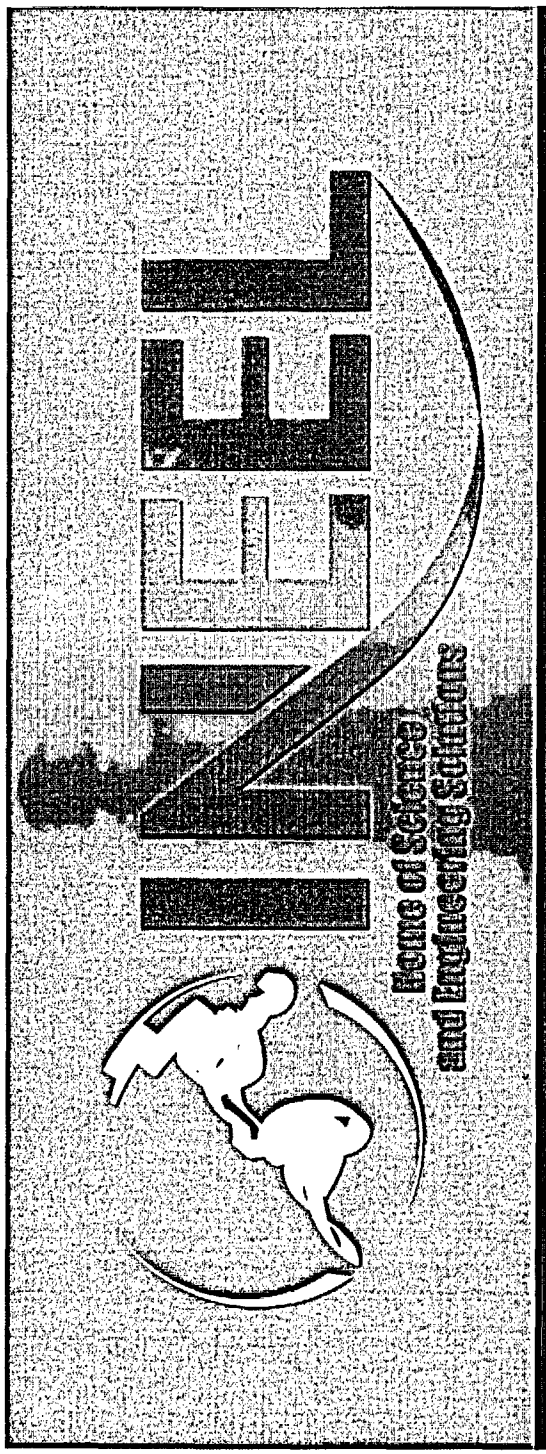


Idaho National Engineering and Environmental Laboratory

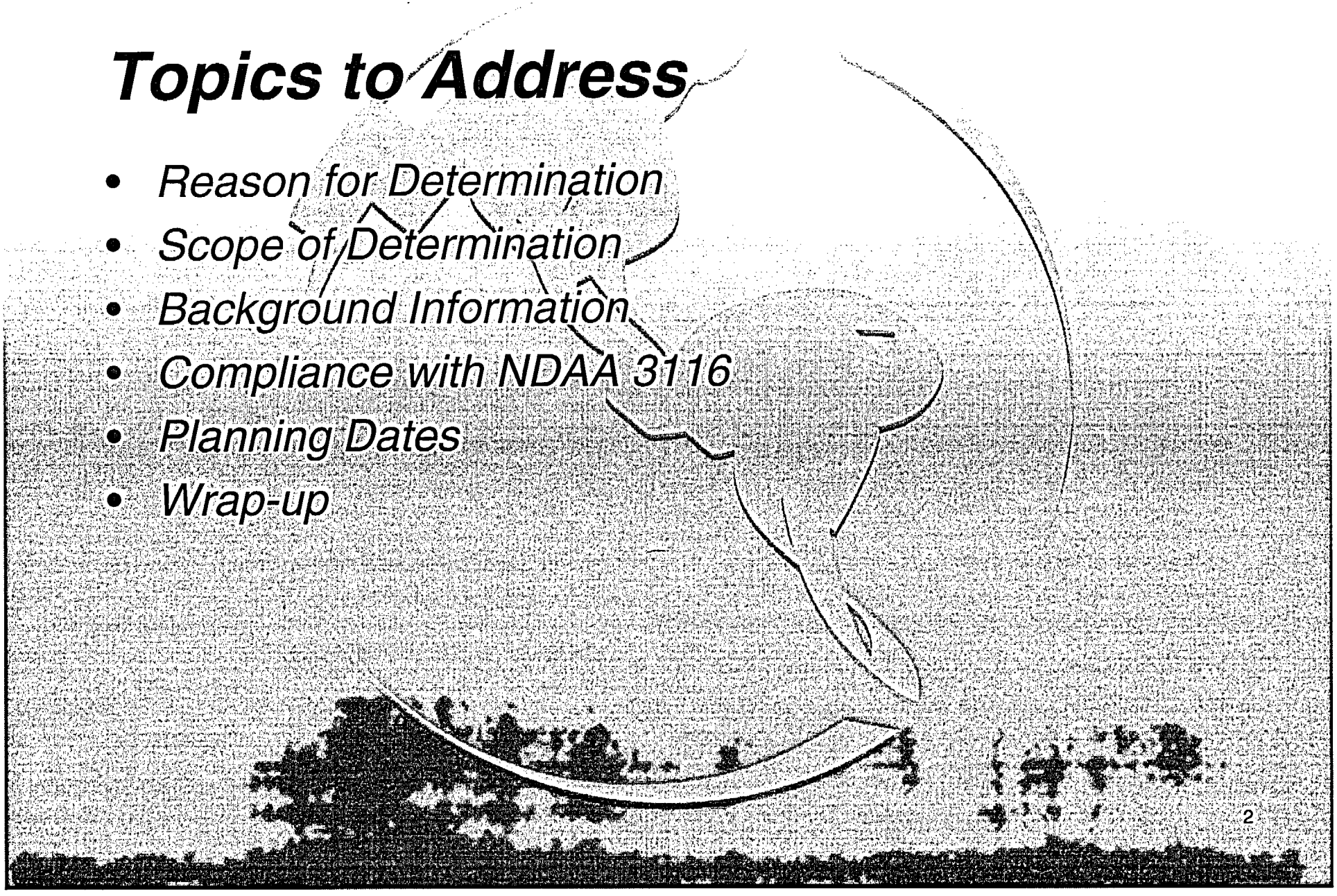
Idaho Tank Farm Facility Draft 3116 Determination

