U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

EFCOG Waste Management

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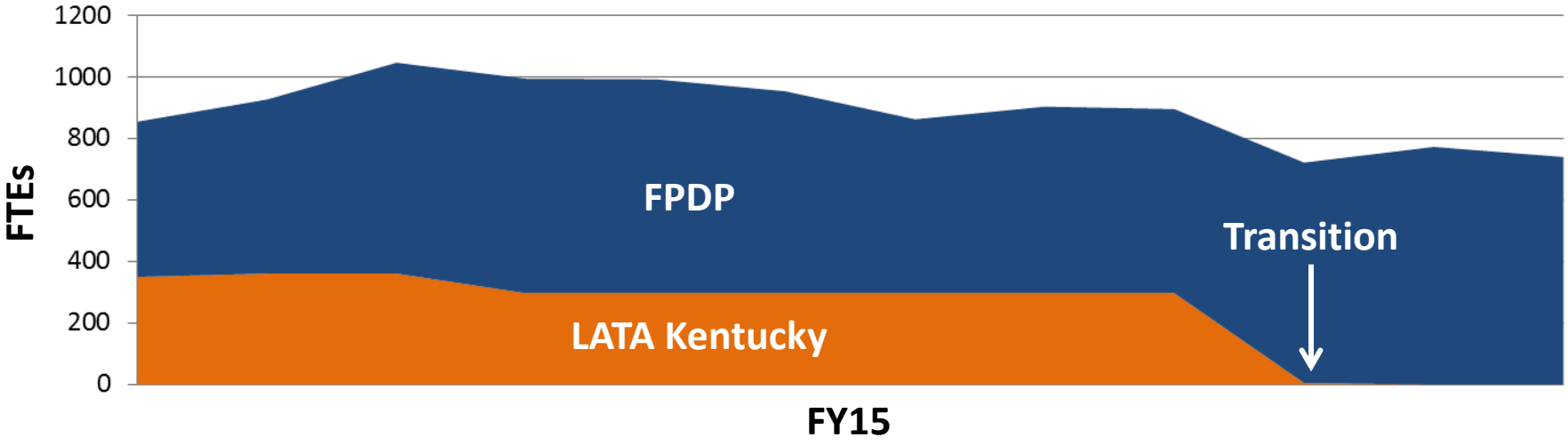
Issues and Challenges

- Transition of waste management programs from Remediation Contractor to Deactivation contractor
- Completion of Waste Disposal Alternatives program
- Fissile Waste Shipment program implementation within the Deactivation Program
- D&D Programs and Waste Volumes

