DOE Tank Removal Study

Hanford Advisory Board

Tank Waste Committee

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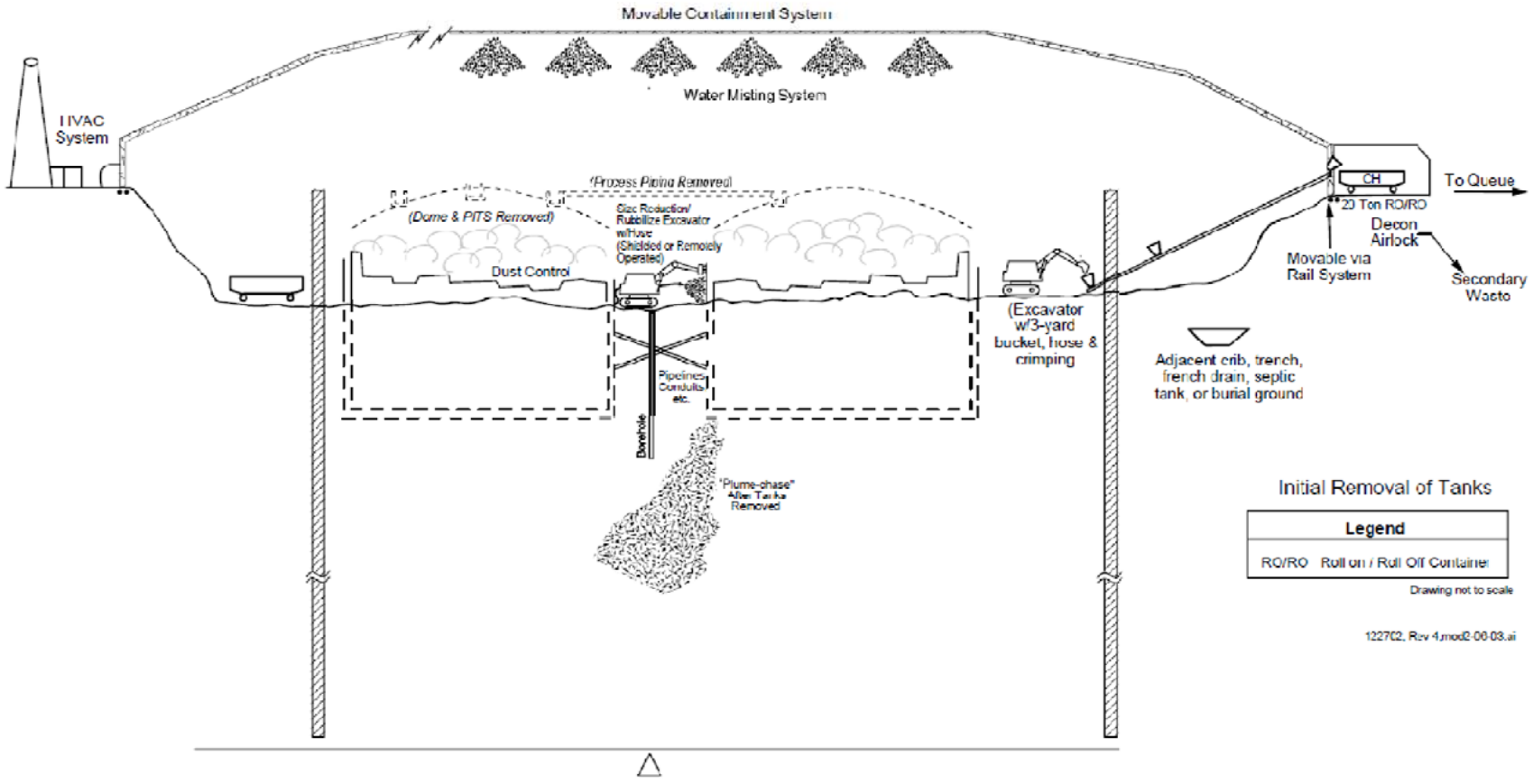
Concept Sketch for Tank Removal

Figure 3-1. Concept Sketch for Tank Removal Developed for Tank Closure EIS.

