Savannah River Remediation

We do the right thing.

F-Tank Farm NDAA Section 3116 Draft Basis Document Scoping Meeting

General Information
(FTF-WDIP-001)

Steven Thomas
(803) 557-8960 Office
(803) 646-8940 Cell
steven.thomas@srs.gov

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Presentation Overview

- Purpose and Scope of Draft F-Tank Farm (FTF) 3116 Basis Document
- NDAA 3116(a) Criterion and input packages to be discussed
- General description of Savannah River Site (SRS) and FTF
- General description of FTF Tanks and Ancillary Structures
- General Status of FTF

Purpose / Scope

To demonstrate that the stabilized residuals in the FTF waste tanks and ancillary structures, the waste tanks, and the ancillary structures (including integral equipment) in FTF at the time of closure meet the NDAA Section 3116(a) criteria and, therefore, are not high-level waste.

Purpose / Scope

Residuals - *Residual waste remaining in a waste tank or ancillary structure following successful completion of waste removal activities and removal of highly radioactive radionuclides to the maximum extent practical.*

Stabilization - *Stabilization will be carried out by filling the tanks with grout at the completion of waste removal activities. Ancillary structures will be filled with an appropriate fill material, as necessary, to prevent subsidence.*

NDAA 3116(a)

The NDAA Section 3116(a) provides in pertinent part:

[T]he term "high-level radioactive waste" does not include radioactive waste resulting from the reprocessing of spent nuclear fuel that the Secretary of Energy…, in consultation with the Nuclear Regulatory Commission…, determines –

(1) does not require permanent isolation in a deep geologic repository for spent fuel or high-level radioactive waste.

(2) has had highly radioactive radionuclides removed to the maximum extent practical.

FTF-WDIP-002
FTF-WDIP-003

NDAA 3116(a)

(3)(A) does not exceed concentration limits for Class C low-level waste as set out in section 61.55 of title 10, Code of Federal Regulations, and will be disposed of—

FTF-WDIP-004

(i) in compliance with the performance objectives set out in subpart C of part 61 of title 10, Code of Federal Regulations; and

FTF-WDIP-005
FTF-WDIP-006
FTF-WDIP-007

(ii) pursuant to a State-approved closure plan or State-issued permit, authority for the approval or issuance of which is conferred on the State outside of this section; or

NDAA 3116(a)

(3)(B) exceeds concentration limits for Class C low-level waste as set out in section 61.55 of title 10, Code of Federal Regulations, but will be disposed of—

FTF-WDIP-004

(i) in compliance with the performance objectives set out in subpart C of part 61 of title 10, Code of Federal Regulations;

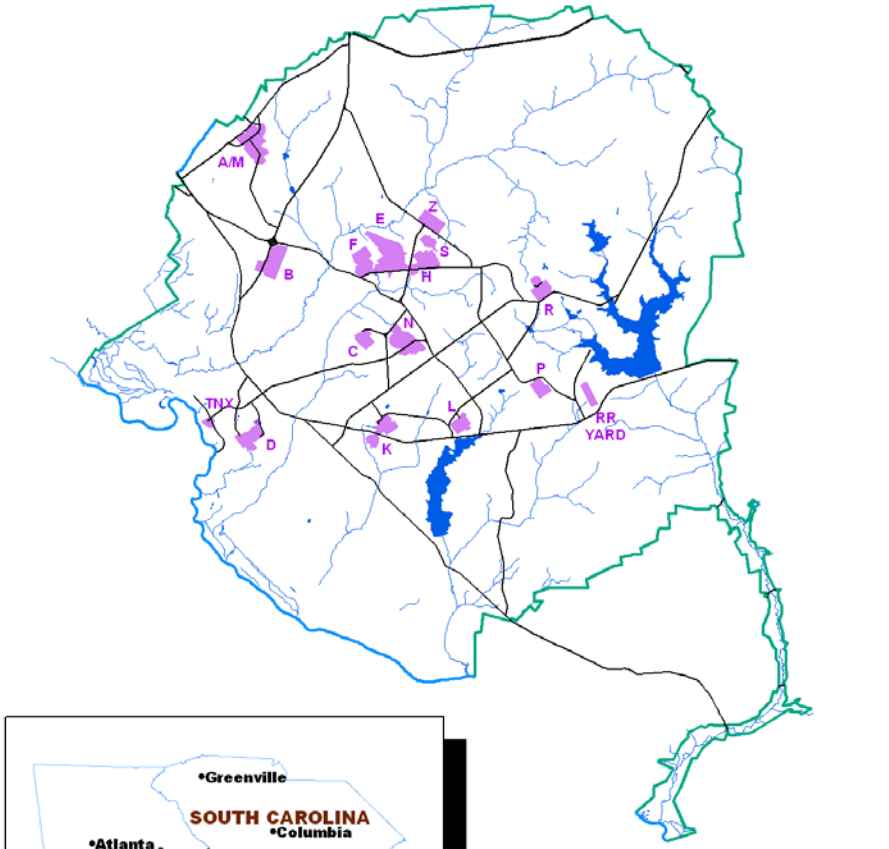
FTF-WDIP-005
FTF-WDIP-006
FTF-WDIP-007

(ii) pursuant to a State-approved closure plan or State-issued permit, authority for the approval or issuance of which is conferred on the State outside of this section; and