Addressing Paducah Challenges

Transition of Remediation Contract

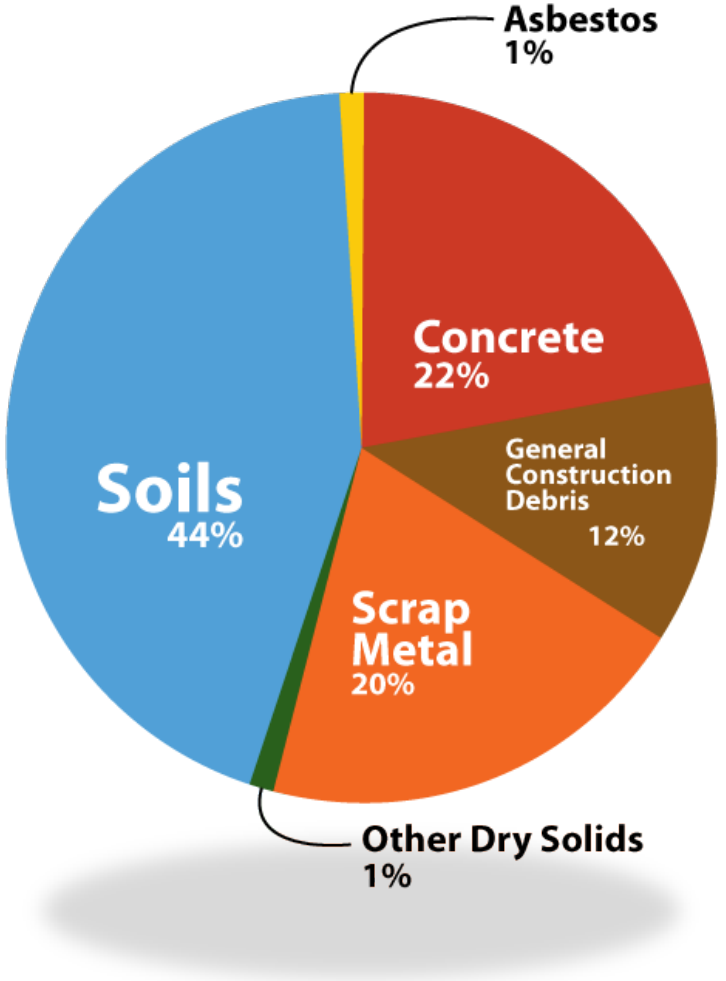
- In July LATA Kentucky's cleanup contract will transition to FPDP's scope.
- In order to maintain consistency between the two contracts hiring guiding principles were prepared that lessened personnel impacts and shared resources.
  - Employees were allowed to work part-time for each contract.