Discussion with the State of Idaho and the Nuclear Regulatory Commission

May 19, 2005

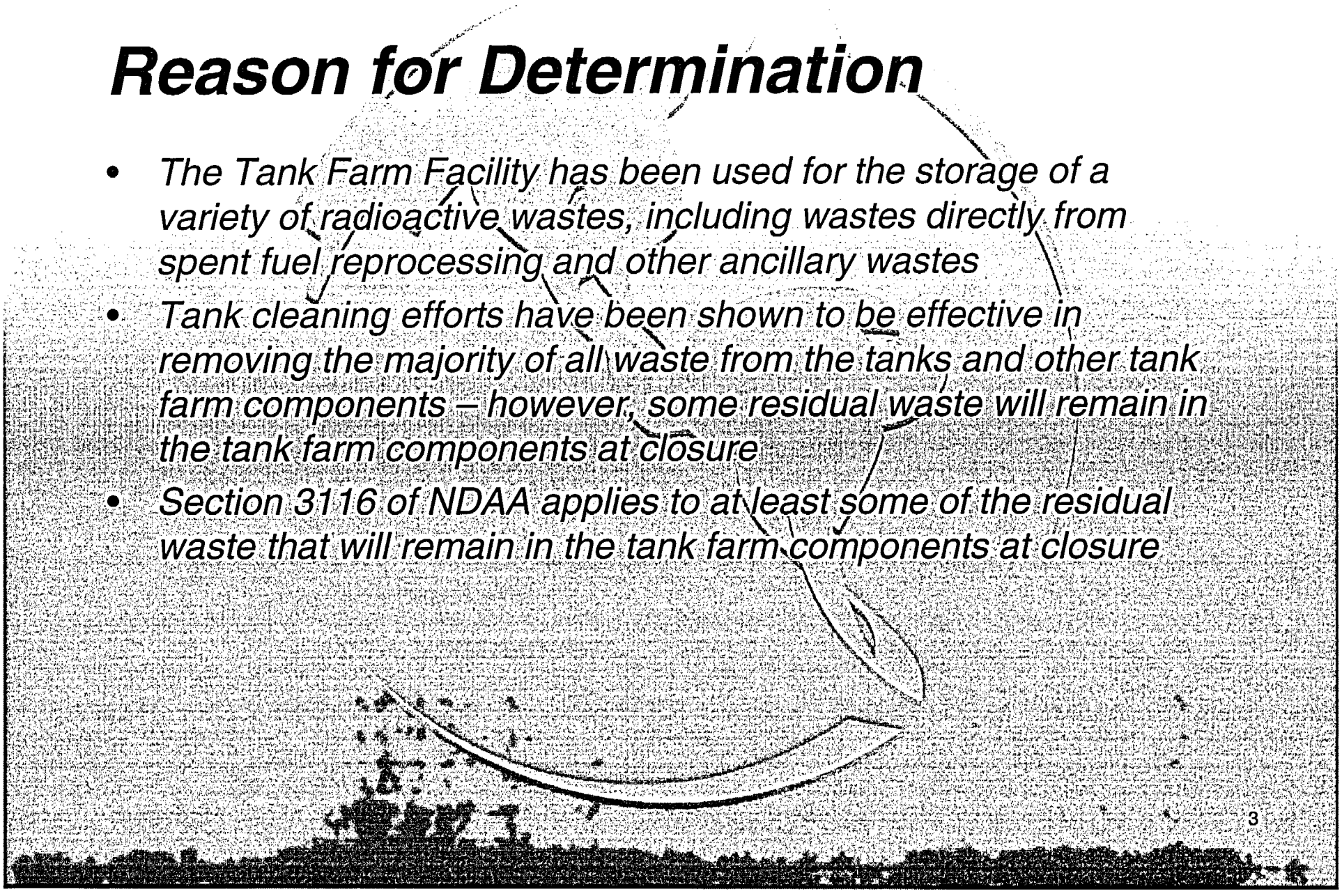
Topics to Address

- Reason for Determination
- Scope of Determination
- Background Information
- Compliance with NDAA 3116
- Planning Dates
- Wrap-up



