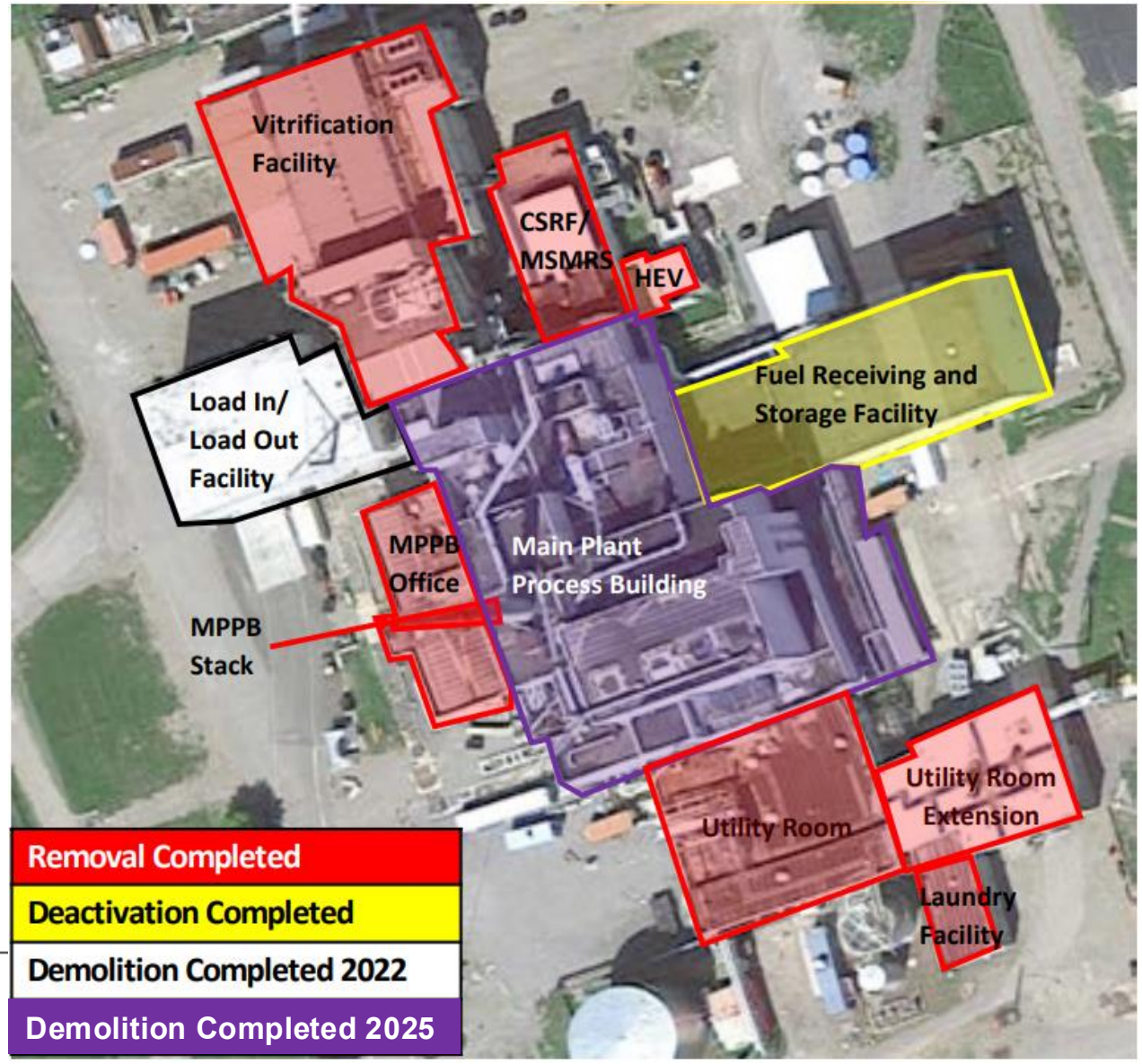
Site Operations Prime Contractor: CH2M-Hill/BWXT West Valley (CHBWV)

WVDP MPPB Deconstruction – Introduction

The successful and compliant demolition of the MPPB at the WVDP occurred from September 2022 to May 2025.

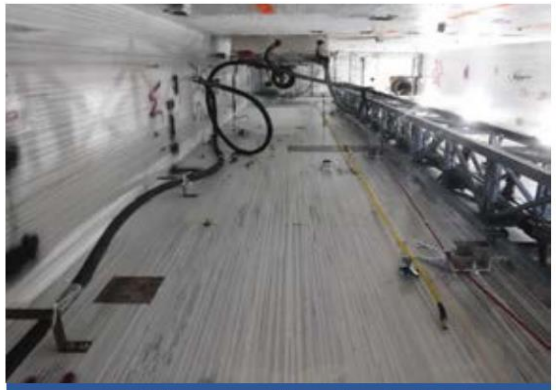
This presentation introduces the processes and lessons learned during the planning and execution of the demolition.