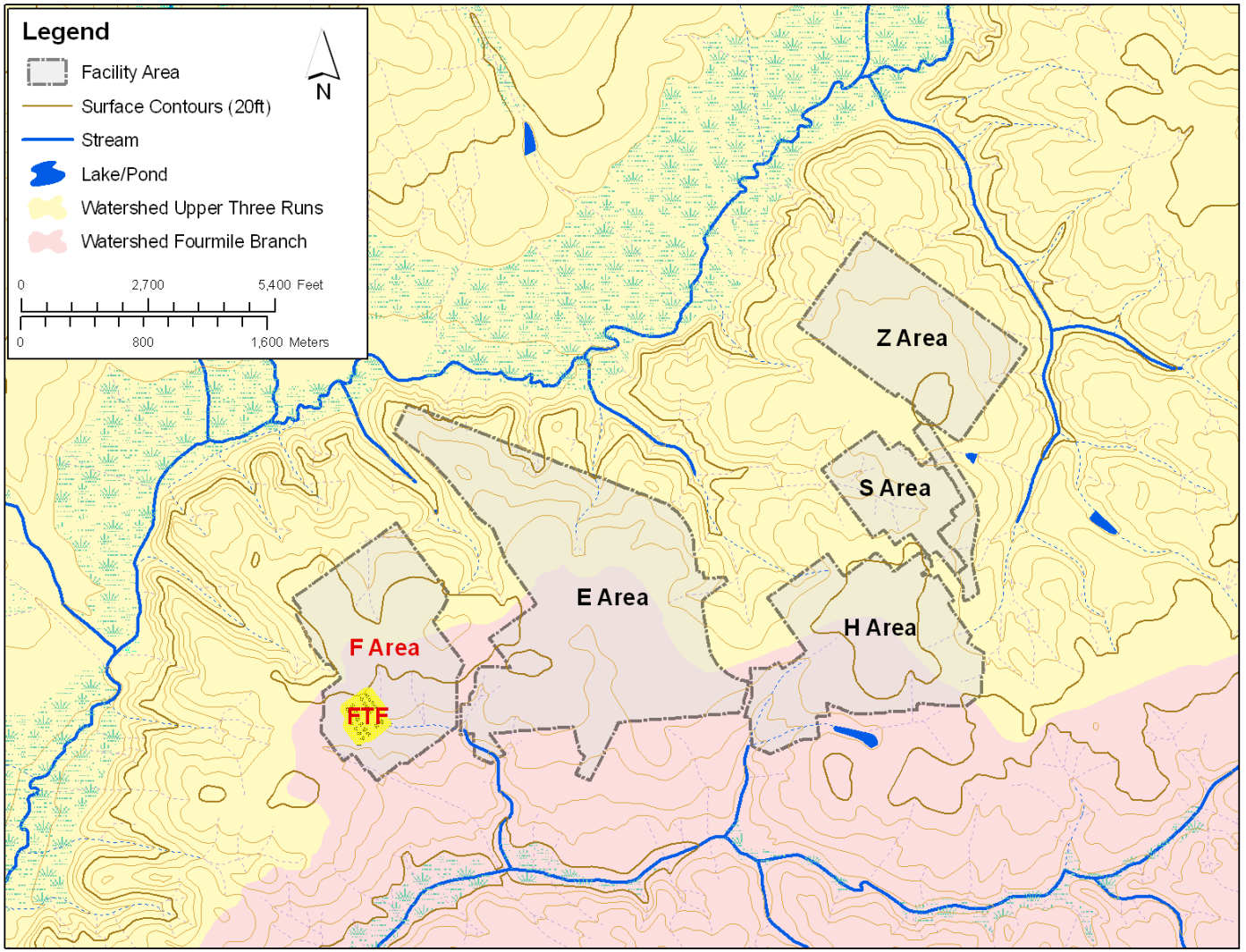
(iii) pursuant to plans developed by the secretary in consultation with the Commission.

