A/AX Tank Farms
Single-Shell Tank Retrievals

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AX-102 Sluicing Operations

A Farm Exhausters
Operations started Aug. 31, using low-pressure sluicing
69 percent of waste recovered
Challenges with fogging and lighting
Tank vapor protections demonstrated effective

Interior of AX-102 before retrieval
AX-102 Equipment Issues and Path Forward

Status
- Retrieval operations suspended Sept. 13 due to equipment issues
- No effect on waste containment or worker safety

Path Forward
- Complete a cause analysis and repairs to resume operations
- Continue cycles of low-pressure sluicing and high-pressure water
- Lessons learned will improve future retrievals

Sluicer #3 bent hydraulic ram piston at elbow

Sluicer #2 PUREX connector leak identified during water flush inspection
Remaining AX Farm Tank Retrievals

- Complete construction and start AX-104 retrieval during summer of 2020
- Complete waste retrieval system construction of AX-101 and AX-103 and retrieve in 2021-2022
- Attributes of remaining AX tank wastes:

<table>
<thead>
<tr>
<th>Tank</th>
<th>Sludge</th>
<th>Saltcake</th>
<th>Supernatant</th>
<th>Total Radionuclide Inventory (curies)</th>
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<tbody>
<tr>
<td>241-AX-101</td>
<td>2</td>
<td>318</td>
<td>0</td>
<td>747k</td>
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<tr>
<td>241-AX-102</td>
<td>6</td>
<td>24</td>
<td>6</td>
<td>386k</td>
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<tr>
<td>241-AX-103</td>
<td>8</td>
<td>96</td>
<td>4</td>
<td>778k</td>
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<tr>
<td>241-AX-104</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1,870k</td>
</tr>
</tbody>
</table>
A Farm Waste Retrieval System Facility Inter-farm Locations
A Farm Tank Retrievals

- Complete exhauster construction and start operations May 2020

- A Farm Waste Retrieval System engineering design and equipment fabrications

- Waste Management Area A/AX characterization and performance assessment development and deployment
New Retrieval Technology Deployment

Solutions in development:
- In-tank mechanical processing
- Limited fluids retrieval methods
- Improvements to existing equipment

Mobile Waste Gathering System (In-tank vehicle to grind/push waste)

Hanford Waste End-Effector (Localized, low-fluid sluicing/pumping head)

Extended Reach Sluicer Modification (Adds vertical motion capability)
SUMMARY

- Safe and effective AX-102 retrieval approximately 69% complete
- AX-104 retrieval on schedule; will begin operations in summer 2020
- Retrievals present many challenges
  - Equipment issues in AX-102
  - New technology development