WVDP Decommissioning – 2020-2022 MPPB Planning and Decon



- 2018 to 2022: Ancillary Structures attached to MPPB were demolished and waste packaged for disposal
- Decontamination of the MPPB intended to minimize worker dose and potential for airborne contaminants
- MPPB placed in a “cold and dark” status
- Site policies, procedure, and plans modified to fit the MPPB decommissioning needs
- **Lessons Learned from ancillary demolitions were included in the MPPB plans**

PPC-S in 2019



PPC-S floor to ceiling view in 2022

WVDP MPPB Deconstruction – Site Preparation

Reuse/Modification of Existing Facilities

Drum Cell Modifications: Re-purposed to prepare intermodal waste containers.

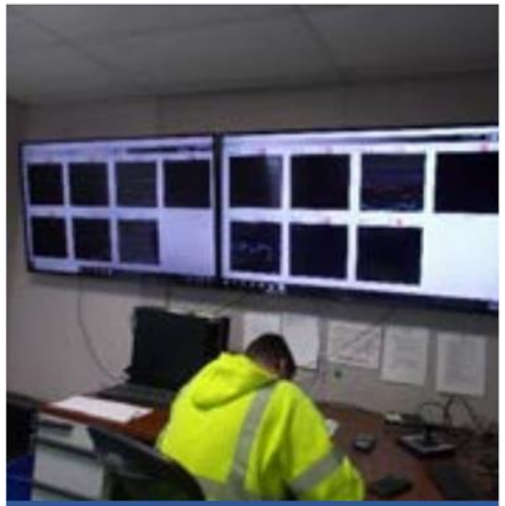
Rail Operations: Existing rail infrastructure upgraded for waste shipments.

Water Management System: Existing storm-water systems and other structures were modified to collect dust-suppression water and precipitation within the demolition area for onsite management.

10-Plex Modifications: Multi-use building modified to support site operations and provide Asbestos Containing Material (ACM) decontamination showers, locker rooms, radiation monitoring control room, and respirator protection issue room.

Drum Cell – New rollup door and driveway

New concrete floor inside Drum Cell



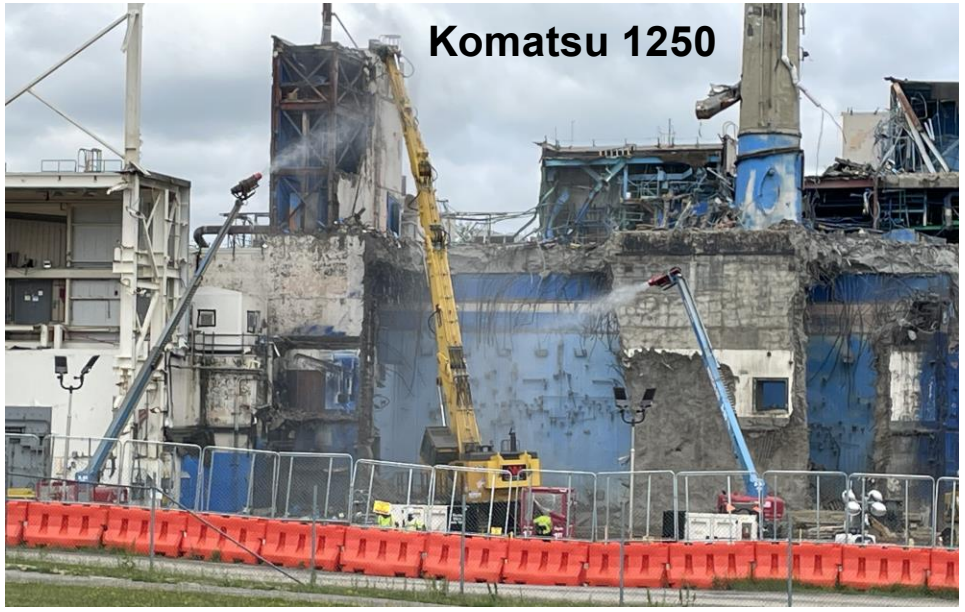
10-Plex Radiation Monitoring Control Room