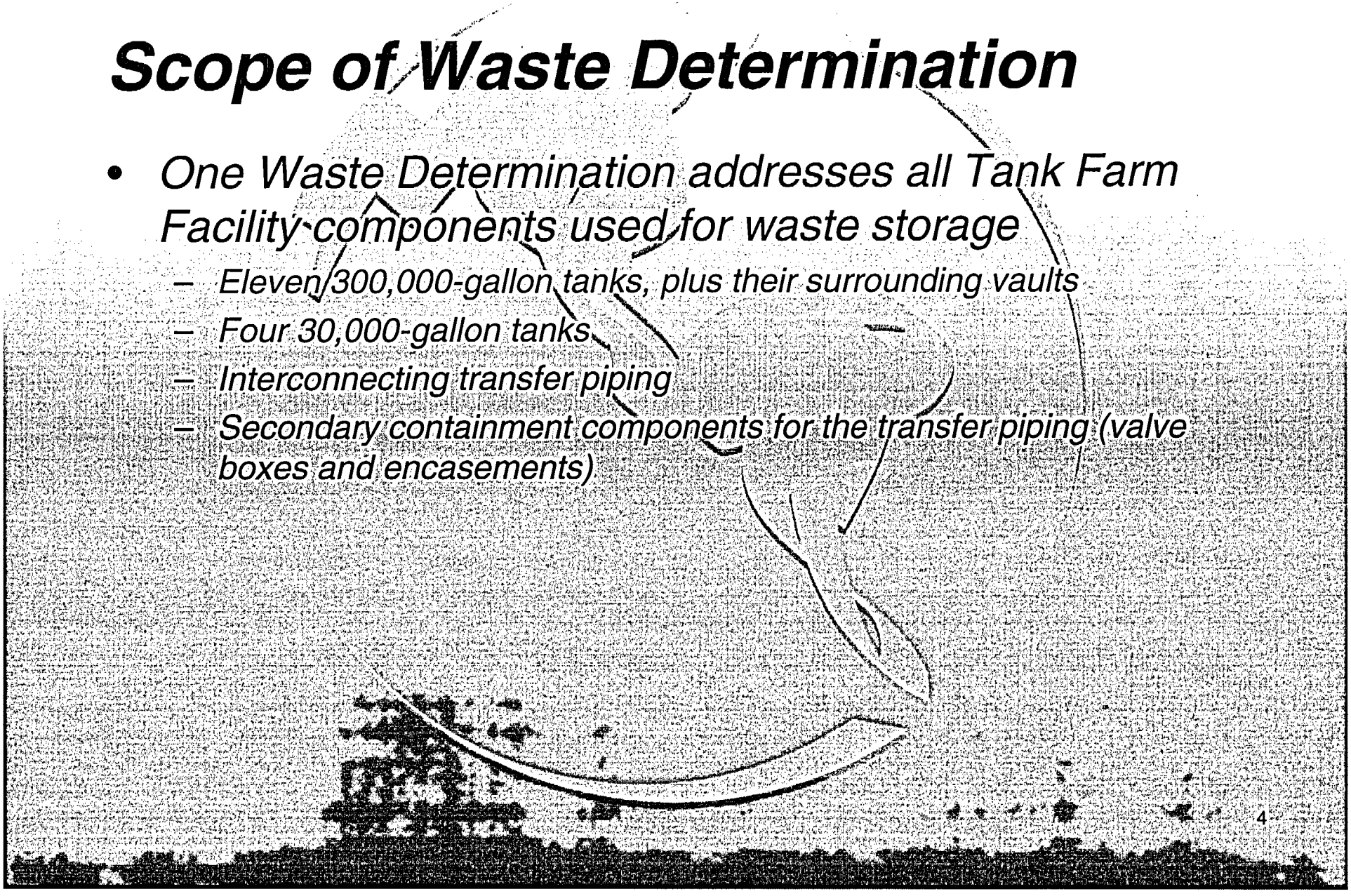
Reason for Determination

- *The Tank Farm Facility has been used for the storage of a variety of radioactive wastes, including wastes directly from spent fuel reprocessing and other ancillary wastes*
- *Tank cleaning efforts have been shown to be effective in removing the majority of all waste from the tanks and other tank farm components – however, some residual waste will remain in the tank farm components at closure*
- *Section 3116 of NDAA applies to at least some of the residual waste that will remain in the tank farm components at closure*