  - Hiring dates were staggered through the overlapping period to minimize impacts with backfill support to LATA Kentucky through a temp agency.
  - Established work authorizations from Fluor to LATA Kentucky to receive waste management and analytical services with existing staff through transition.



CHALLENGE:

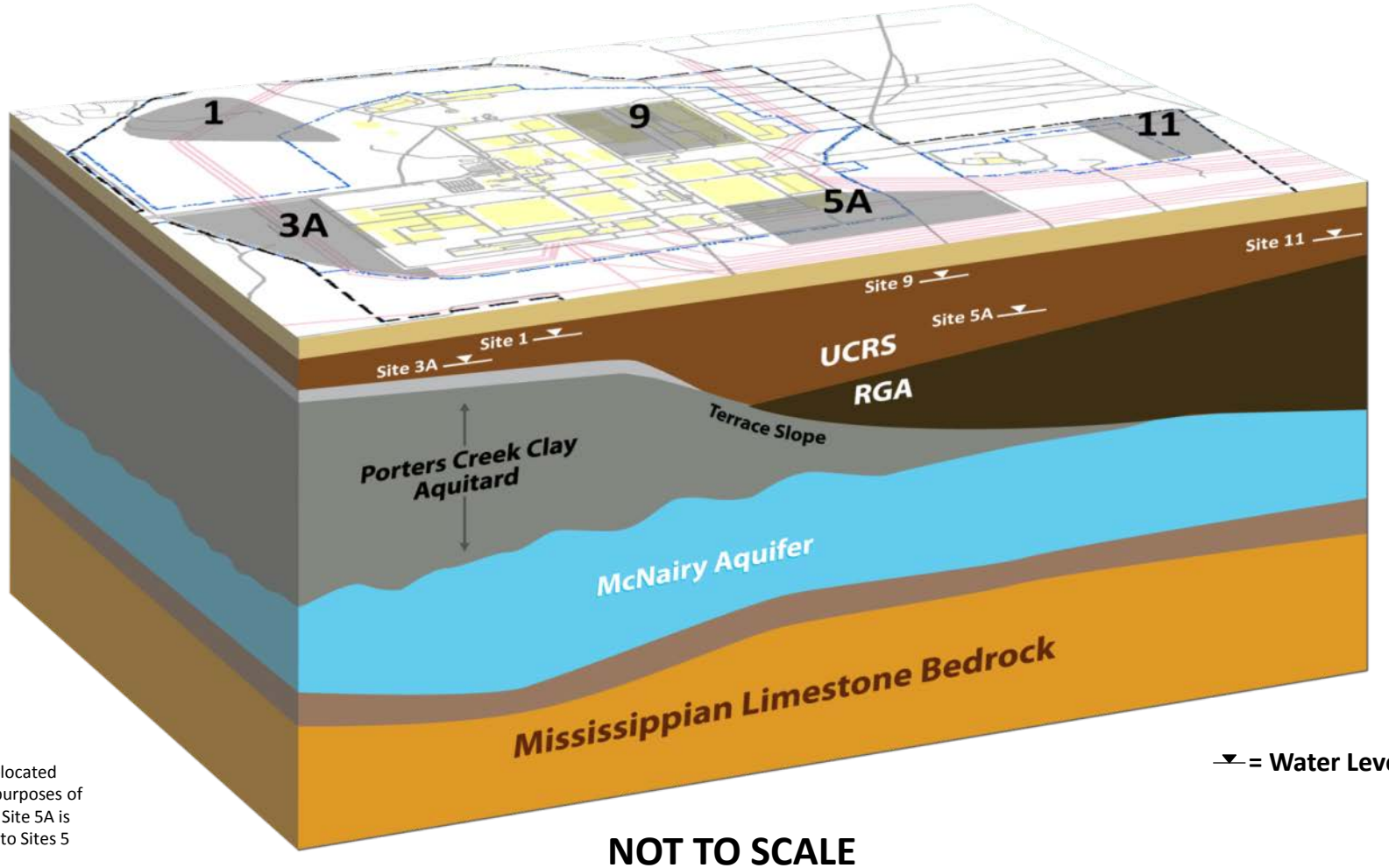
Waste Disposal Alternatives (WDA)