Water Management System

MPPB Deconstruction – Equipment Deployed

Both New and Reused from Other DOE Sites

Heavy Lift Fork Truck

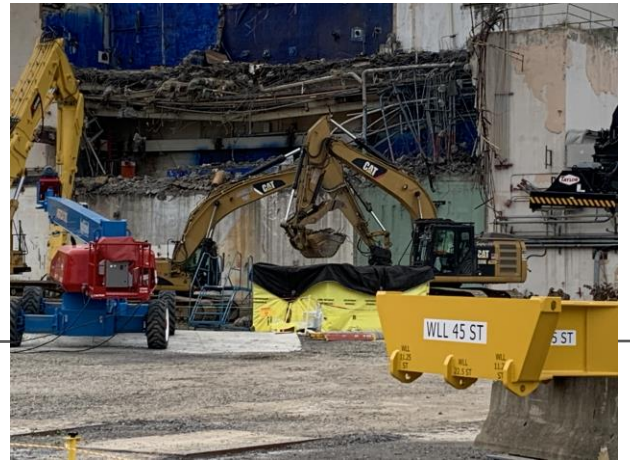


Remotely Operated Turbine High Lift Sprayers

Pin Trailer ↑

Taylor Reach Stacker →

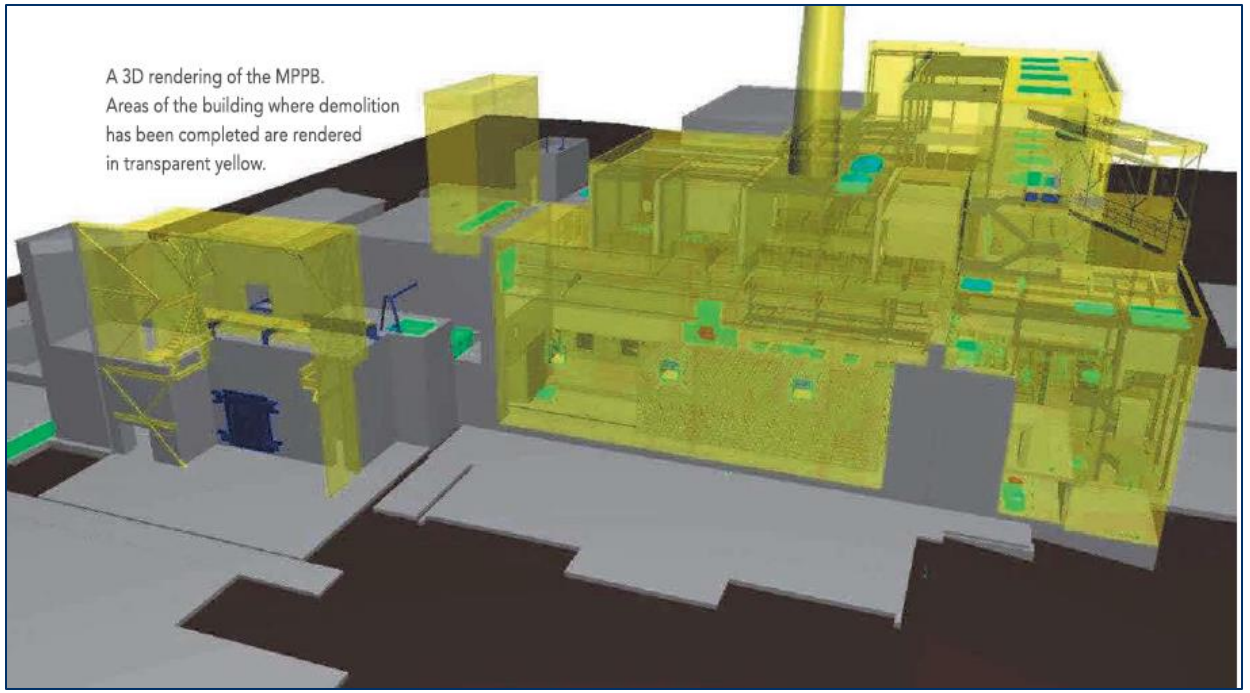
Multiple Excavators of Varying Sizes

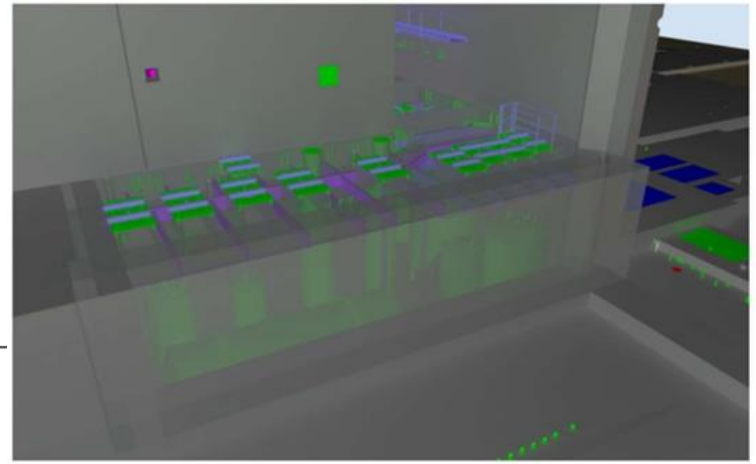


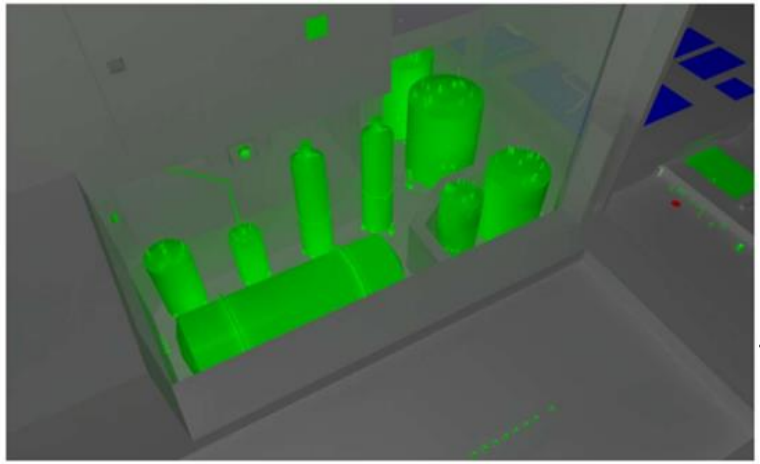
WVDP MPPB Deconstruction – Progression Planning

Work Instruction Package (WIP):

- Project plan that governed the progression of demolition
- Employed a 3-D building model to plan demolition and track progress
- Defined the industrial & radiological hazards in each portion of the plant
- Considered structural competency as demolition progresses