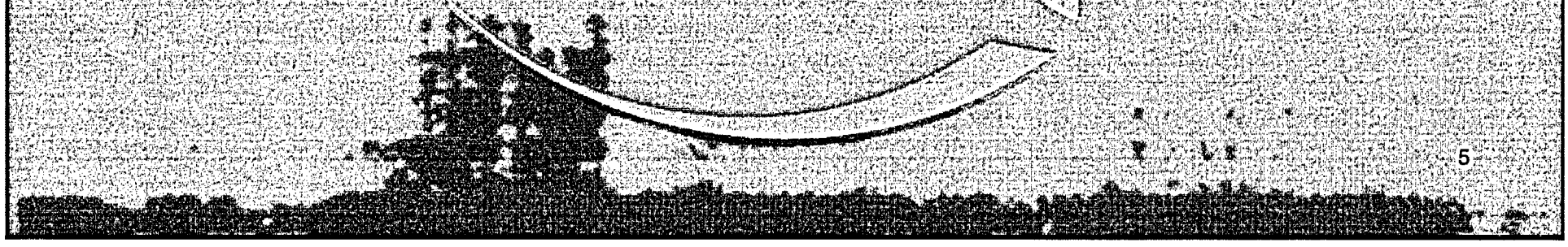
Scope of Waste Determination

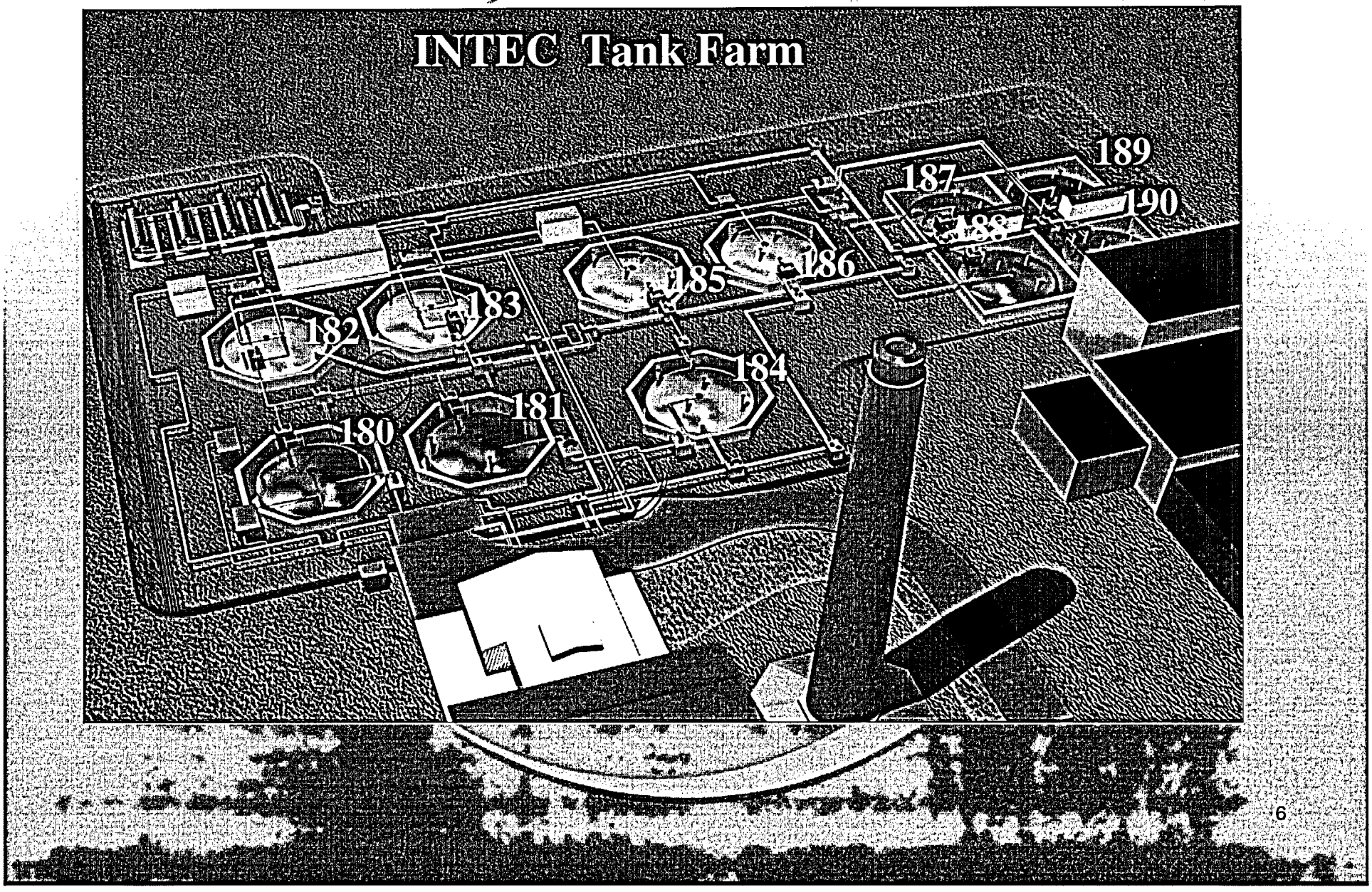
- *One Waste Determination addresses all Tank Farm Facility components used for waste storage*
  - *Eleven 300,000-gallon tanks, plus their surrounding vaults*
  - *Four 30,000-gallon tanks*
  - *Interconnecting transfer piping*
  - *Secondary containment components for the transfer piping (valve boxes and encasements)*



Background Information

- Tank Farm Facility
  - Eleven 300,000-gallon underground storage tanks
    - Stainless-steel construction
    - 50-feet in diameter, ~21-23 feet in height
    - Surrounded by concrete vaults
    - Eight tanks include interior cooling coils
  - Four 30,000-gallon underground storage tanks
    - Stainless-steel construction
    - Horizontal, cylindrical design
    - Located on concrete pads - no surrounding vaults




