



We do the right thing.

Savannah River Site F-Tank Farm NRC Onsite Observation Visit: June 12, 2012



SRR-CWDA-2012-00093

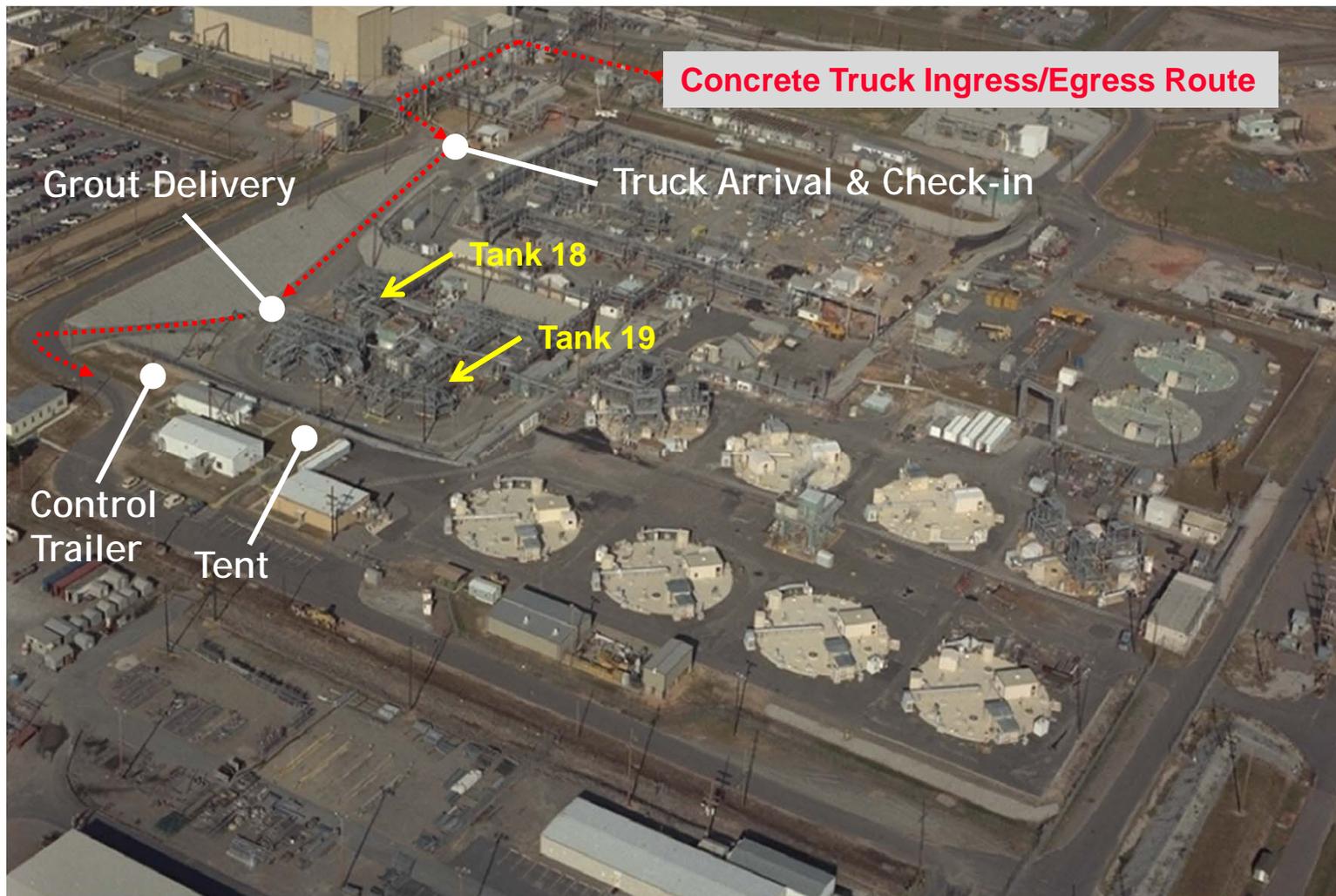
NRC F-Tank Farm Onsite Observation			
Tuesday, June 12, 2012			
Start	End	Topic	Location
7:30	8:00	Travel	Meet 703-46A
8:00	8:15	Opening Remarks & Inbrief	F-Area (Tent)
8:15	8:45	Grouting Process Briefing (Including Safety Briefing)	F-Area (Tent)
8:45	11:00	Field Observations	Tank 18/19
11:00	12:00	Lunch	766-H
12:00	12:30	NRC Internal Review	766-H, Rm. 1046
12:30	1:00	NRC FTF Outbrief	766-H, Rm. 1046
1:00	3:00	Lysimeter Tour	A-Area
3:00	N/A	NRC Depart	703-46A