- Included waste-profile considerations (e.g., radioactive piping, ventilation ducts, tanks)
- Listed the “Protected Assumptions” derived from radiological modeling and dose thresholds







WVDP MPPB Deconstruction – Protected Assumptions

Protected Assumptions - Rules to ensure operations stay within the predicted levels of airborne and surface contamination to protect workers, public, and the environment from non-compliant exposures.

Protected Assumptions drove the real-time air monitoring program and governed deliberate demolition pace to minimize emissions and ensure NESHAP compliance (National Emission Standards for Hazardous Air Pollutants)

MPPB Deconstruction – Open Air Demolition Strategy

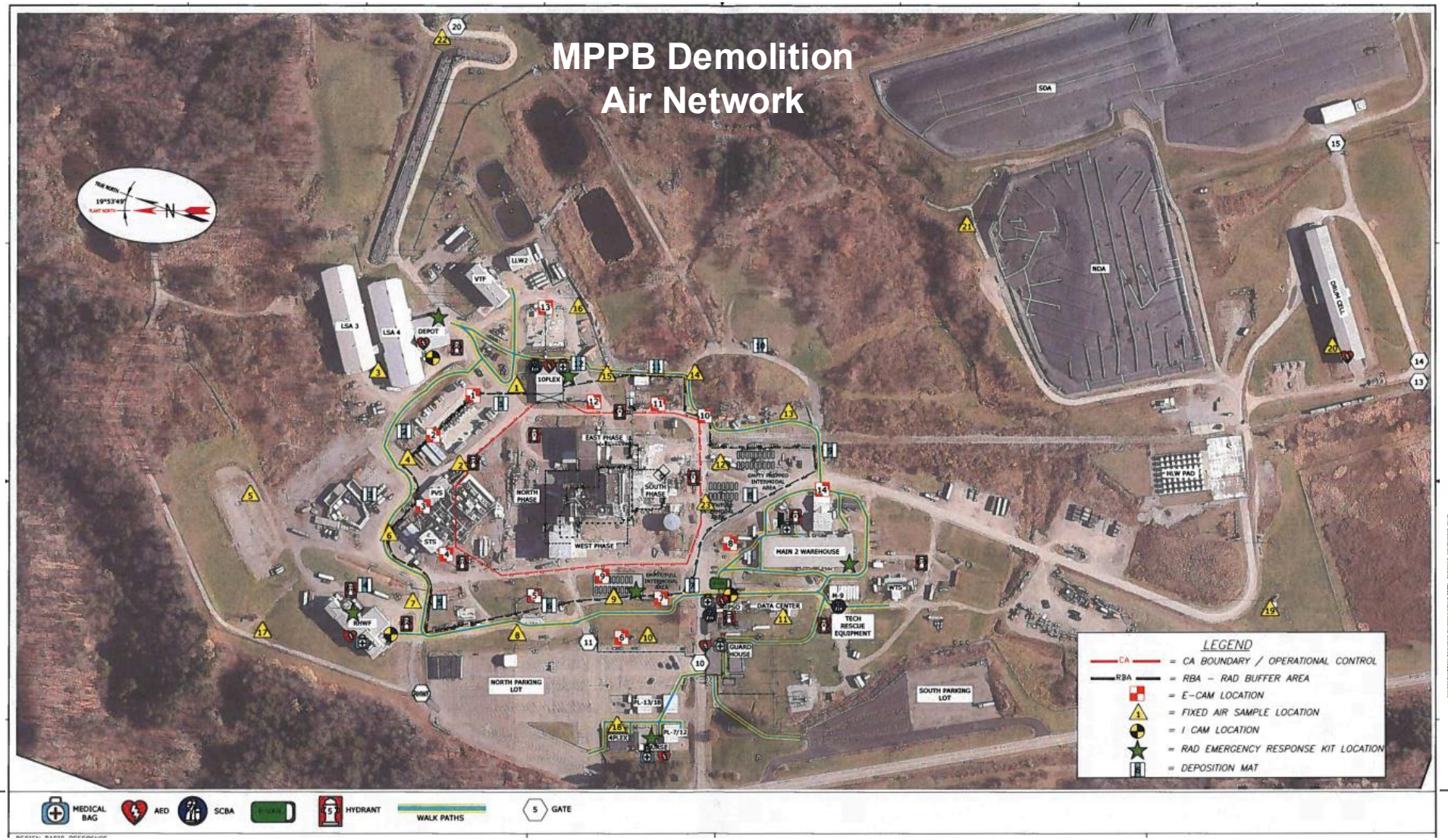
Apply Protected Assumptions to define work progress by location, contaminant levels, and known meteorology