- Complete the CERCLA decision process for a waste disposal alternative to support long-term site cleanup with multiple stakeholder questions
  - Community Acceptance
  - Seismic
  - Siting



Addressing Paducah Challenges

Potential sites identified for an on-site disposal cell have unique challenges.

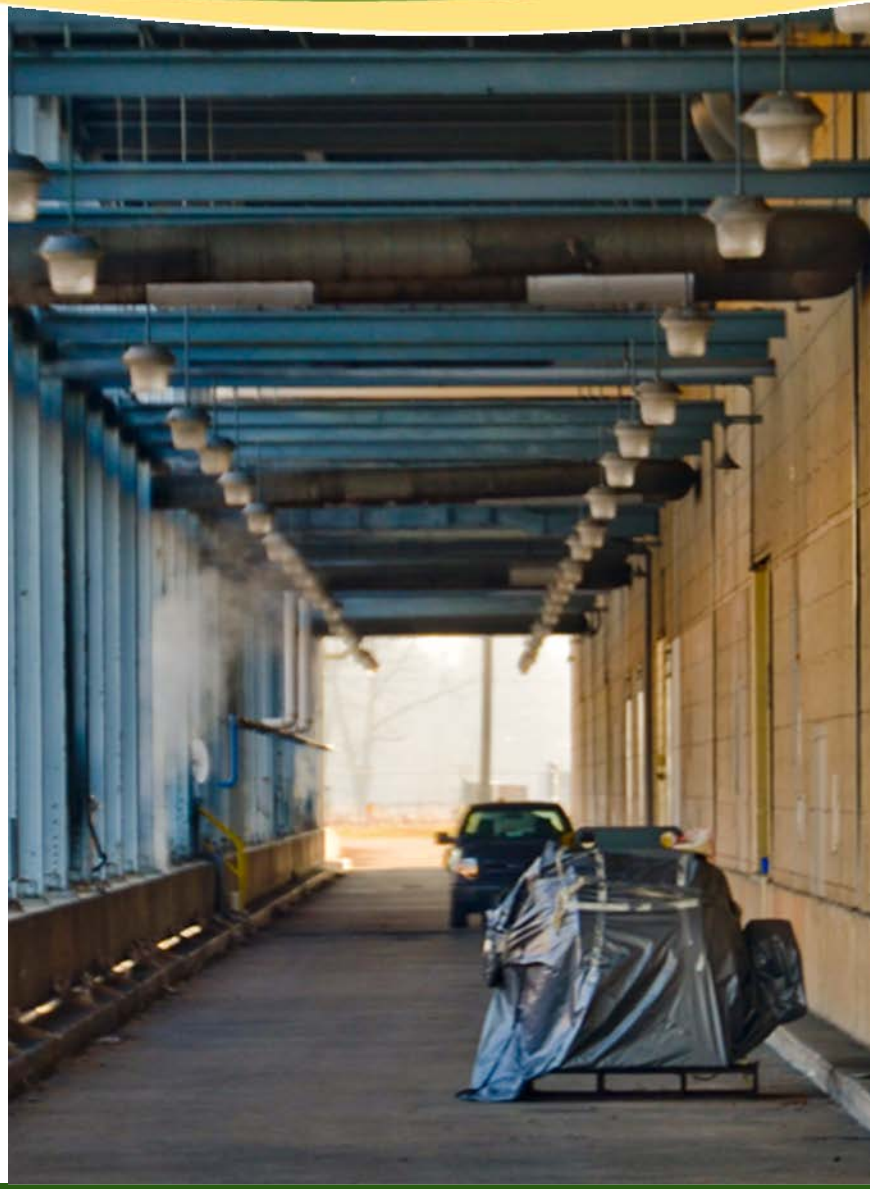


*Sites 5 and 6 are co-located with Site 5A. For the purposes of these considerations, Site 5A is deemed to be similar to Sites 5 and 6.

NOT TO SCALE

Fissile Waste Shipment Program

- Over the last decade, the majority of shipments made from the PGDP were non-fissile or fissile excepted
- Deactivation scope introduces a new challenge to the Paducah site since the majority of waste expected to be generated will be fissile with assays ranging up to 5.5%
- These waste streams include:
  - Uranium hold-up material in cascade piping and system components
  - Alumina, Sodium Fluoride, and Magnesium Fluoride Trap Media used during cell treatment activities
  - Spare Parts and Equipment will various amounts of fissile hold-up
- Challenges include:
  - Implementation of a QS NDA Program to ensure proper characterization of hold-up materials
  - Ensuring no unreacted UF6 is held up within deposits
  - Increase need for Transportation guidance for packaging waste that will meet DOT fissile gram restrictions
  - Accomplishing efficient packaging and consolidation of items while still meeting Nuclear Criticality Safety requirements for the site