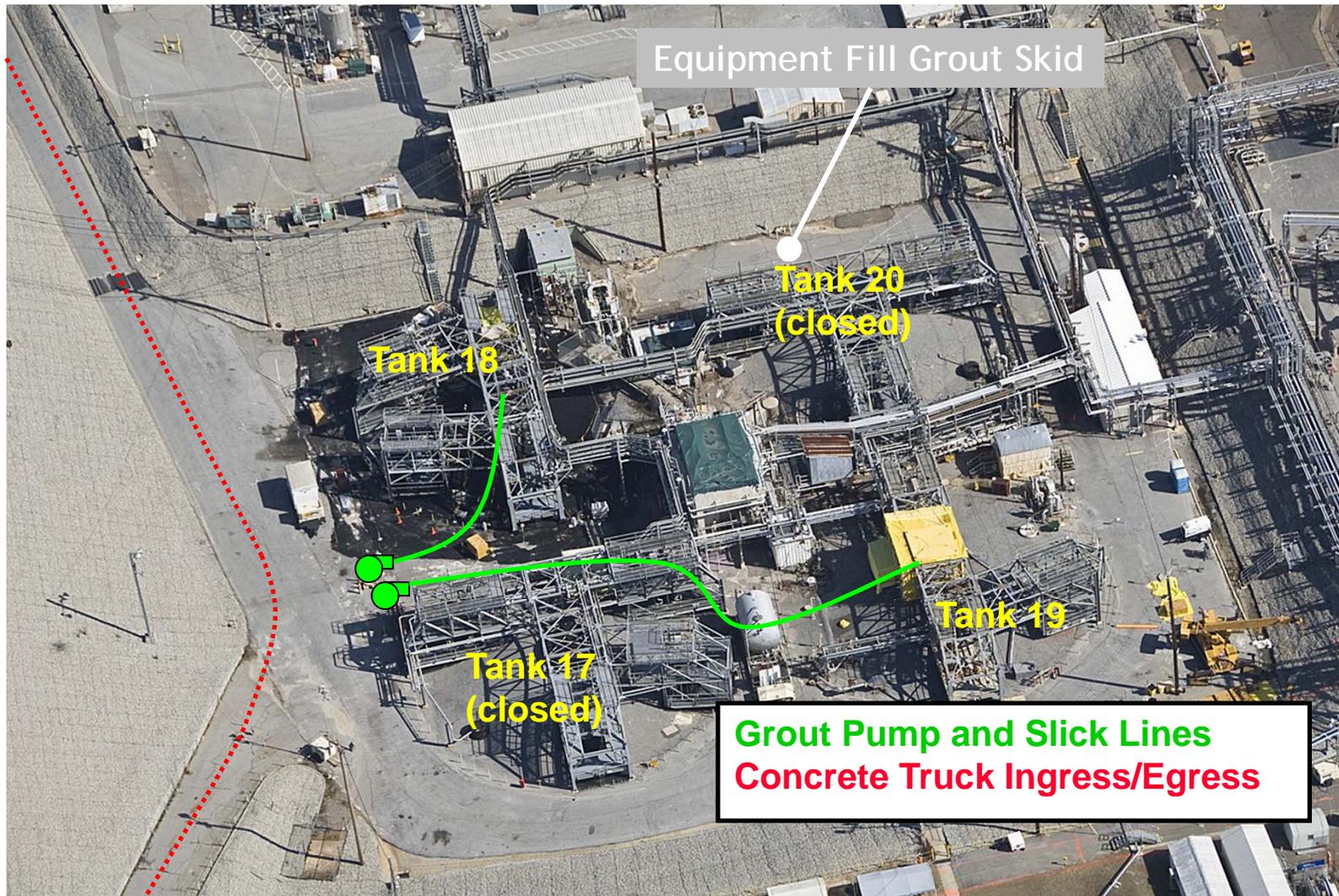
Grout Operations Field Observations

- Observation Safety Briefing
- Grout Operations Briefing
- Field Observation
- Video of Grout Placement
- Wrap-up
- Depart for Lunch