FTF-WDIP-004

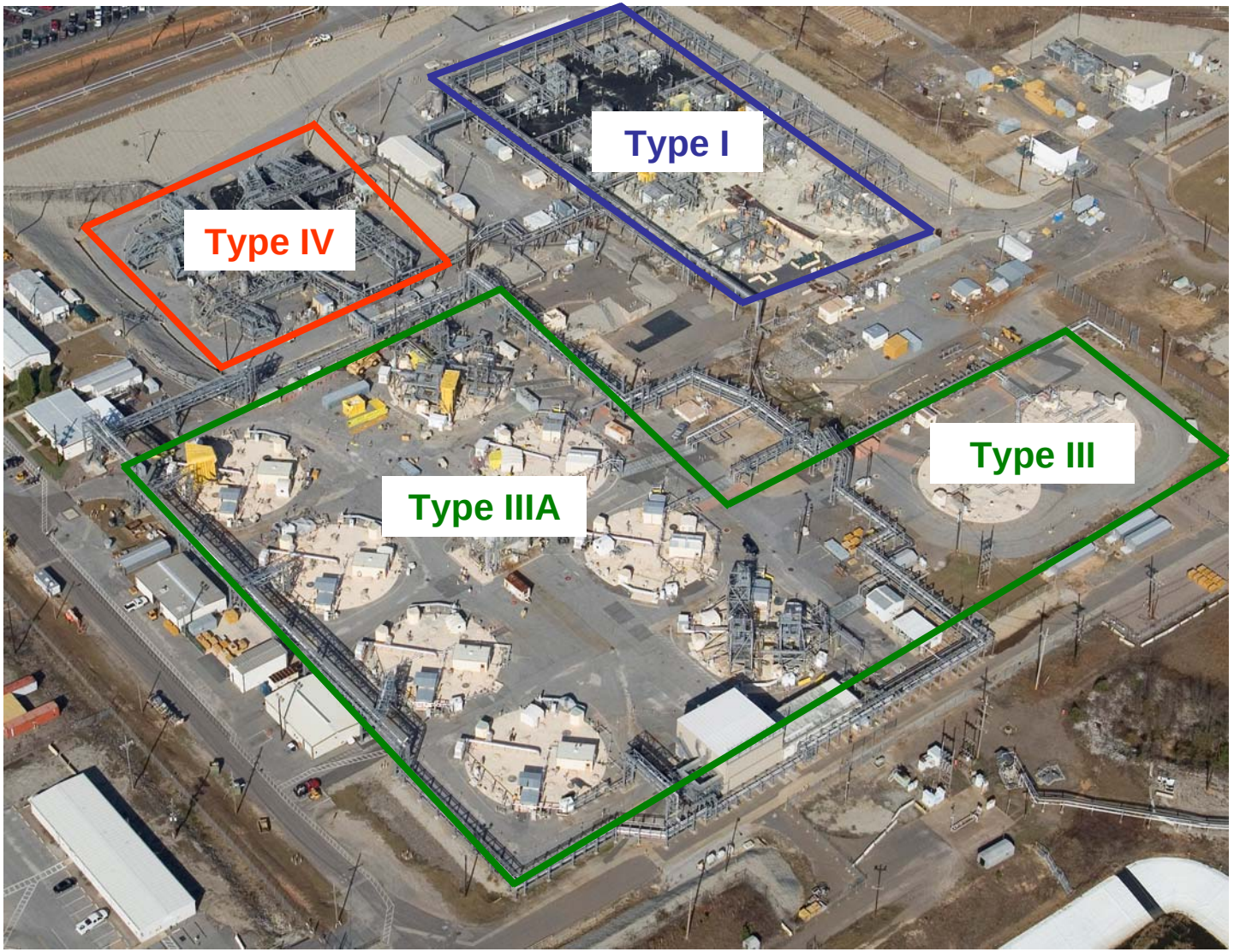
Savannah River Site



General Separations Area

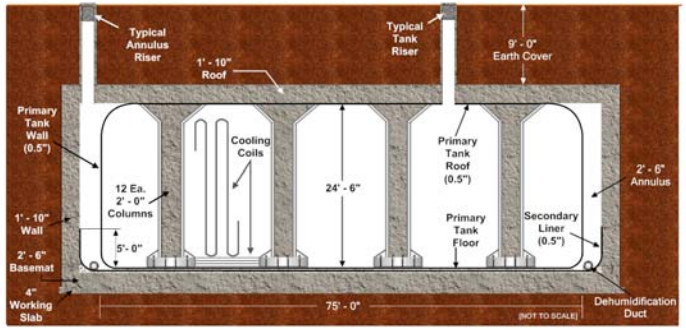


F-Tank Farm

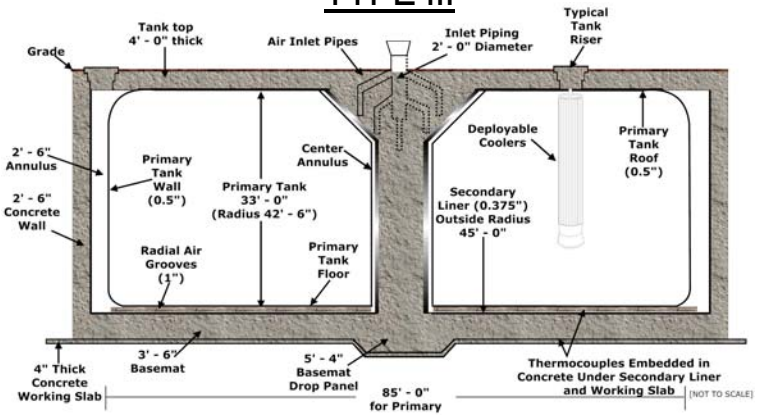


FTF Tank Types

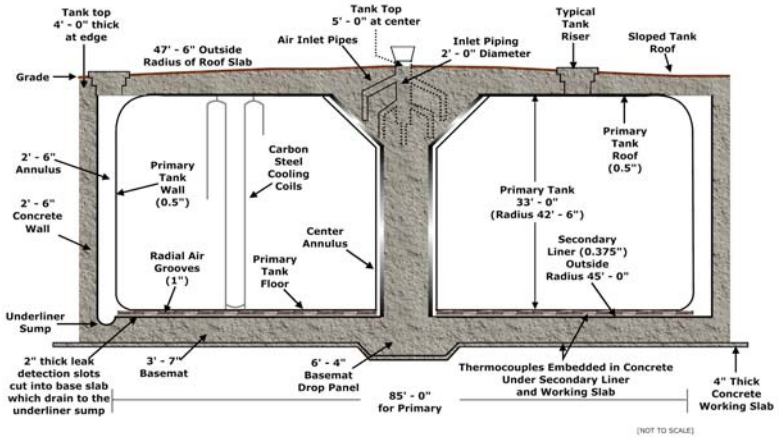
TYPE I



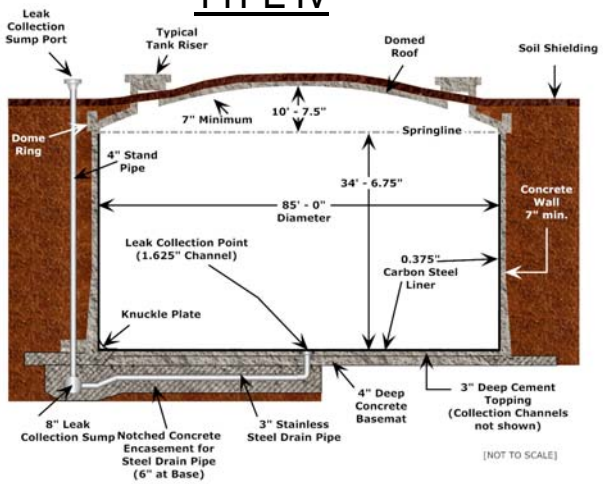
TYPE III



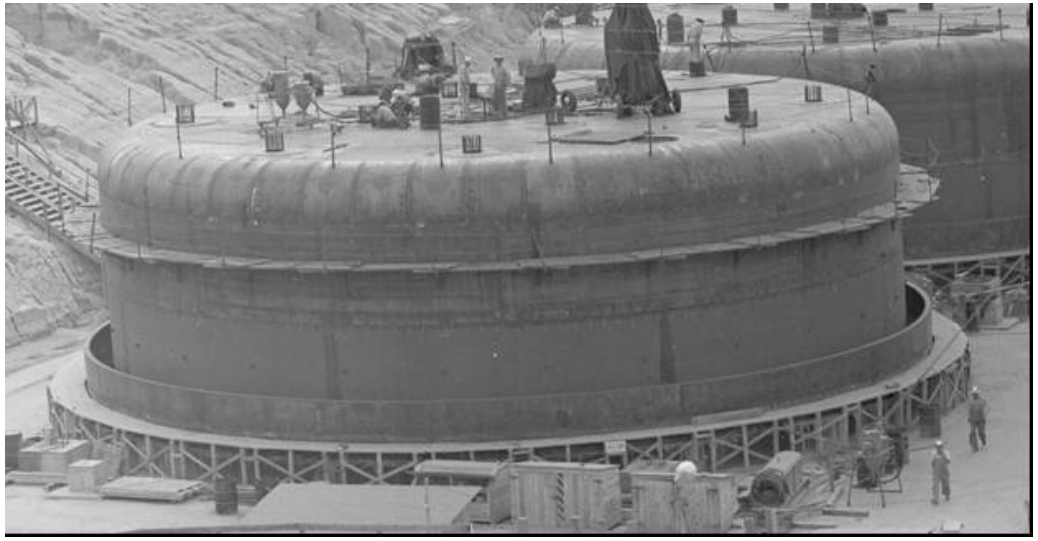
TYPE IIIA

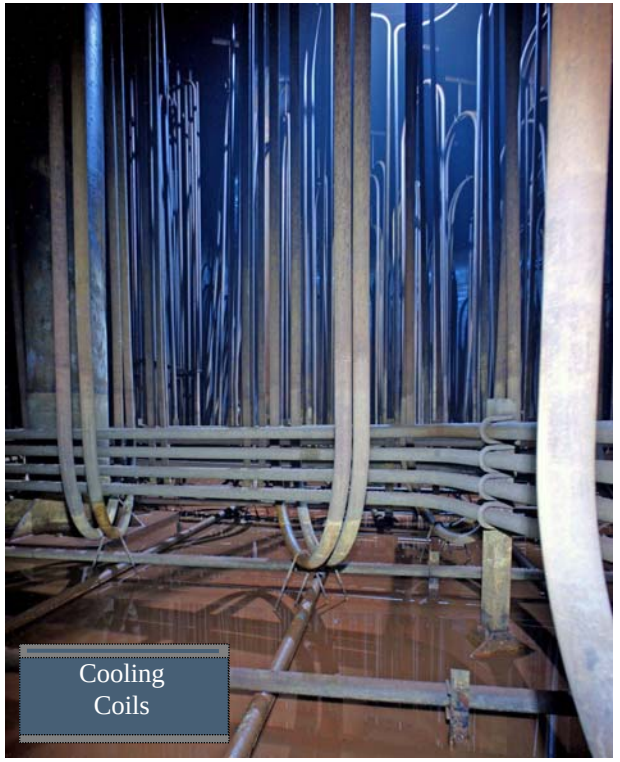


TYPE IV



Type I Tank

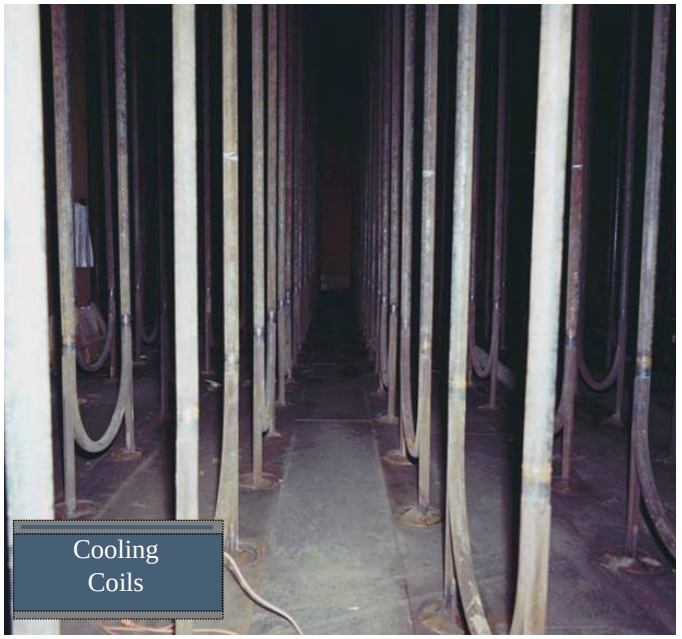