- Known contamination data on interior and exterior MPPB surfaces used to estimate potential emissions from open-air demolition
- Demolition activities, methods, and durations per 10-hour shift are governed by building radioactivity and modeled dose
- Higher Activity and/or Non-Optimal Weather = Slower pace and/or smaller demolition area per day and/or greater dust suppression

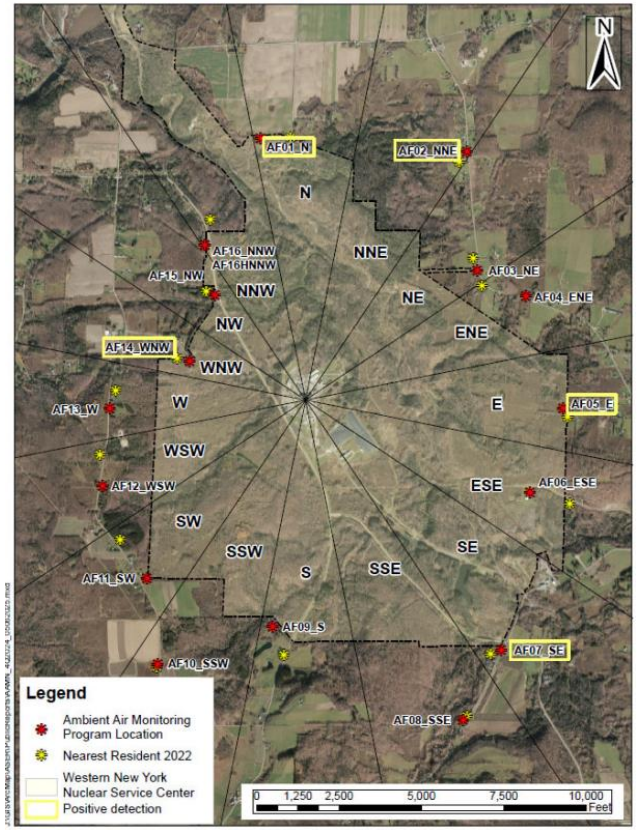
Deposition Plate

Deployment, Calibration, and Operation of Robust Real-Time Air Monitoring Program With Preset Alerts