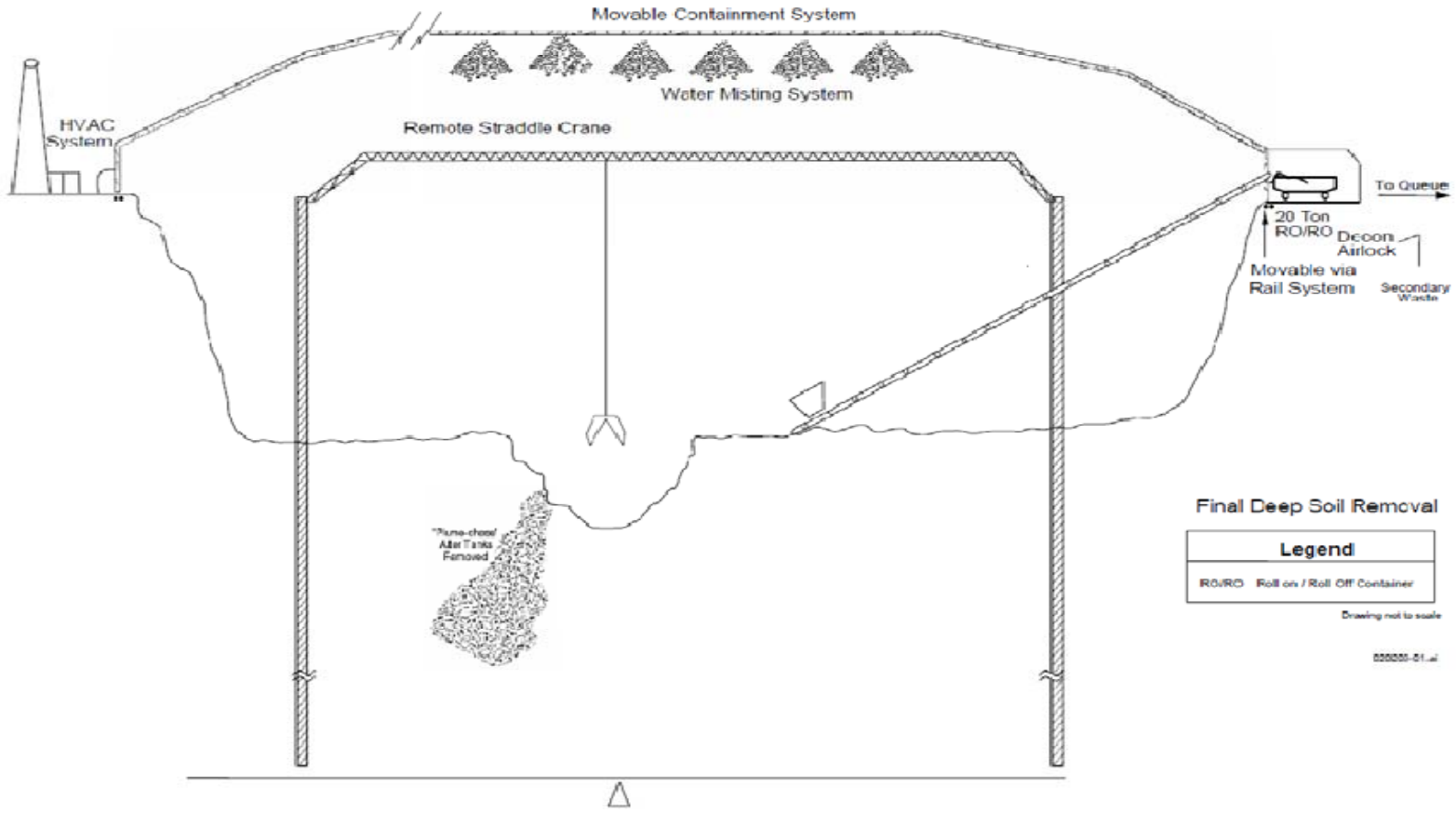


Source: DOE (2003).

Page 3-3 of RPP-RPT-47167

Concept Sketch - Deep Soil Excavation

Figure 3-2. Concept Sketch for Deep Soil Excavation Developed for the Tank Closure EIS.



Source: DOE (2003).