INTEC Tank Farm
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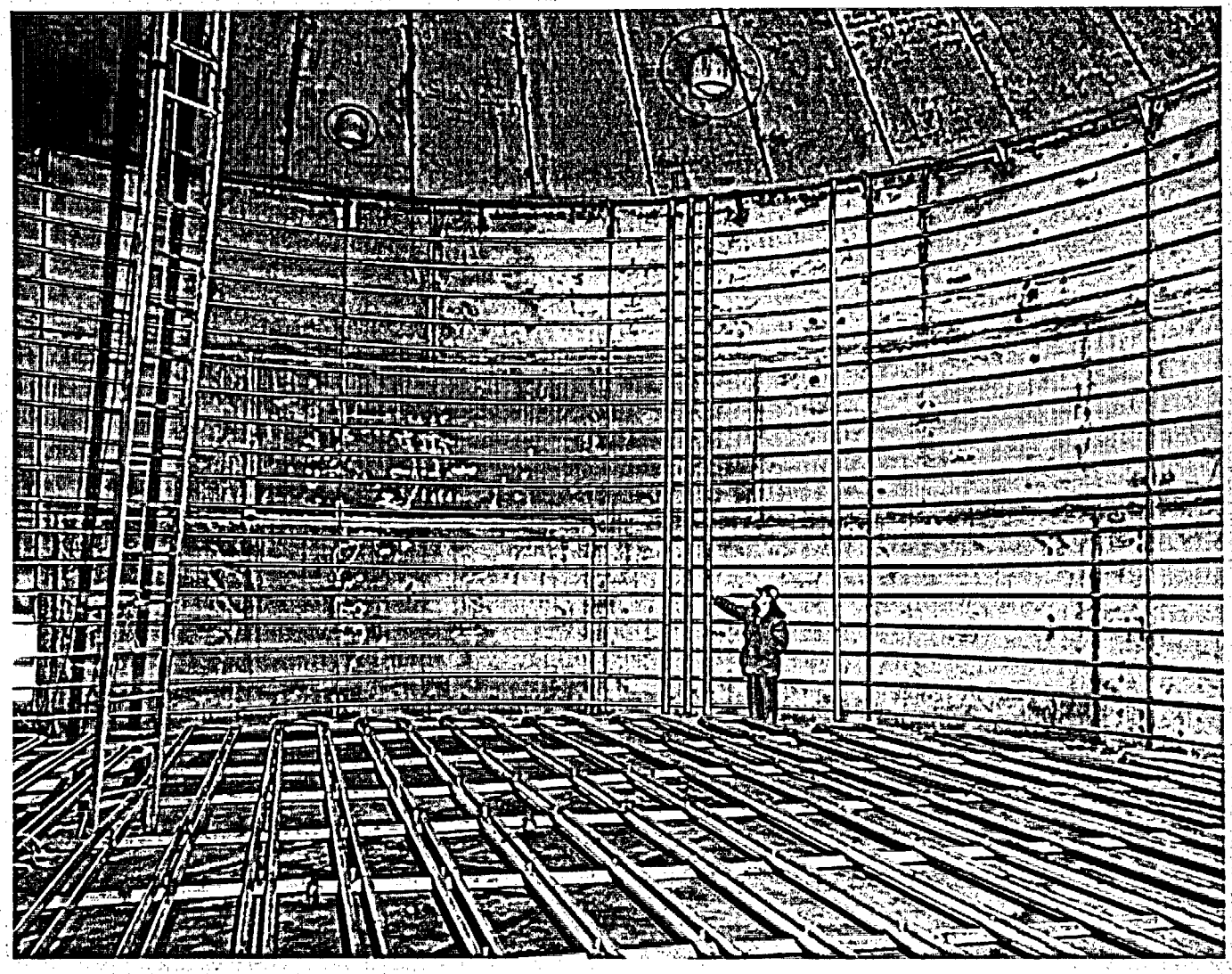