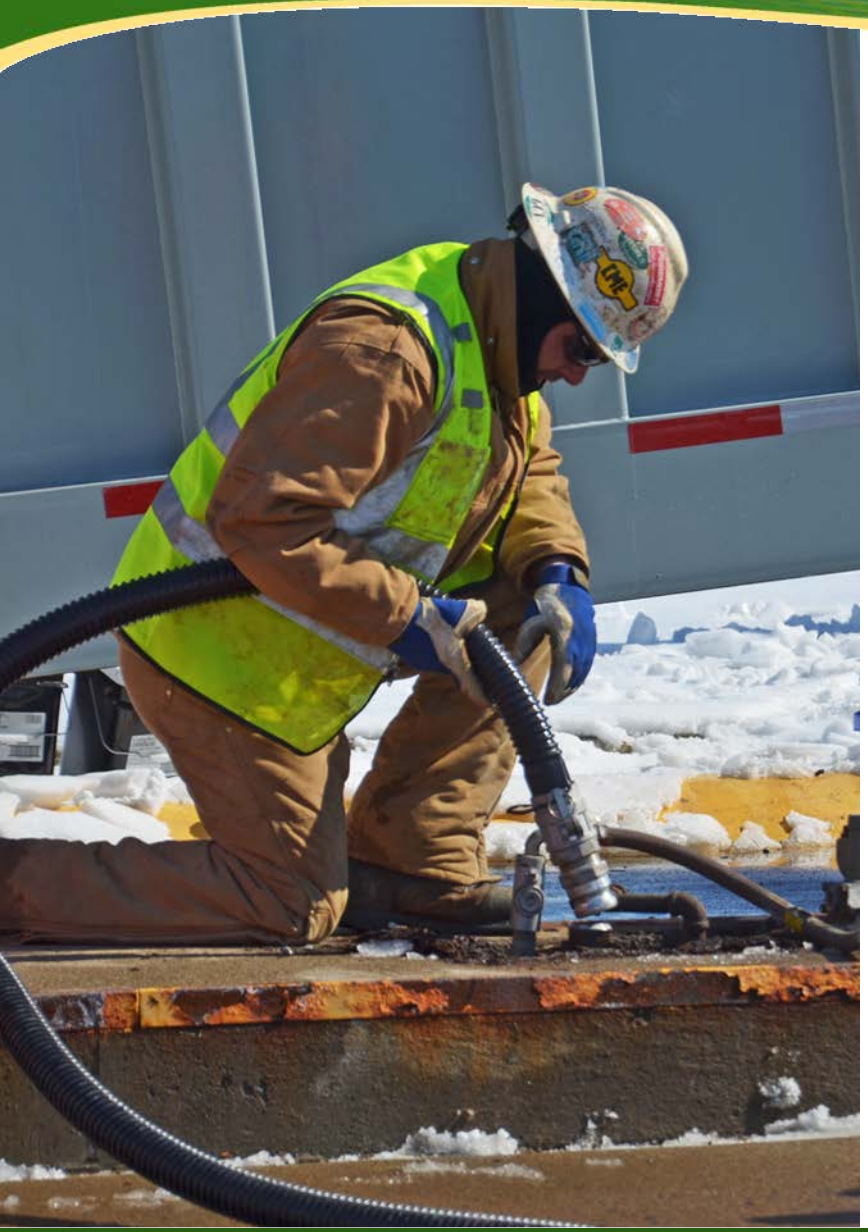


Addressing Paducah Challenges

DEPOSIT REMOVAL

- Multi-year year project averaging about 90 employees.
- Design, procure and fabricate uranium deposit removal equipment and carts.
- Perform in-situ chemical deposit removal on all process gas equipment to reduce uranium hold up in the systems
- Removes uranium holdup and deposits so that buildings can be downgraded to non-nuclear; cost savings allow funding to be used on cleanup activities
- Reduces the risk of D&D waste that may require off-site shipment and potential cost avoidance

D&D Programs and Waste Volumes



- **Limited D&D Operations in FY15/16**
- **LATA KY**
  - Diesel/Gasoline – ~900 gallons
  - UST Debris – 1200 ft^3
  - Wastewaters
    - 25,000 gallons from UST;
    - 220,000 gallons C-410 basement water
  - C-746-A Metal Flooring – 40,800 square feet
  - C-410 Debris Remaining – 213,000 ft^3
  - C-410 Mixed Waste – 200 ft^3
  - C-600 Upgrade Debris – ~1100 ft^3

Fluor Deactivation Projects

Fluor

- Lube oil – 265,000 gallons
- Transformer oil – 105,000 gallon
- C-720 Spare Parts – ~ 100 fissile items
- C-337 Spare Parts – 6,000 ft^3, non-fissile
- C-337 Spare Parts – 17,000 ft^3 fissile parts
- C-337 Spare Parts – 2,400 ft^3- hold-up material removed from parts
- Acid/hazardous chemical – at least 4,000 gallons of sulfuric acid/sludge
- Fissile Trap Media from cell treatment process
- C-409 clean out – possibility for mixed waste with very high fissile gram content
  - Challenge – self-performing chemical stabilization to meet NNSS requirement for Mixed Waste since commercial treatment is limited due to restrictive limits for grams of special nuclear material by the receiving facilities