FTF Contains Eight Type I Tanks

Type III/IIIA Tank

FTF Contains Ten Type I Tanks



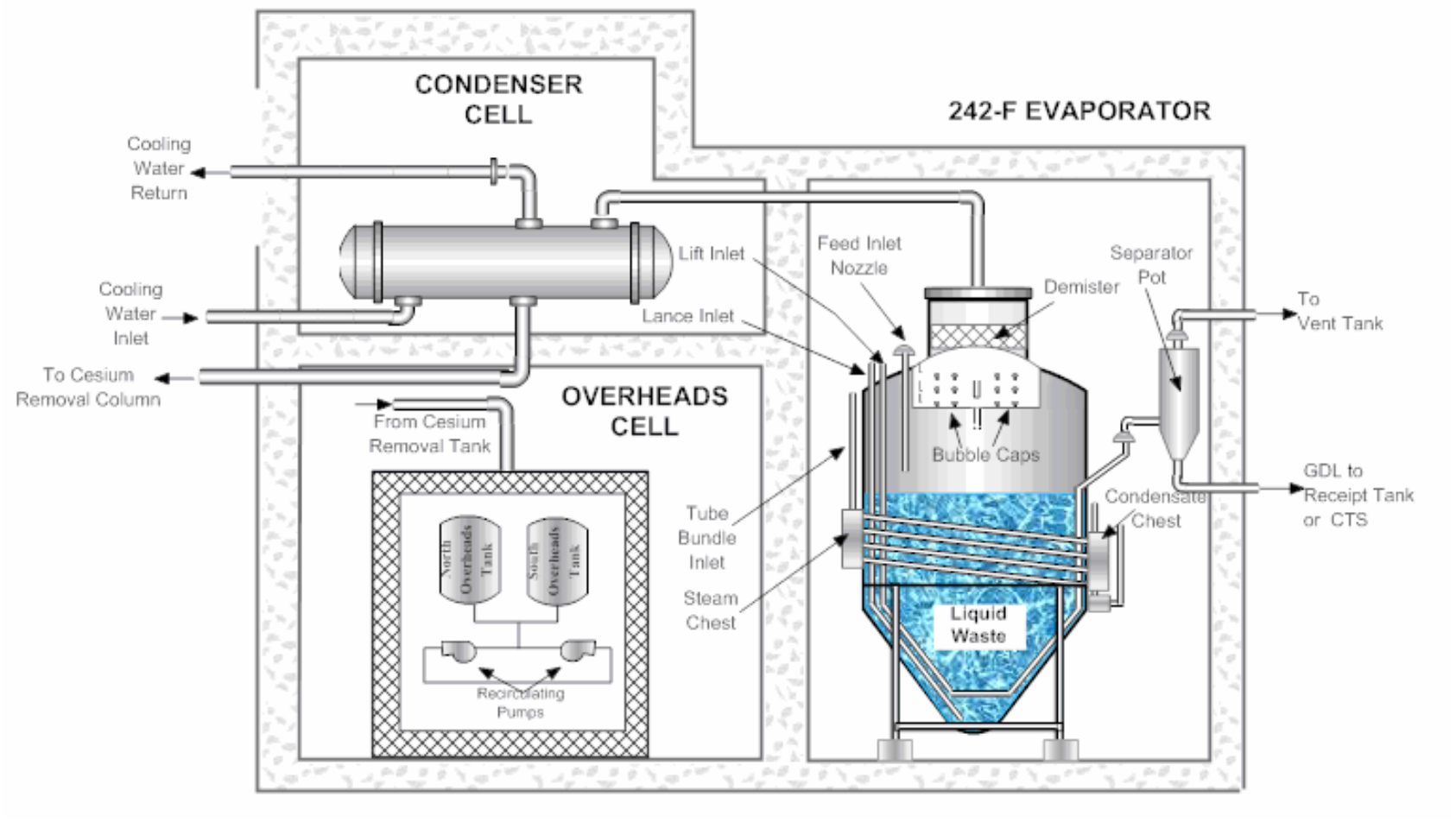
Type IV Tank

FTF Contains Four Type I Tanks

FTF Ancillary Structures

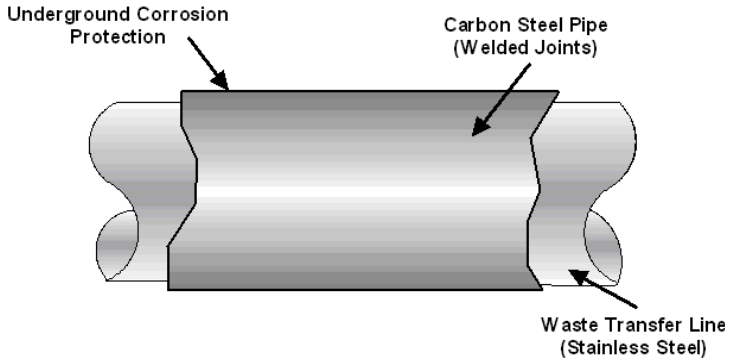
- Two - Evaporator Systems
- Transfer Line System
  - Transfer Lines
  - Leak Detection Boxes
  - Modified Leak Detection Boxes
- Six - Diversion Boxes
- Three - Pump Pits
- Three - Pump Tanks
- Eight - Valve Boxes
- One - Catch Tank
- One - Concentrate Transfer System Tank