- F-Tank Farm is a property protection area, no security escorts required for uncleared personnel within area.
- Personnel involved in tour should stay in contact with designated SRS personnel in order to provide instruction in the event of a need to shelter or evacuate the work area.
- Grout Test area and truck unloading area is considered a construction work zone
- Construction work zones at a minimum require hard hat, side shield safety glasses and sturdy work shoes.
- Personnel requiring access to these work areas will attend a safety briefing and sign safe work permit for applicable work package(s).
- In addition to requiring standard Personal Protective Equipment for a construction work zone, the area around the grout pump is designated as requiring hearing protection.
- Uncured grout is highly alkaline. In the event that grout comes in contact with skin or clothing, you will be directed to nearest eye wash/safety shower for flushing.
- No areas on tour path requires sign in on a Radiological Work Permit (RWP) or wearing of rad dosimetry.
- Heat oasis stations are available in multiple locations for cool off and hydration as required.

F-Tank Farm Tanks 18 and 19





Grout Delivery to Tank

- Vendor truck discharges to dedicated grout pump hoppers. The grout undergoes pre-placement testing by SRR per the procurement specification.
- The bulk grout pump conveys grout through the selected grout slick line discharging into a tremie at the center riser of each tank.
- A camera and light array is used to monitor grout during placement. All camera shots inside tank are archived onto DVD's and time stamped.
- The grout slick line and tremie is cleaned at the end of each shift using a pneumatically launched "pig".

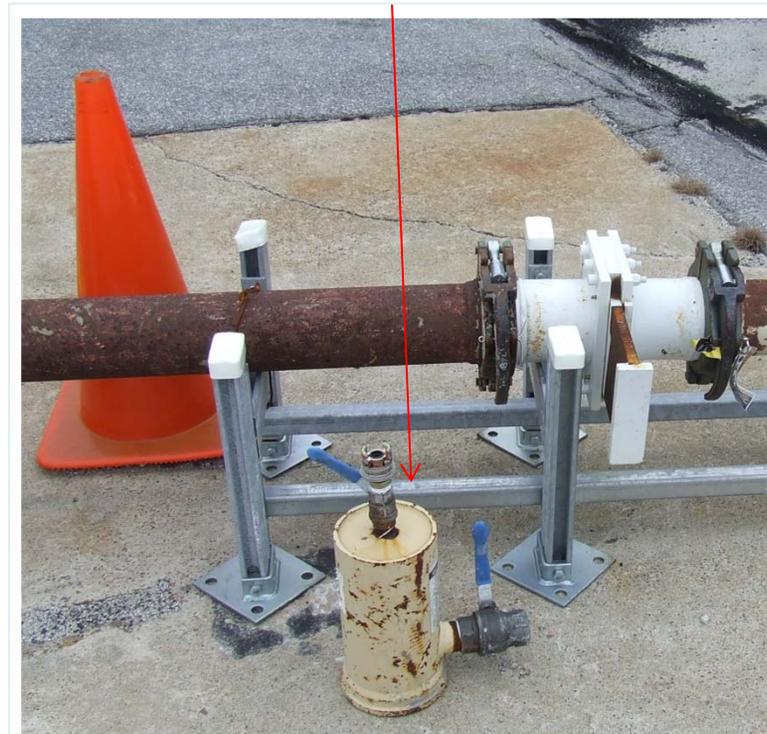
Bulk Grout Equipment Placement



Slick Line Cleaning "Pig"