WVDP MPPB Deconstruction – Air Monitoring Array

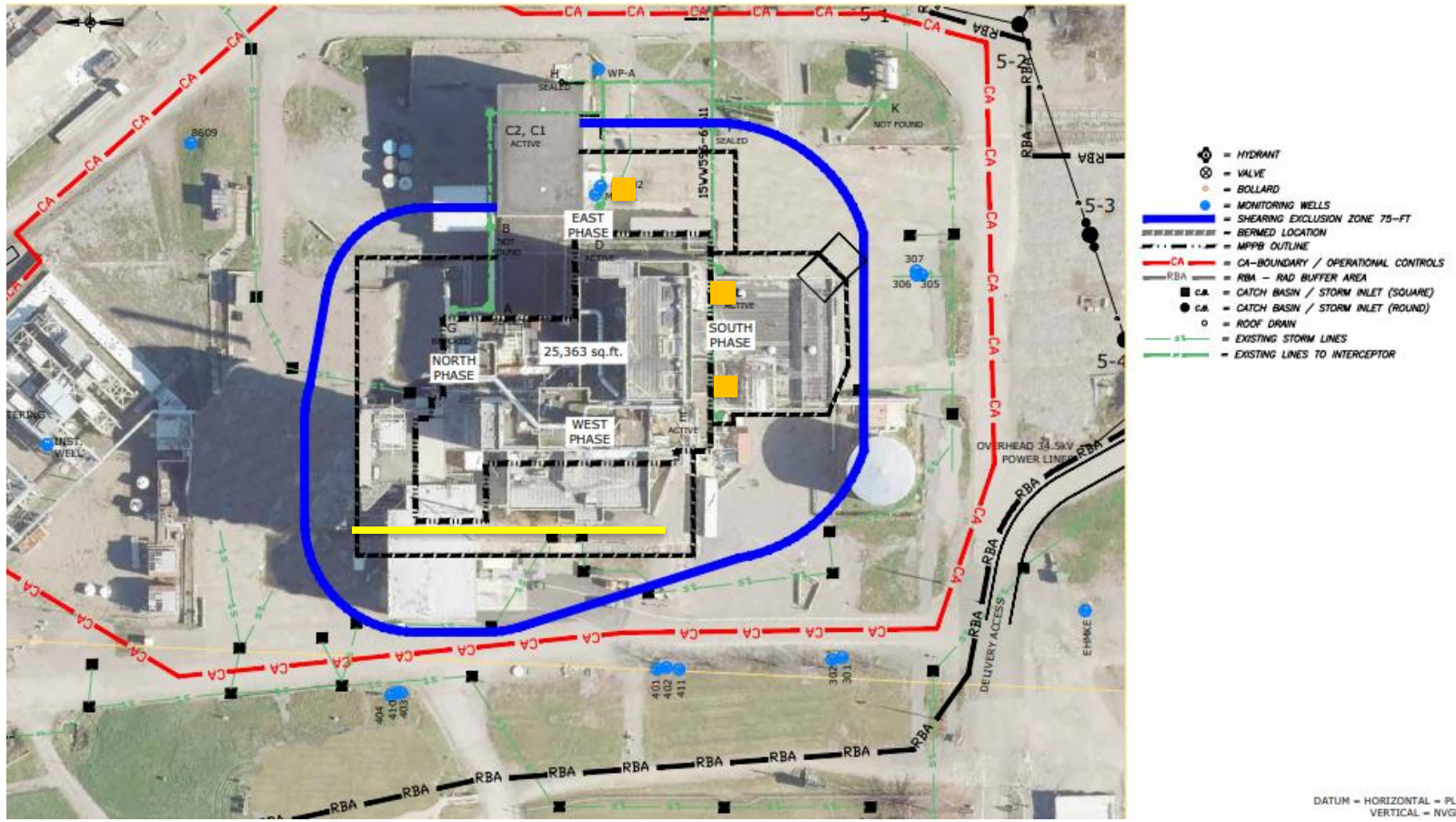


Ambient Air Network



MPPB Deconstruction – Stormwater Management

- Catch basins and drainage lines mapped in MPPB area
- Plugged all catch basins/drains in demolition-area that had uncontrolled outfalls
- Demolition-areas ringed by a concrete water-control berm (18-inch-high curb)
- Demolition-area drains and conveyance lines routed to water treatment system
- Off-Gas Trench use as water collector (yellow line)
- All site catch basins outfitted with filter socks to control turbidity and routinely surveyed for radiological impacts



Lessons Learned – Dust Suppression

Dust Suppression Management:

- Windsocks and Field Observations
- Live Weather Station Data
- Pre-Job Planning Based Upon Anticipated Debris Type and Contamination Levels
- Field Adjustments Before & During Demolition
- Daily Management of Waste in an Open-Air Environment (fixative lock down of waste on ground)

Lessons Learned – Demolition Water Controls

Water and Sediment Controls:

- Concrete Berms and the Infiltration Trench (Off-Gas Trench outlined in yellow) Ensured Water In the High Contamination Area Was Controlled
- Sediment Controls (Coir Rolls and Sandbags) Surround Contamination Area and Stormwater Inlets to Minimize Sediment Influx to Treatment System
- Routine Surveys and Continuous Housekeeping Needed to Ensure Controls Are Maintained (e.g., non-routine maintenance of filter socks)

Lessons Learned – Job Site Maintenance

Water Management Components Required Routine Maintenance

Catch Basins Outfitted with Sediment Controls and Internal Filter Socks Routinely Inspected, Surveyed, and Cleaned

Lessons Learned – Infrastructure Management

Water, Air, and Electrical Line Management

- Configured to Minimize Hazards
- Routine Inspections of Placement and Use
- Account for Changing Conditions (rainfall, snow, traffic patterns)
- Site Operations Provided Housekeeping and Optimized Placements

Lessons Learned – Waste Management

Collaboration of Radiation Controls and Waste Processing Experts

- Ensured compliant waste characterization and transportation to multiple end points (Energy Solutions, Waste Control Specialists, NNSS)
- Selection of waste packages that meet waste shipping and disposal requirements (configuration and dose)
- Protected Assumptions required packaging of demolition waste by end of each day
- When waste remained on the ground due to unforeseen circumstances, fixative lock down was required until packaged the next day