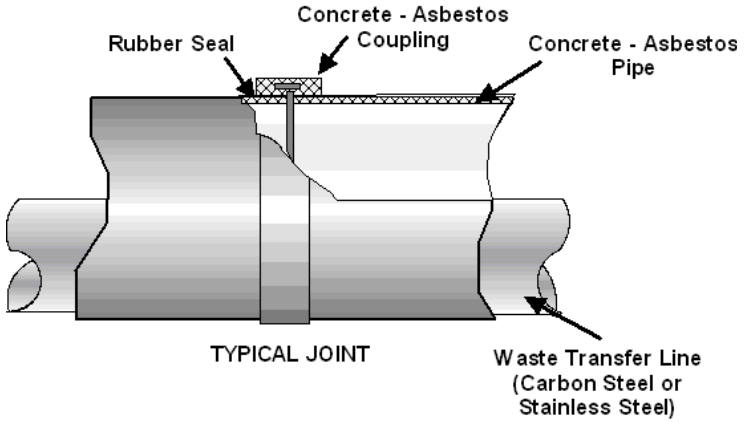
Evaporator

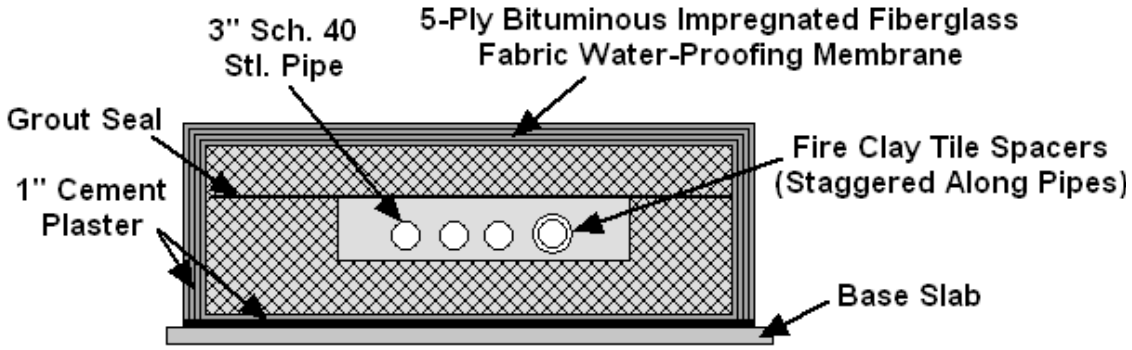

CONDENSER CELL
242-F EVAPORATOR
Cooling Water Return
Cooling Water Inlet
To Cesium Removal Column
From Cesium Removal Tank
OVERHEADS CELL
Lift Inlet
Lance Inlet
Feed Inlet Nozzle
Demister
Separator Pot
To Vent Tank
Bubble Caps
Tube Bundle Inlet
Steam Chest
Condensate Chest
GDL to Receipt Tank or CTS
North Overheads Tank
South Overheads Tank
Recirculating Pumps
Liquid Waste