Pig Launcher



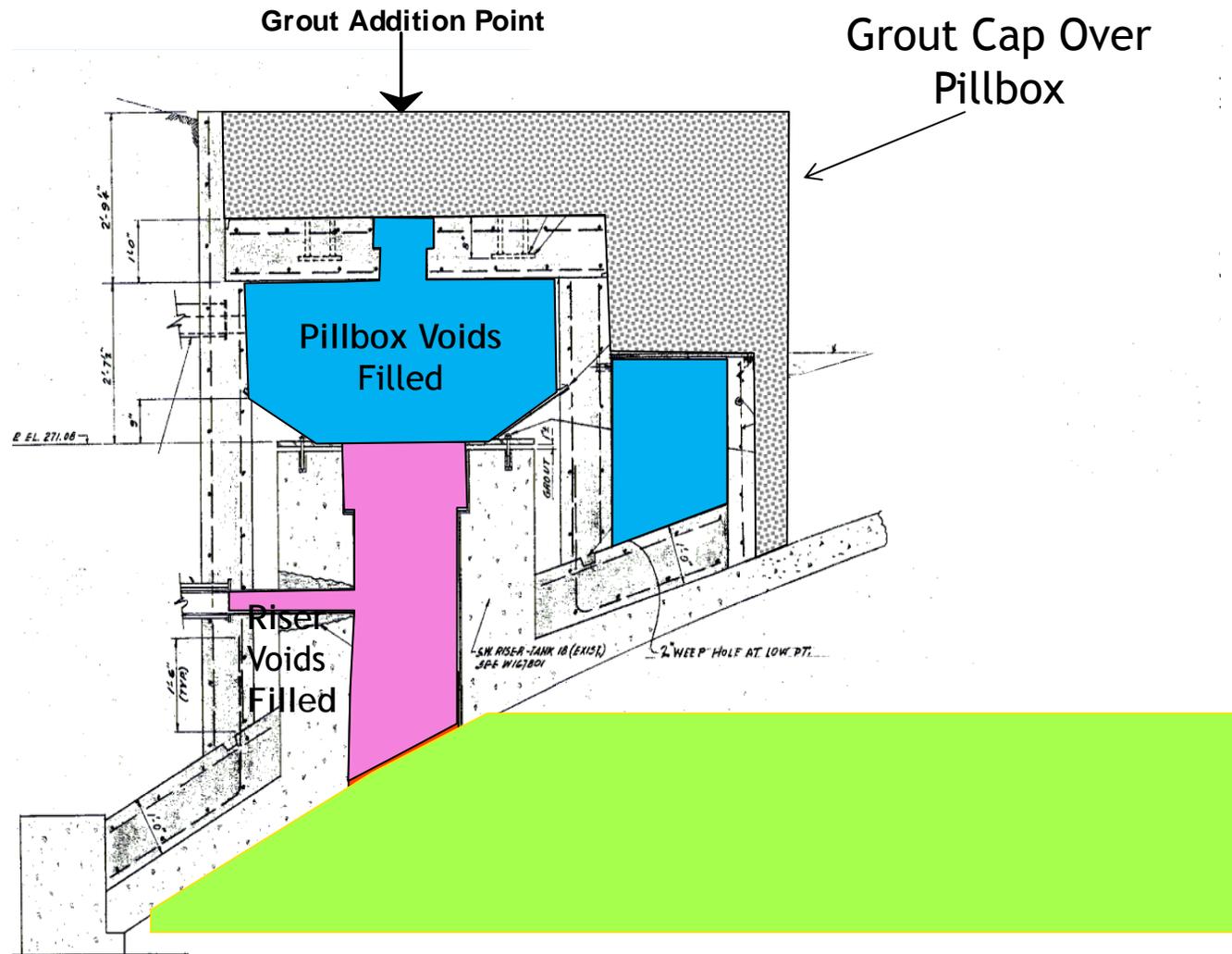
- In-situ equipment such as slurry pumps and transfer jets have internals grouted in an order logical with bulk grout placement.
- In-situ equipment grout quantities have been pre-calculated for each piece of equipment. Grout quantities are small in volume, and are mixed and placed by SRR personnel per pre-approved work plans.
- Once the base of each riser has been covered in grout and allowed to cure, the riser cylinder is manually filled to grade with the bulk grout formula.
- Pour forms have been erected around each riser. Grout will then be added in stages to cap the riser along with any abandoned equipment above the riser once the tank dome is filled.