Tank Hoisting and Rigging With Spotters and Cleared Space

Lessons Learned – Best Management Practices

Dust Suppression During Equipment Moves and End Effector Changes Minimized Ancillary Dust

Application of Fixative (Gorilla Snot) Lock Down of Soils and Debris at Shift End

Lessons Learned – Adaptive Management

Stormwater Interceptor System Designed to Handle Precipitation and Dust-Suppression Flows During All Weather Conditions

Weather Challenges in the Snow Belt Add Complexity

Lessons Learned Summary

- ✓ Work Instruction Package
  - Living document that controlled progression of demolition and identified hazards
- ✓ Protected Assumptions
  - Ensured careful and compliant demolition to minimize emissions and dose
- ✓ Real-Time Radiation Monitoring and Controls
  - Health & safety program to protect workers and public, control demolition pace
- ✓ Collaboration of Radiation Controls and Waste Processing Experts
  - Ensured compliant waste characterization and transportation to multiple end points (Energy Solutions, Waste Control Specialists, NNSS)
- ✓ Prior Deactivation and Decontamination of the MPPB
  - Significantly reduced airborne contamination risk during demolition

Lessons Learned Summary (cont.)

- ✓ Design, Installation, and Operation of Demolition Water Management System
  - Ensured system was robust and could handle both chemical and radiological inputs
- ✓ Stakeholder Engagement Before and During Demolition
  - Educate the Public and Regulators on the safety systems associated with open-air demolition and positive track record using modern air monitoring techniques and analyses
- ✓ Oversight
  - Rotational oversight by CHBWV and DOE were “a set of unbiased eyes” on the daily execution, both day and evening shifts

PROJECT SUMMARY

Scope Achieved

The WVDP compliantly executed the open-air, controlled deconstruction of the above-grade portion of the MPPB

Demolition Completed May 16, 2025.

- One Month Ahead of Schedule

Projected Total Project Cost: $164M

- ~$42M Under Budget

QUICK NUMBERS

The MPPB above-grade demolition was performed successfully, safely, and compliantly (ending June 11, 2025).