2F Evaporator

Transfer Lines

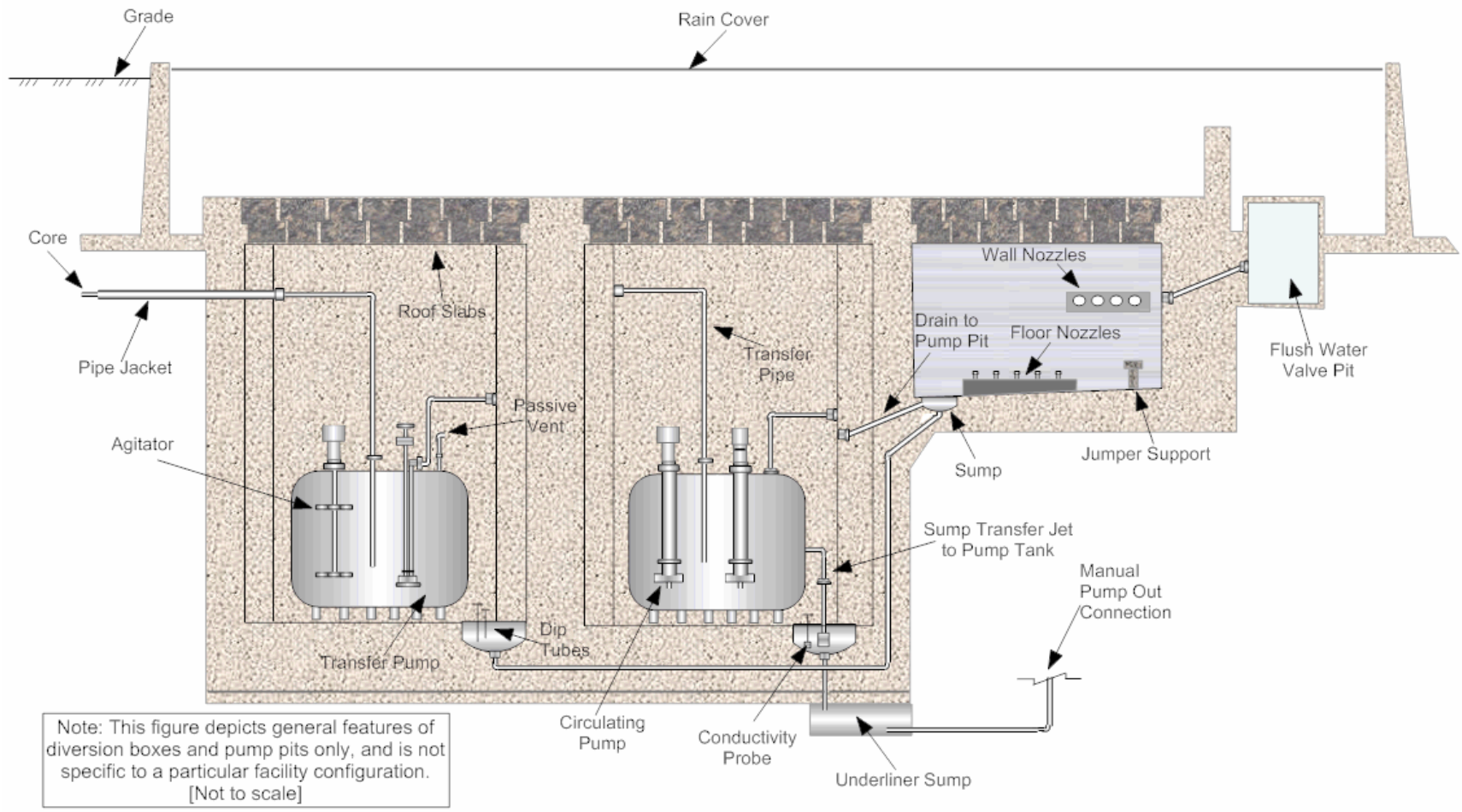






Transfer Lines

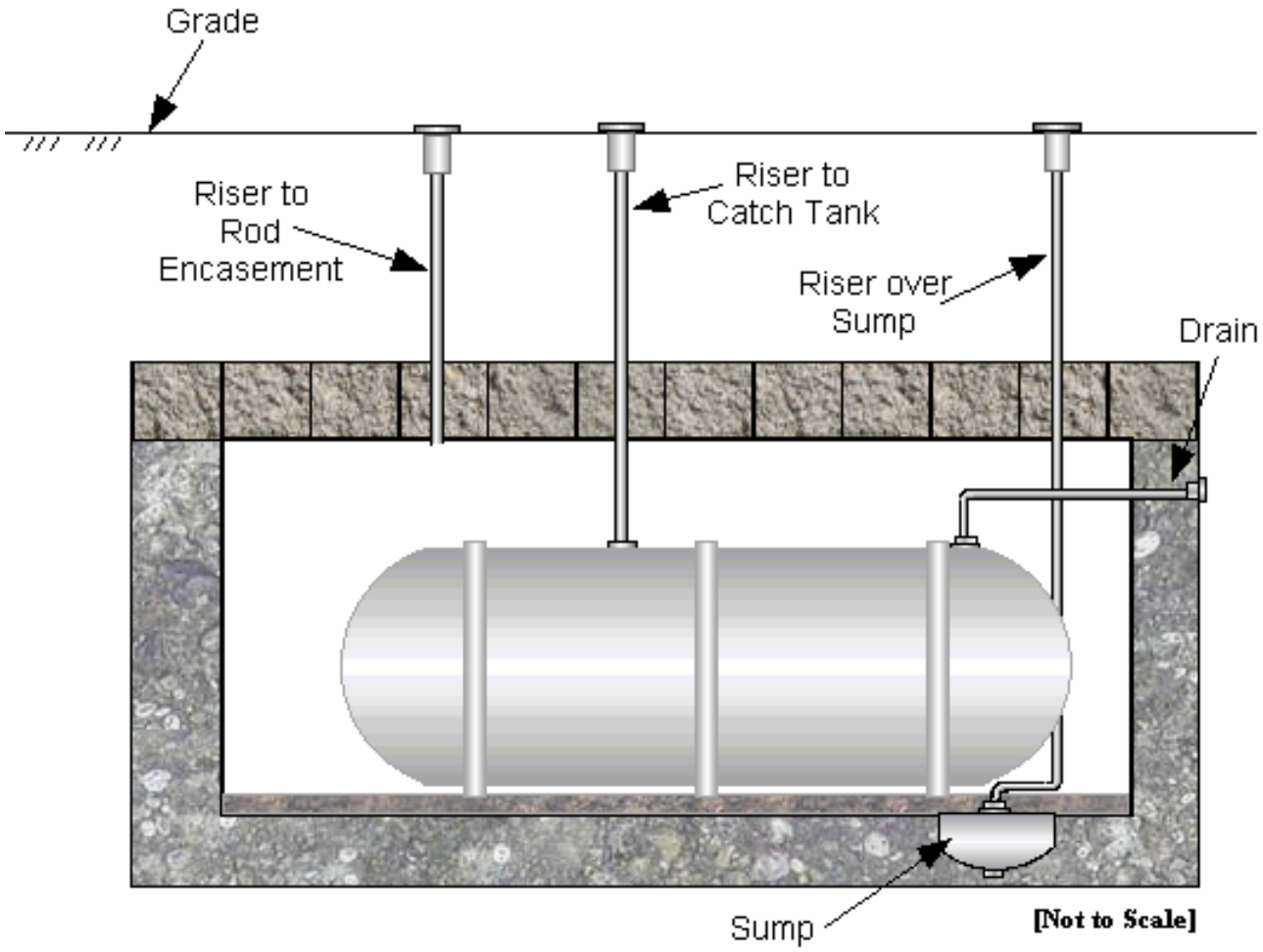
Pump Pit & Diversion Box



Pump Pit & Pump Tank