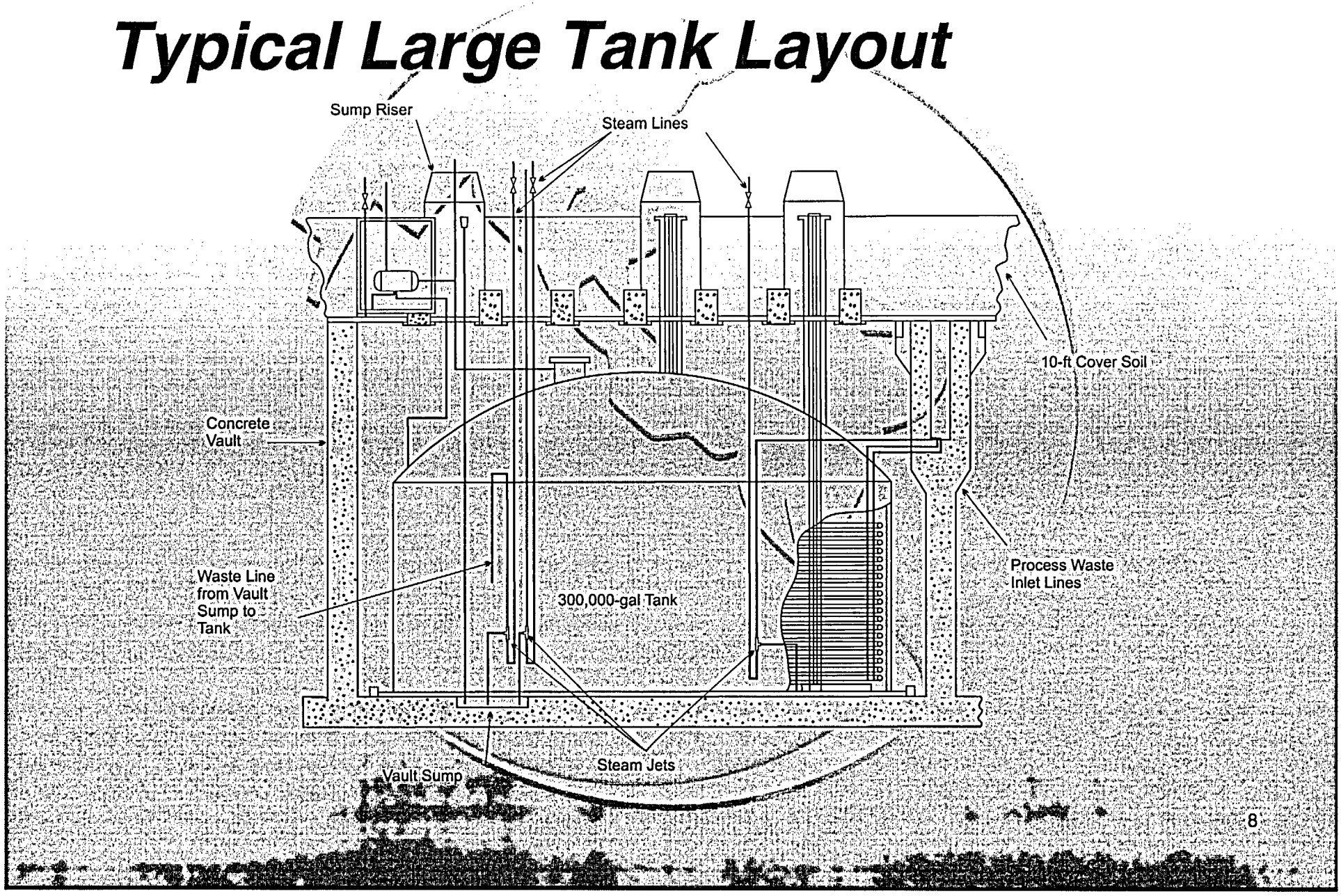
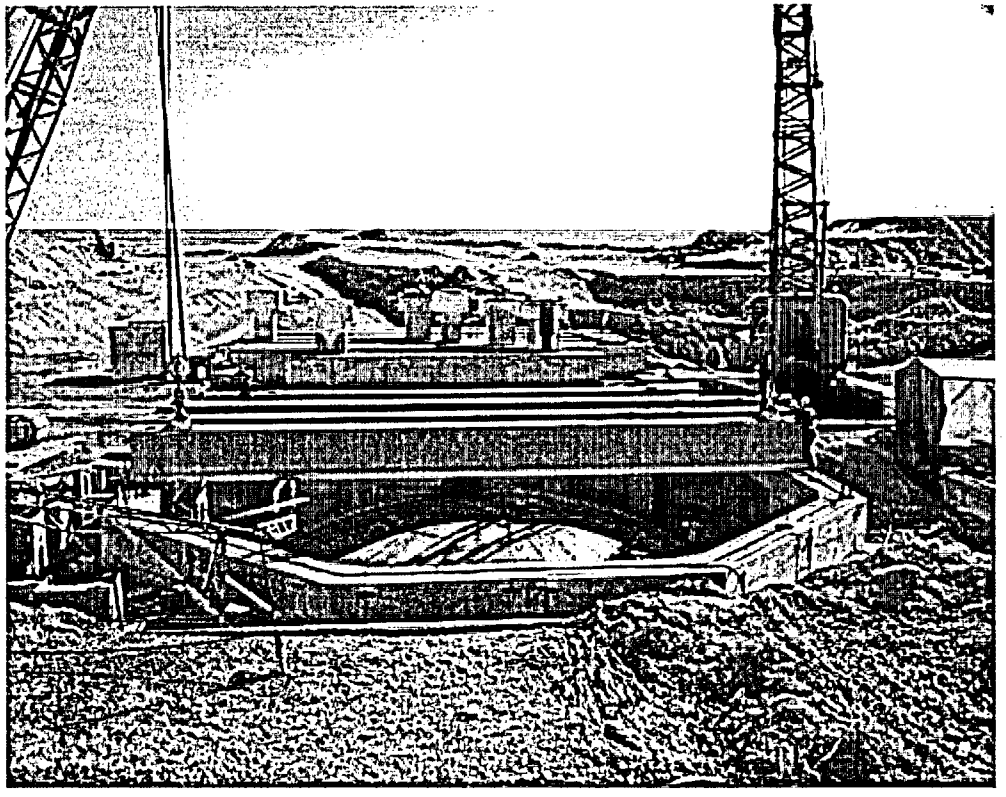
Interior of Tank Prior to Use