Total Mass

~28,850

Tons of MPPB (above-grade) waste shipped off site

By Rail

1,378

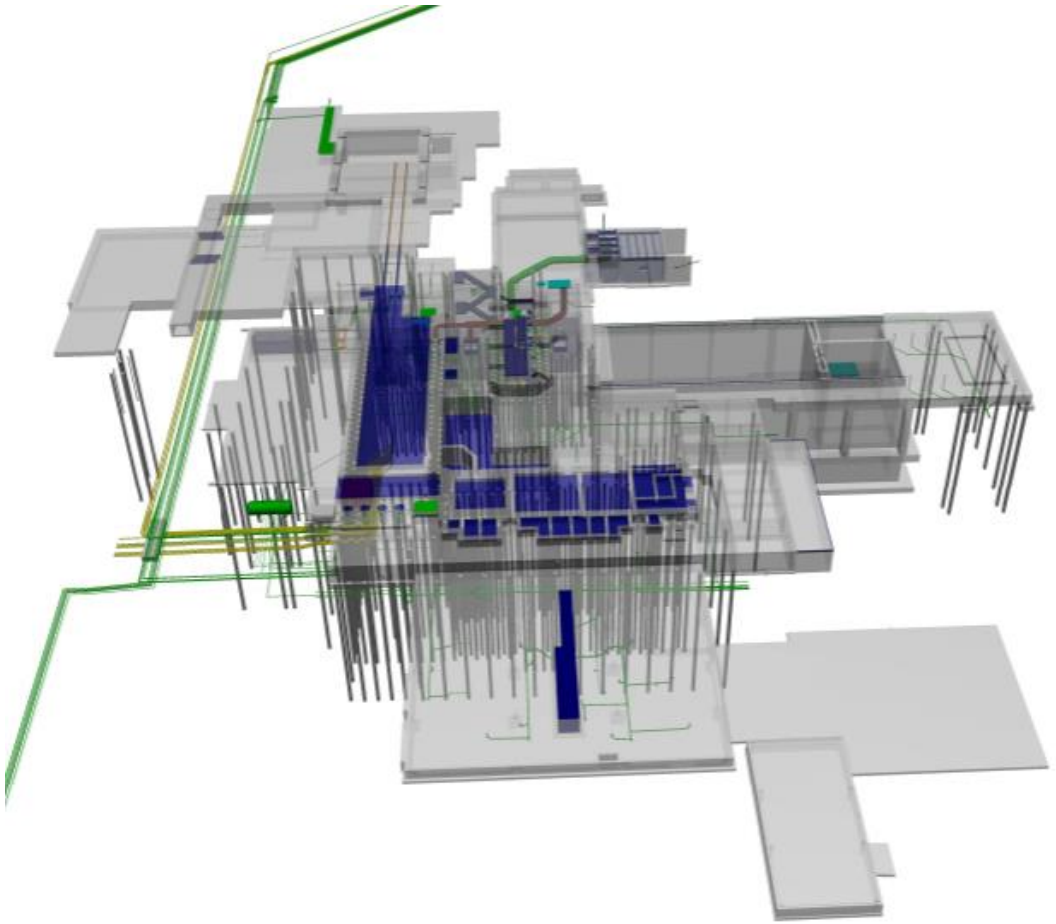
Containers shipped over the rail

By Truck

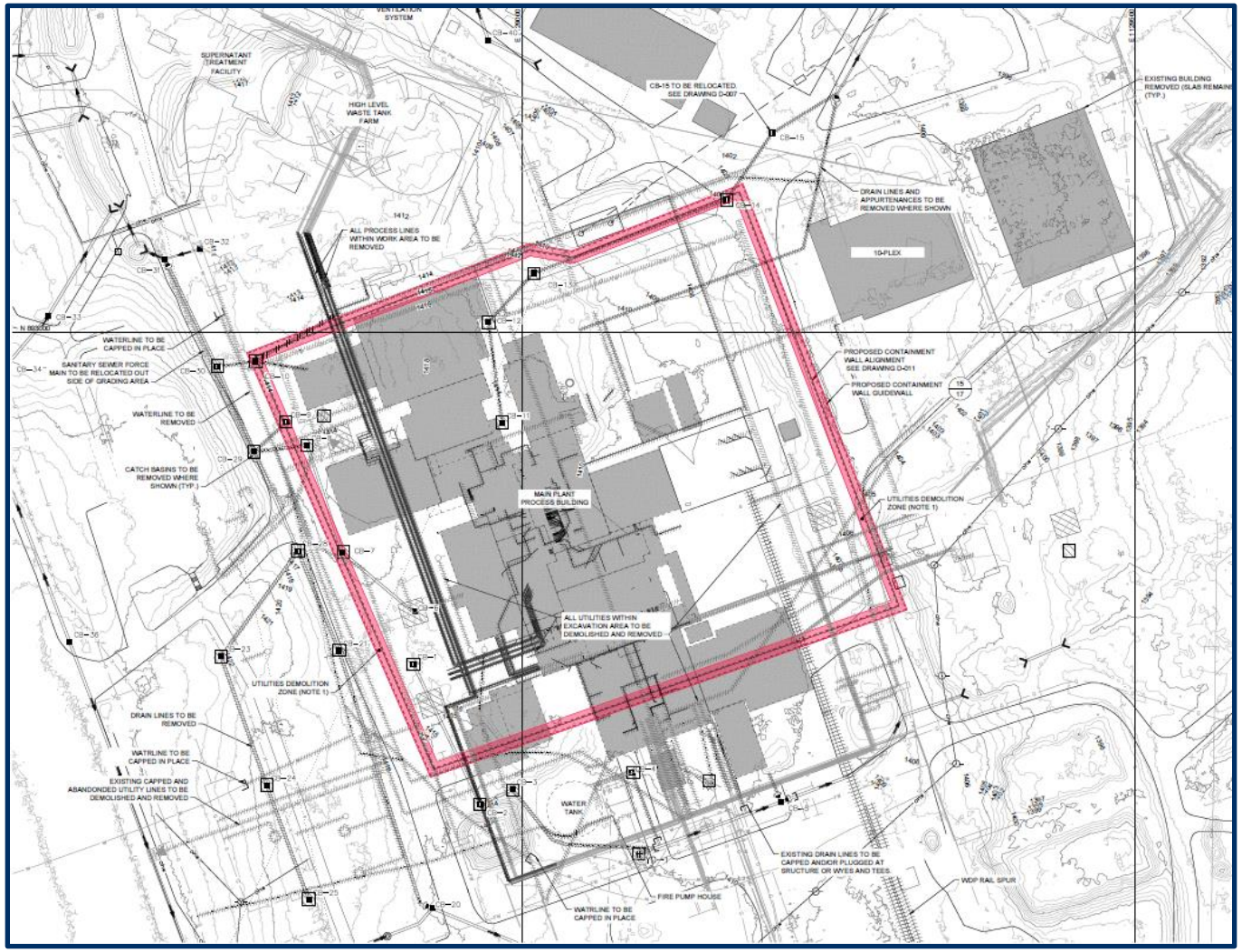
160

Speciality Containers shipped over the road

MPPB – Where To Next?



3-D Model of At-Grade and Below-Grade MPPB Infrastructure – More Than Above-Grade!



Draft 60% Design of MPPB Excavation Area

End of Phase 1 - Where We Want To Be & Any Questions

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