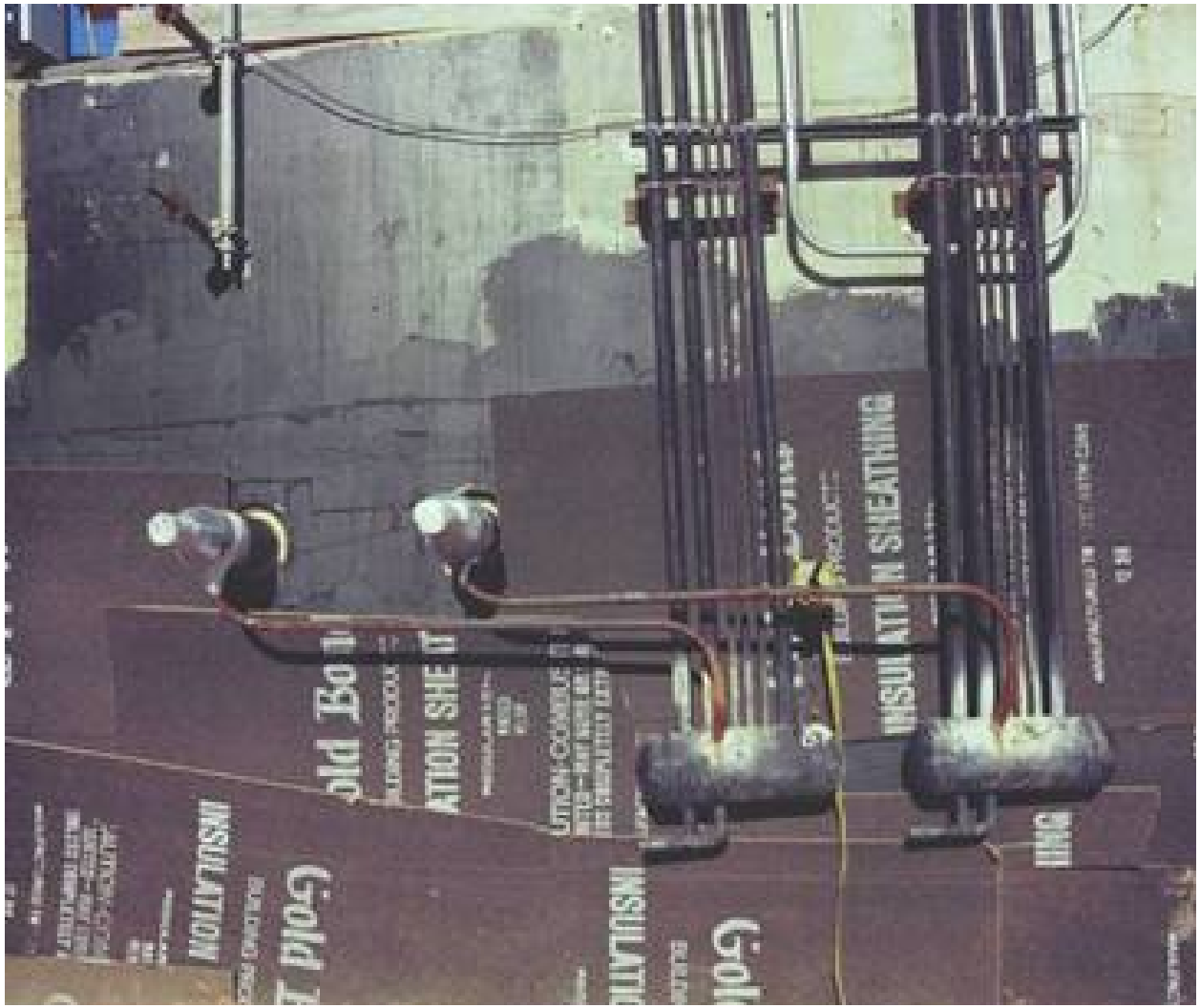
Diversion Box

Catch Tank

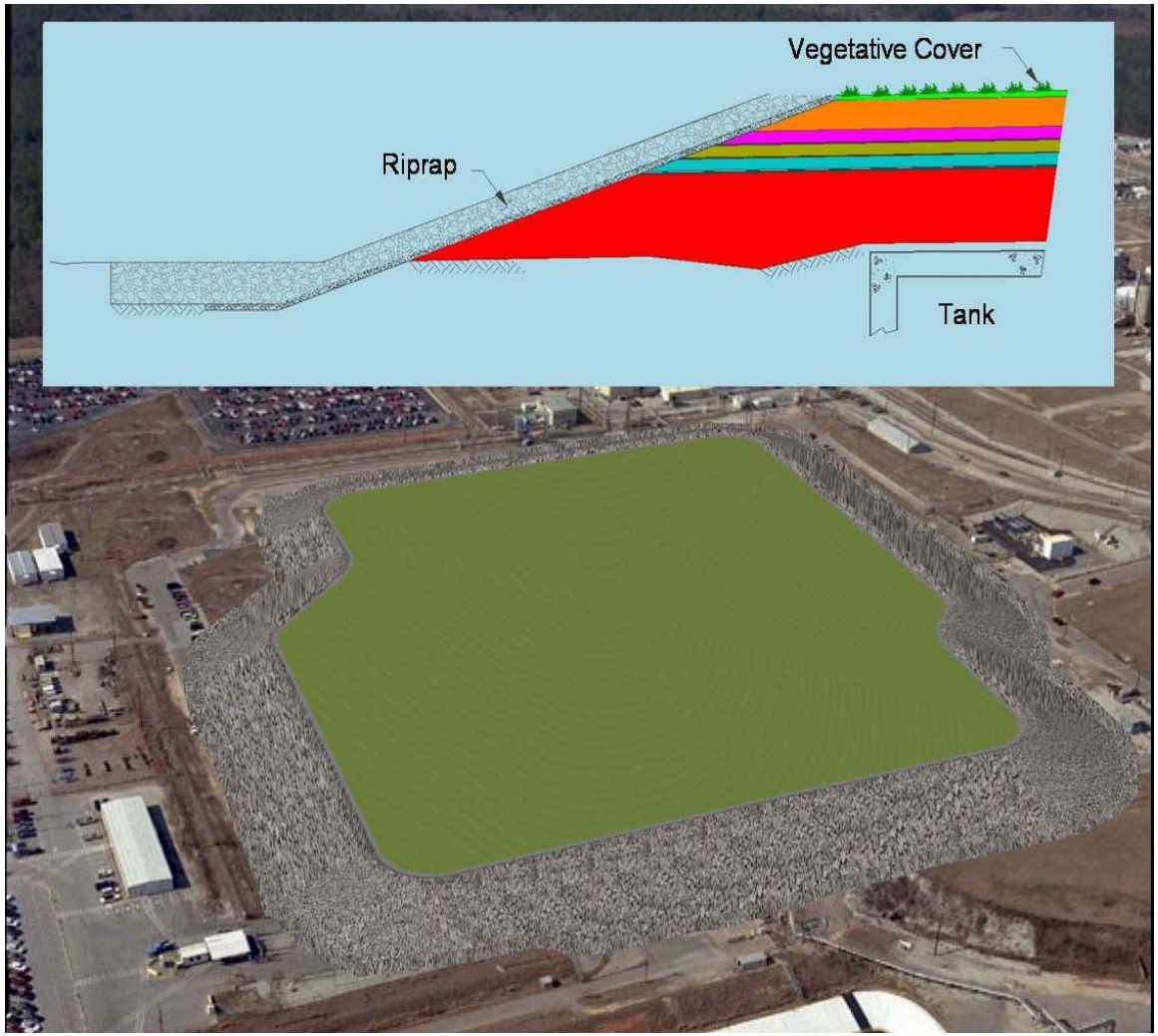

Grade
Riser to Rod Encasement
Riser to Catch Tank
Riser over Sump
Drain
Sump
[Not to Scale]