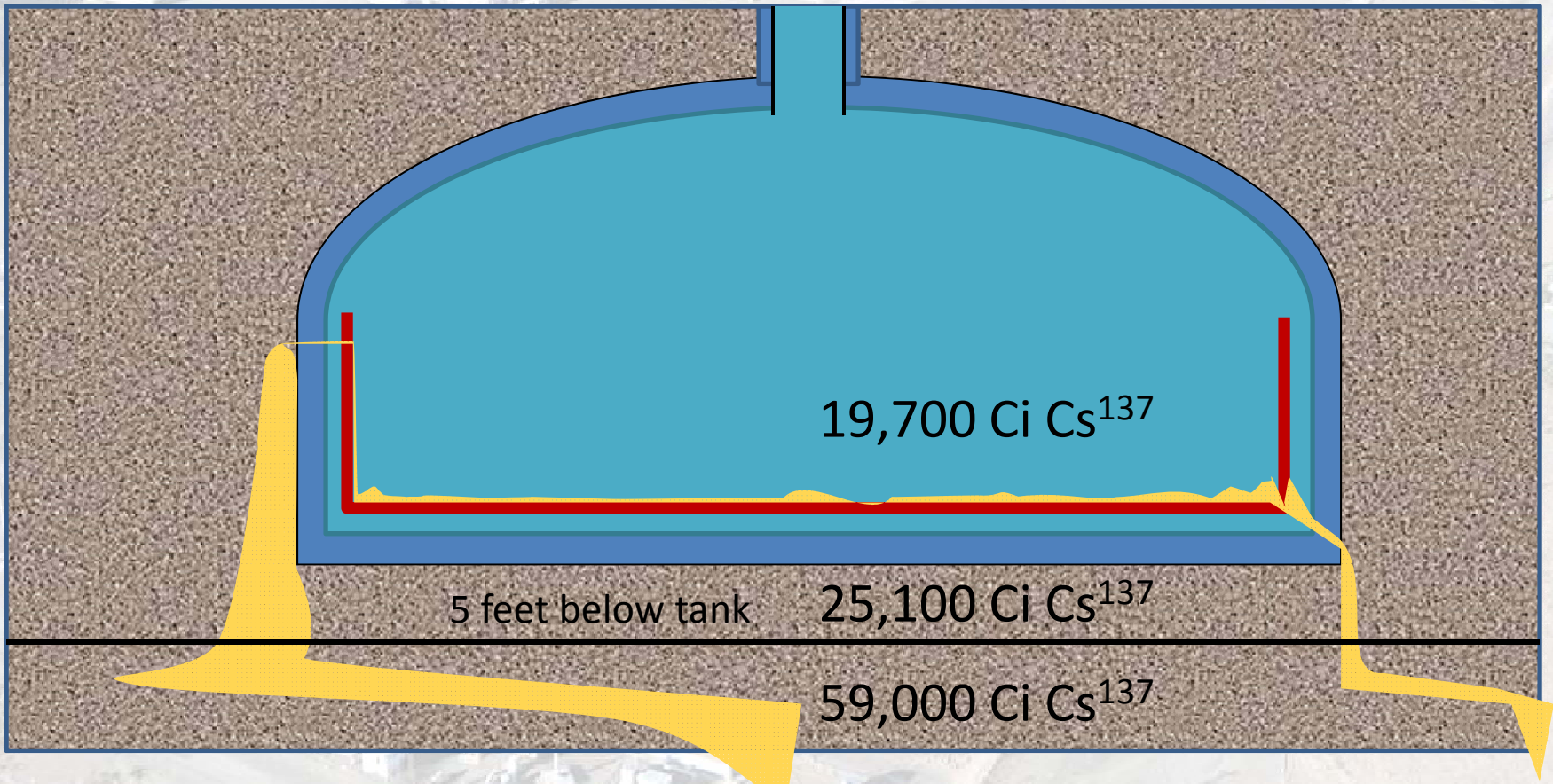
Page 3-3 of RPP-RPT-47167

Figure 6-1. Example Rubb® Structure (255-Foot Span by 270 Feet Long).

Source: Rubb Building Systems.

®Rubb is a registered trademark of Rubb, Inc.