Equipment Fill Grout Skid



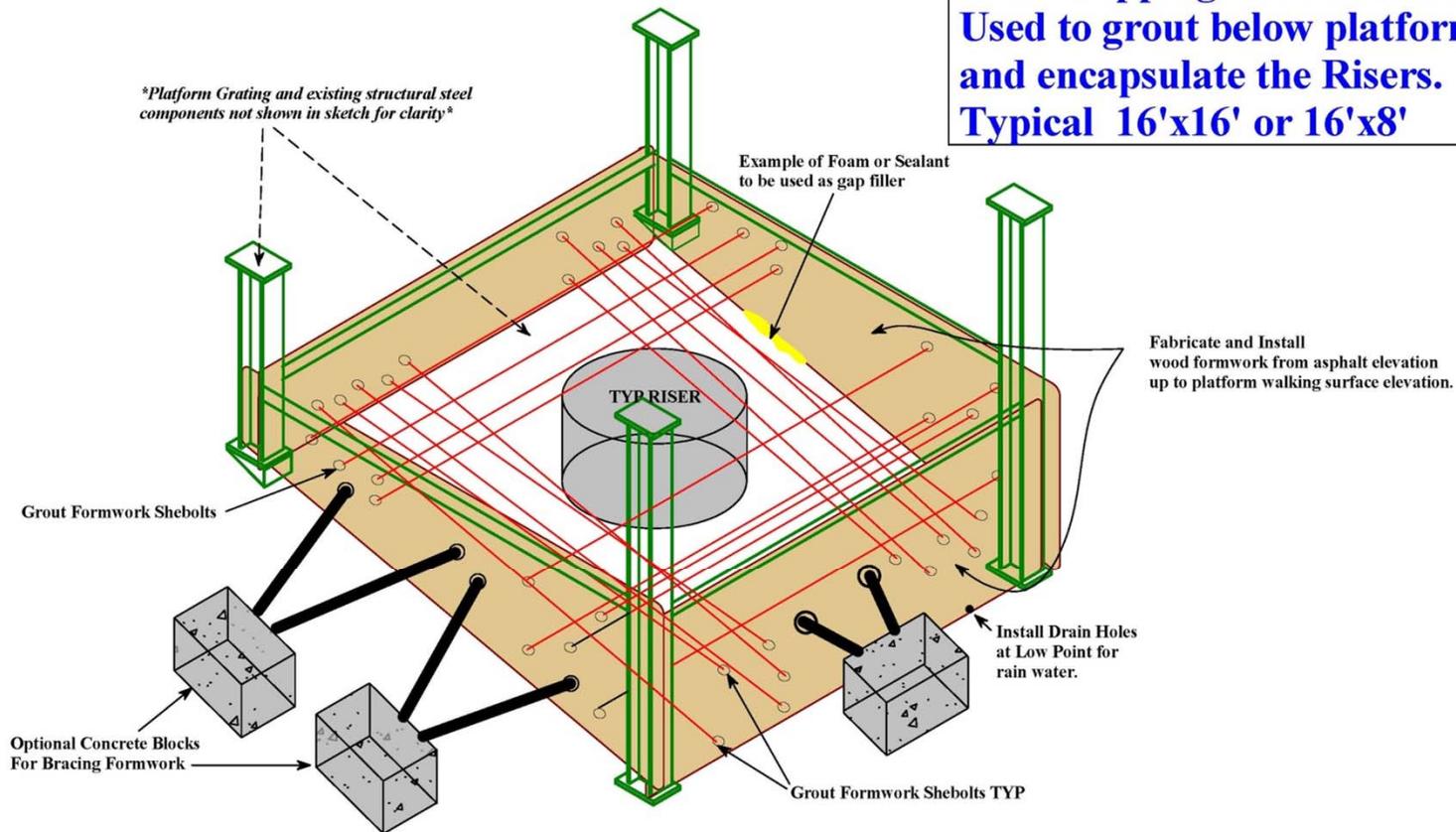
- Equipment fill grout skid is a commercial unit designed specifically for the manufacture of high strength colloidal grout formulas.
- SRR personnel pre-mix dry ingredients by weight.
- Water is combined with the dry materials as required, mixture is allowed to hydrate with low shear mixer.
- High shear mixer engaged to finish grout mixing and thin the grout
- Grout is batched to holding hopper and metered into equipment by gravity via hose and funnel.
- Totalizer at flow meter provides real time quantity of grout added
- Equipment has high point vent that collects overflow indicating filling complete.

Riser Pour



Riser Cap Pour Forms

TANKS 18 and 19
Riser Capping Grout Forms
 Used to grout below platform
 and encapsulate the Risers.
 Typical 16'x16' or 16'x8'



*In locations where shebolts can not be used. Construction can weld supports to the existing steel structure AND/OR install concrete blocks around the exterior of the platform for use as bracing.

Riser Cap Pour Forms



Grout Testing Protocol



Arrival & Check-in



Grout Truck Staging



Grout Delivery System



Grout Truck Arrival and Check-in:

- Every Truck
 - Batch Tickets (Multiple Verifications)
 - Grout mix
 - Timing < 90 minutes
 - Revolutions < 300
 - Point of delivery water additions
- Daily
 - First Batch & at least one truck after first 100 cubic yards
 - Molding Cylinders (9)
 - Compressive Strength (7, 28, 91 days)
 - Spread
 - Temperature
 - Unit weight/yield
 - Bleeding of grout
 - Air Content
- Additional testing as determined by Construction Discipline Engineer (CDE)