Catch Tank

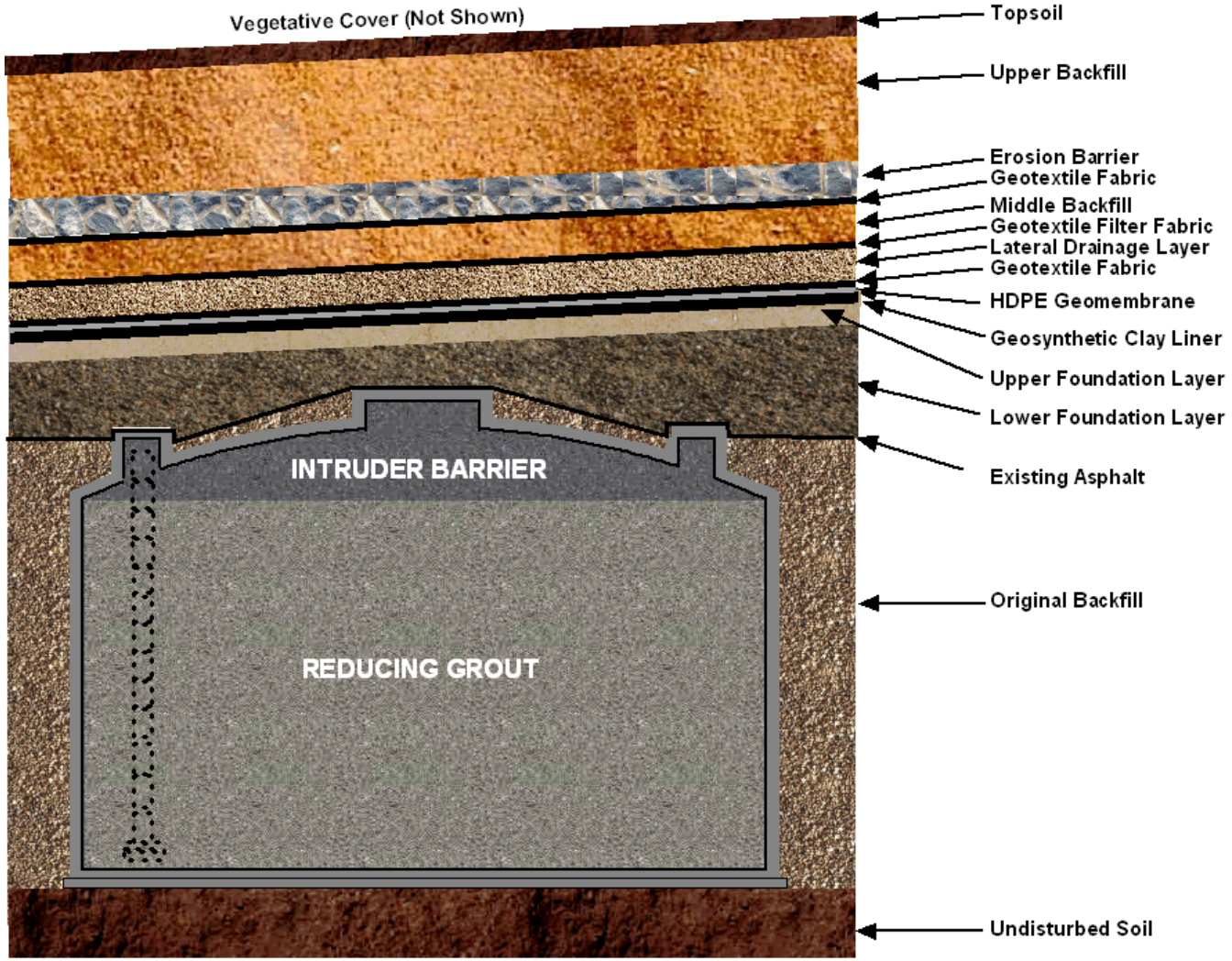
Leak Detection Boxes



Closure Cap Design

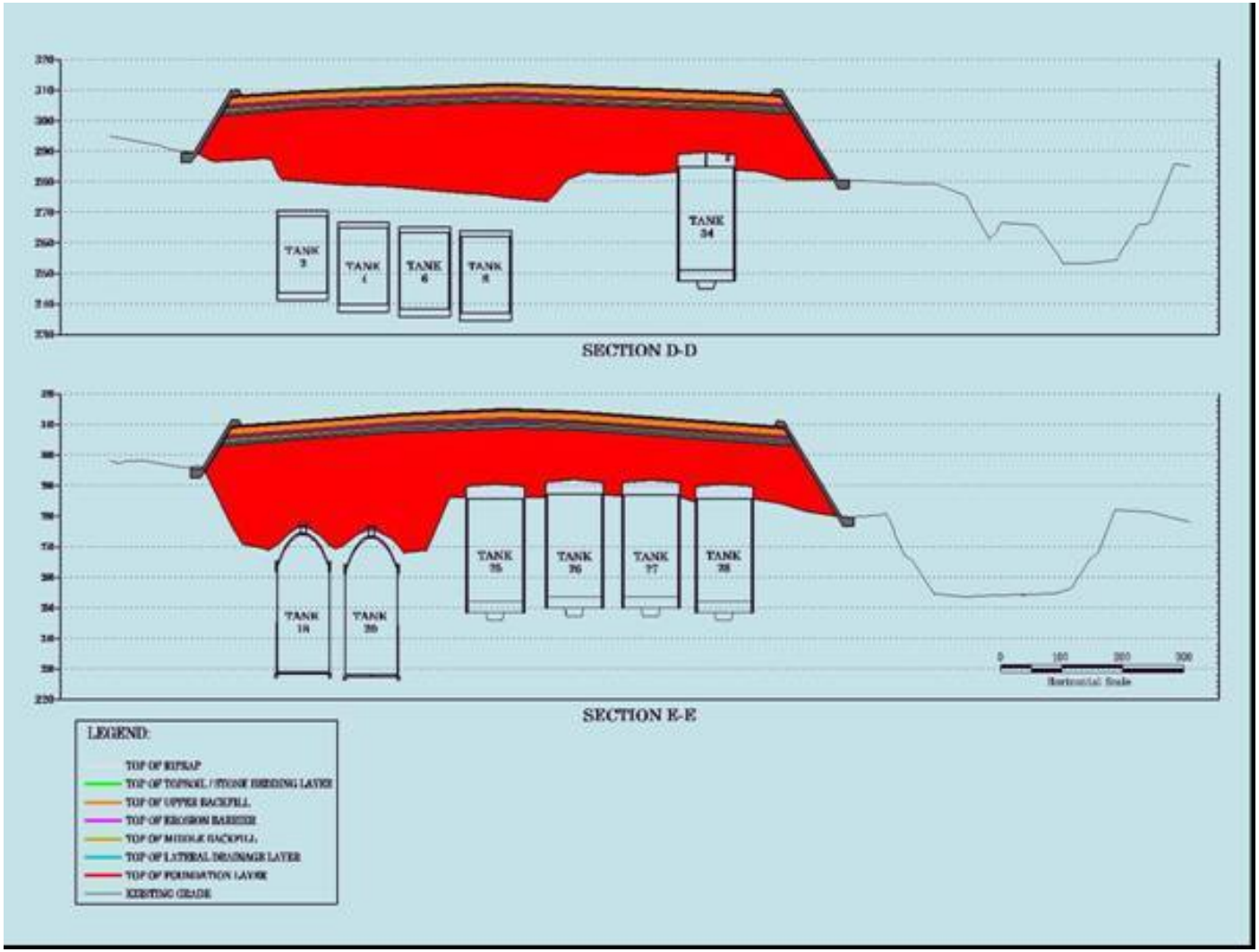


Closure Cap Concept



[NOT TO SCALE]

Closure Cap Cross Section



NOTE: Vertical scale of sections has been exaggerated 5 times in order to show all closure cap layers.

General FTF Status

- Two Type IV tanks sampled for characterization of residuals (Tank 18 & Tank 19)
- Two Type I tanks in final stage of heel removal (Tank 5 & Tank 6)
- Four Type I tanks undergoing initial waste removal activities (Tank 3, Tank 4, Tank 7 & Tank 8)
- Two Type IV tanks removed from service (Tank 17 & Tank 20)
- Waste removal activities have not been initiated on two Type I tanks (Tank 1 & Tank 2) or the ten Type III/IIIA tanks located in FTF