Soil removal to 5 feet below tanks



CONCERNS

1. Does it make sense to spend $800 Million to move about 46,000 curies of cesium-137 three miles to ERDF while leaving 59,000 curies of cesium-137 in the ground, especially when the lower vadose zone close to groundwater is considered more vulnerable than the curies on the waste residuals inside the retrieved tanks?
   - What has been gained? The TW&WM EIS and the Performance Assessment are expected to show little improvement in overall risk reduction to the public over 10,000 years
   - If the expenditure of $800,000,000 does not significantly change the long term performance assessment of the 200 areas, what is the merit of proceeding with removing tanks but leaving the majority of cesium curies in the soil?
   - Should the excavation focus on going deeper to capture the 59,000 curies?

CONCERNS (continued)

2. The $800 million is a minimum. The actual cost will be higher. There are large unknowns in equipment condition, disassembly problems and dose rates. These unknowns have the potential to increase cost by a factor of 2 to 5 times. Bring up historical precedents.
   - If a piece of liner slips and falls into the tank, the time and effort to figure out how to use remote techniques to recover will escalate cost and schedule. No disassembly project this big has proceeded without unanticipated events.
3. Certain waste may not meet criteria for Hanford disposal.
   - Treatment facilities to wash contaminated steel or soil are not costed in this study.

CONCERNS (continued)

4. C-Tank Farm is too large for a single structure to be built over the top; therefore, containment will have to be provided one section at a time.
5. Shoring walls will be needed to contain loose sand and gravel from caving in the sides of the excavation this big.
6. This Study explains that tank removal expands the schedule for closure of C-Tank Farm from 4 to 5 years to a minimum of 13 years, and Landfill Closure requirement still apply.
7. The worker dose is based on the dose model for AX Tank Removal. Not all parties are comfortable that AX data is applicable to C-Farm. Not all parties are comfortable with the extremely high radiation doses that will be encountered when soil is removed from the tank domes. Even higher doses will be encountered with tearing apart the tanks and steel liner.

QUESTIONS FOR THE HAB

1. If there are no overall improvements in the long-term risk to the public, is the dose to workers and the cost to the public of removing the tanks justified?
2. Without a completed C-Farm Performance Assessment, how can the HAB make conclusions on comparative risk between cleanup options? Should we issue advice to make the PA completion a priority?

QUESTIONS FOR THE HAB

3. The tank removal option does not include the cost of long-term monitoring costs for thousands of years. Removal of contaminated soil to 5 feet beneath the tank footings does not remove the need for long-term monitoring at the site. The remaining dangerous chemicals and radioactive contamination must be monitored as long as they are harmful to human health. Should we request that the cost of long-term monitoring be added to the total cost?
4. If contamination in the deep vadose zone is more likely to enter the groundwater before contamination inside of tanks, should the HAB insist on a change of priorities, i.e. cleanup the deep vadose zone before tank closure?

QUESTIONS FOR THE HAB

5. Consider the estimate of 10 curies of Tc-99 inside the retrieved C-Farm tanks compared to 70 curies of Tc-99 in the soil under the tanks. The 70 curies are likely to move into the groundwater much earlier than the 10 curies. Should DOE spend its money on recovering the 70 curies ready to enter the groundwater before taking steps to remove the 10 curies inside the tanks?
   - Should the TWC consider this possible advice?
   - Compare 0.01 curies of I-129 in C-tanks with 10 curies in the soil.
   - Compare 100 kg of chrome in the tanks with 120 kg in the soil.
   - Compare 1000 kg total Uranium in the tanks with 100kg in the soil.

QUESTIONS FOR THE HAB

6. Should we continue retrieval of C-Farm tanks, but postpone tank-farm closure until the worst areas on the Hanford site have a deep vadose zone treatment method. In other words, look at the 200 areas as a whole and spend the limited cleanup dollars on the area where the highest level of contamination is entering the groundwater? Is this advice the TWC should pursue?
7. Or should we continue to use C-Farm as the test case for applying the EIS, developing a performance assessment, conducting soil investigations and writing closure plans. The closure process for C-Farm was envisioned as being a template for closure of other farms. Is this still the best use of limited resources?