Typical Large Tank Layout





Vault and dome of Tank WM-185 showing the concrete beams and concrete risers on top

Background Information (continued)

- Origin and Management of Tank Wastes
  - Spent fuel reprocessing wastes sent to tank farm until 1992
  - Other ancillary facility wastes also sent to tank farm (i.e., decontamination solutions containing relatively high levels of sodium)
  - To minimize needed storage space, no neutralization of wastes - wastes kept acidic
  - Tank waste almost entirely liquid, with a small (up to a few inches in depth) layer of solid particles on the tank floor – no salt cake or hard sludge layers
  - Bulk of all waste has been removed from tanks and calcined
  - ~900,000 gallons of remaining waste, termed Sodium-Bearing Waste, stored in three of the 300,000-gallon tanks, with one tank maintained as a spare

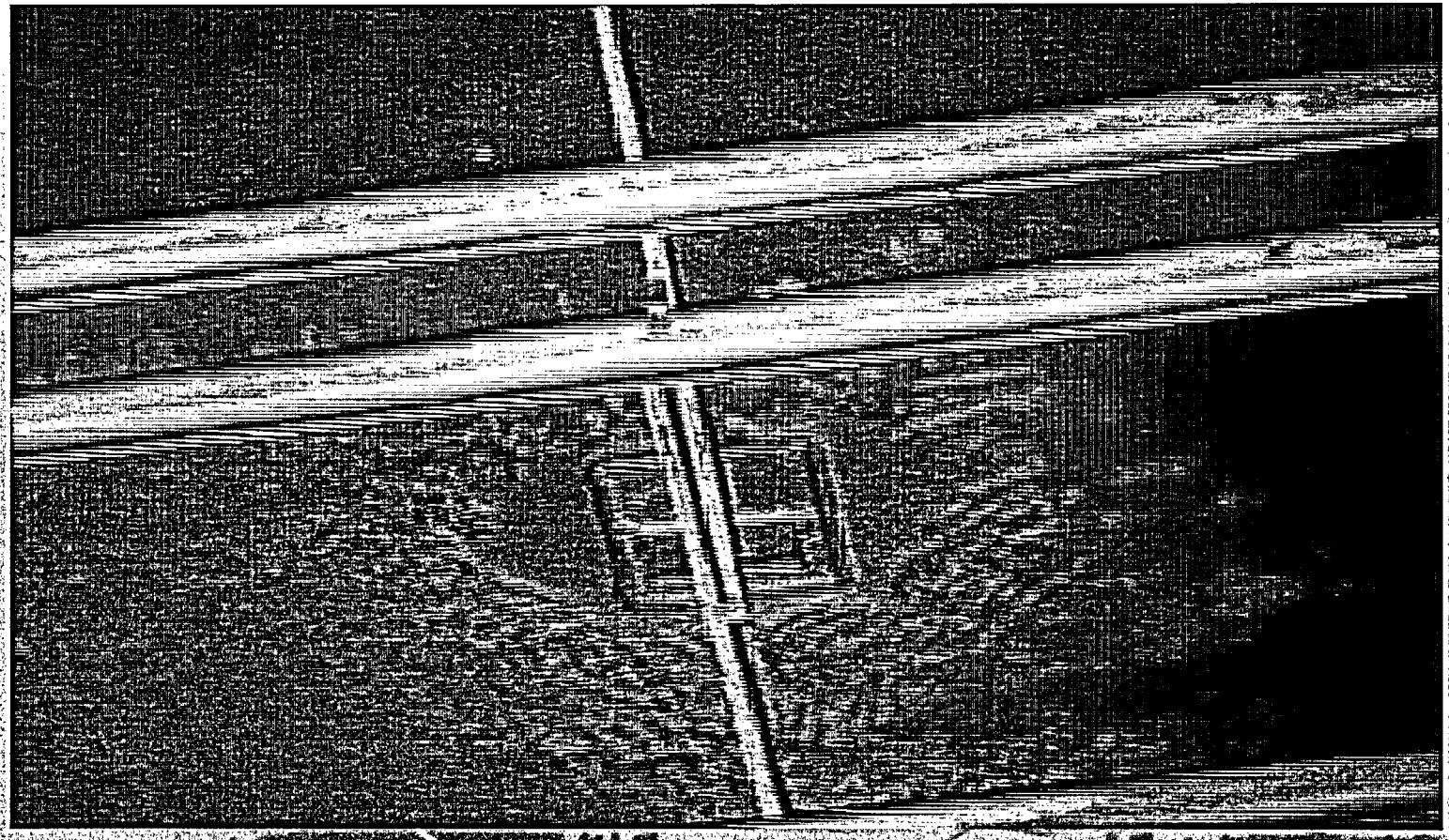
Background Information (continued)

- Tank Farm Closure Approach and Status
  - Planned closure process includes completion of bulk waste removal, tank cleaning, verification sampling and analysis of residuals, and in-place closure by filling cleaned tank components with grout
- Prior NRC Review
  - In 2002, prior to any tank cleaning, DOE prepared a draft waste determination under DOE Order 435.1 requirements and submitted it to the NRC for review
  - For conservatism, the evaluation assumed only limited tank cleaning success
  - NRC reviewed (1) the evaluation of removal of radionuclides to the maximum extent practical and (2) the performance assessment for comparison to performance objectives
  - NRC concluded that the draft waste determination had "sound technical assumptions, analysis, and conclusions with regard to protecting public health and safety, and the environment" (SECY-03-0079, 2003).