Video of Grout Placement:

- Continuous during grout placement

Field Status as of June 7, 2012

Tank 18

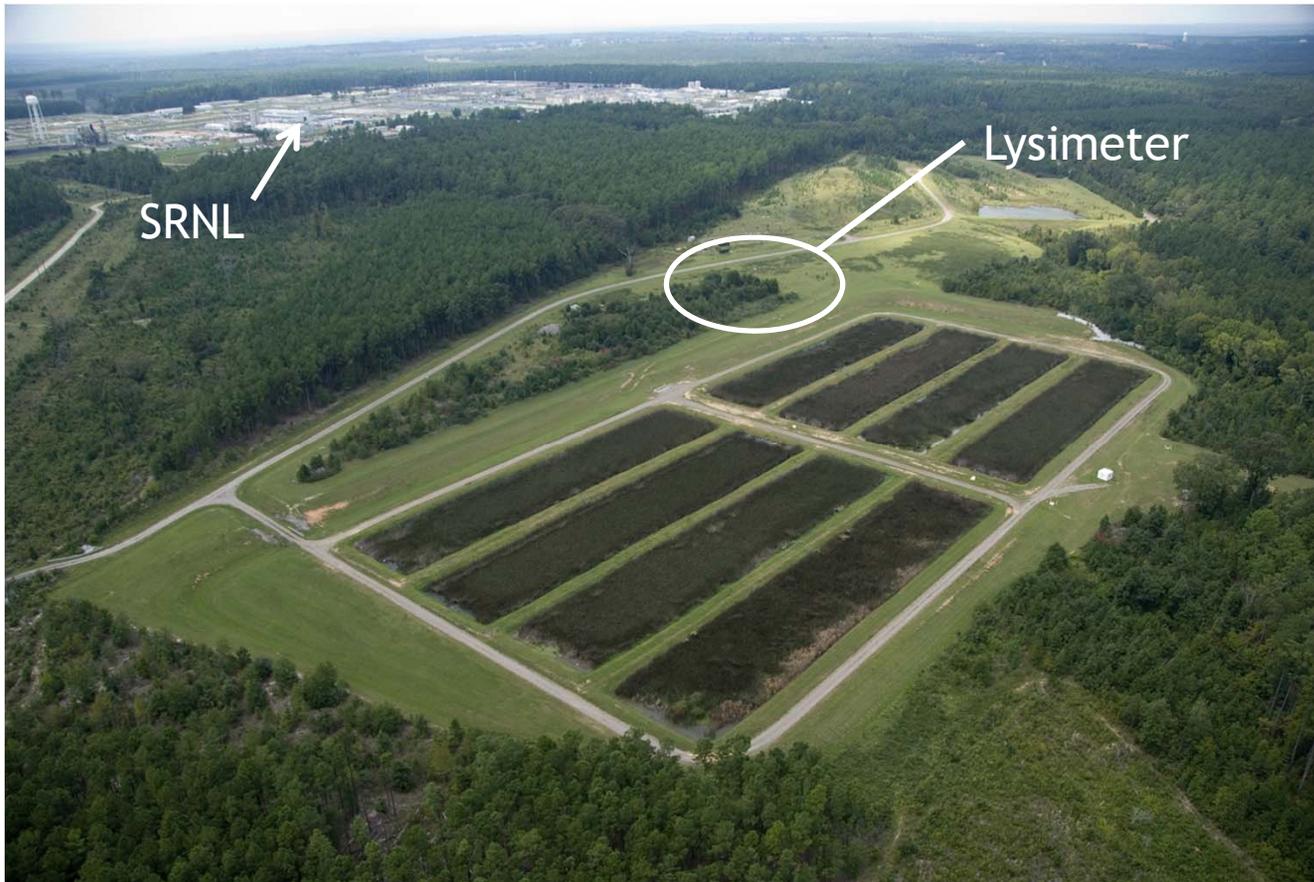
- Approximately 67 % Full
- 699 Truck Total
- No Risers Capped

Tank 19

- Approximately 83 % Full
- 866 Truck Total
- No Risers Capped

NRC FTF Outbrief

- NRC Staff Out brief
- Action Items Captured
- Closing Statements
- Depart for Lysimeter Tour



Long-Term Lysimeter Study:

Ten-year study of various elements/radionuclides in several media of interest to the Liquid Waste performance assessments:

- Test site in the SRS environment (not laboratory)
- First hot samples placed in unit in April 2012