Background Information (continued)

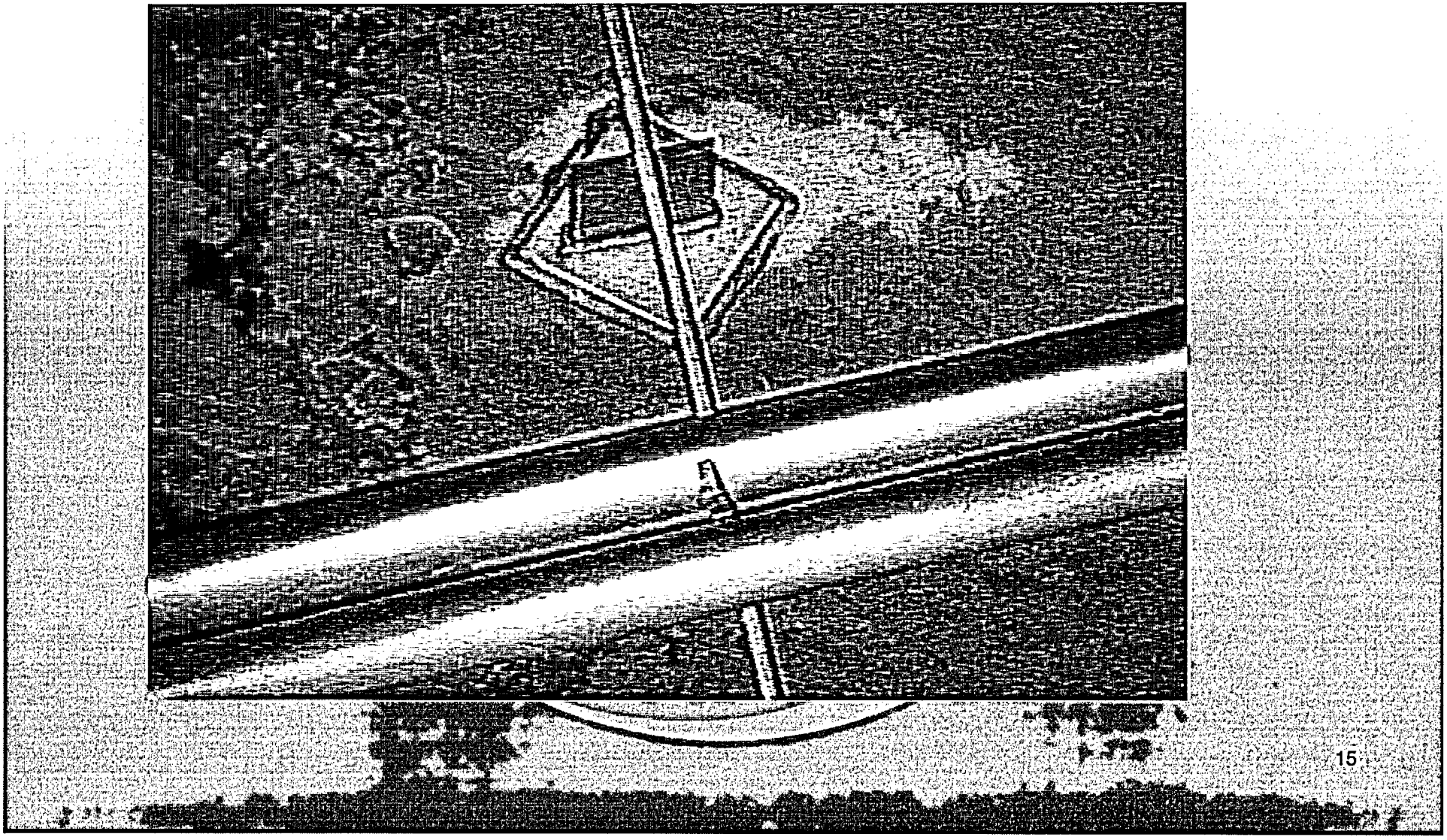
- Tank Cleaning System
  - Water spray system developed to clean internals of tanks
  - Steam jet lowered to tank bottom
  - Liquid waste and slurried tank solids transferred to an operating tank
  - Tank cleaning completed on seven 300,000-gallon tanks and four 30,000-gallon tanks
  - Water flushes of associated vaults, transfer piping, and secondary containments
- Cleaning Results to Date
  - Video inspection shows no buildup of material on vertical surfaces, large areas of tank floors bare, with residual solids on some areas on the tank floors less than 3/8-inch deep
  - Estimates of residual curies remaining in large tanks on the order of 1500 - 2,500 curies per tank (almost entirely cesium-137/barium-137m)

WM-182 Tank Bottom After Washing



WM-183 Tank Bottom After Washing

WM-185 Tank Bottom After Washing



WM-186 Tank Bottom After Washing

Compliance with NDAA 3116

- Draft 3116 Determination being developed
- Includes discussion of efforts to ensure the tank farm facility "has had highly radioactive radionuclides removed to the maximum extent practical"
- Includes discussion comparing average concentrations of any remaining residual waste to the concentration limits for Class C low-level waste
- Includes discussion of how the closed tank farm facility will comply with the performance objectives set out in subpart C of 10 CFR 61, using the Performance Assessment previously reviewed by the NRC,

Planning Dates

- By May 31, 2005, complete development of draft 3116 Determination
- Early June 2005: Internal DOE review of draft 3116 Determination
- Late June 2005: Submit draft 3116 Determination to NRC for review and make available for public review
- Requests for Additional Information from NRC – (Need to discuss planning dates)
- September 2005: Review public comments
- March 2006: NRC completes review and prepares Technical Evaluation Report
- April 2006: Secretary makes determination

- Other Related Activities in Parallel:
  - Update and obtain approval of Tier 1 Closure Plan under DOE Order requirements
  - Issue EIS Record of Decision

Wrap-up