

Former 3M Ceramics Site

Conceptual Site Model

Laurens, SC Facility

Agenda

- Introductions
- Summary of DHEC's Comments
- Conceptual Site Model
- Investigation Approach
- Path Forward

Introductions

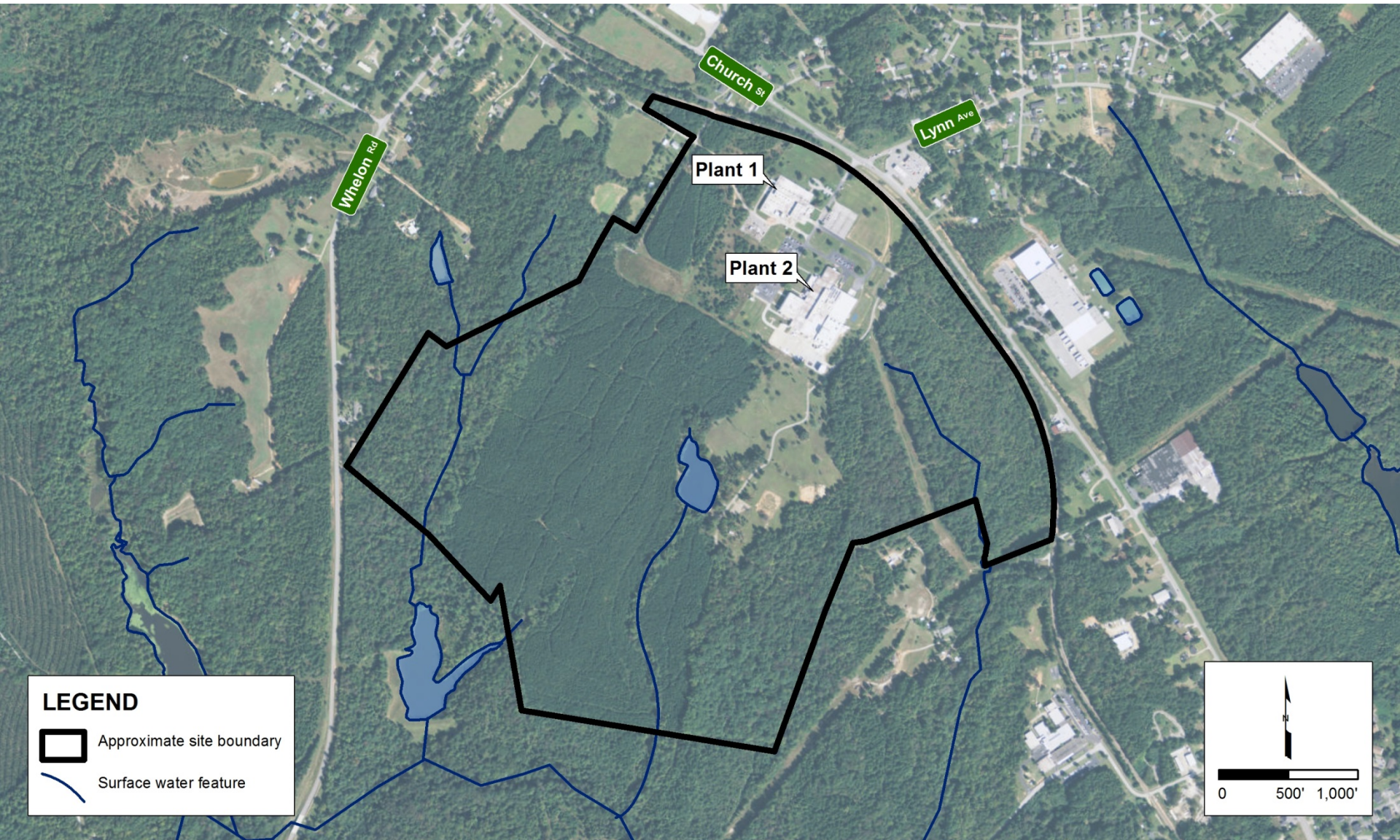
- Addie Walker – SCDHEC
- Gary Stewart – SCDHEC
- Jeannie Martin – 3M
- Jim Kotsmith – 3M
- Jennine Trask – ARCADIS
- Elizabeth Rhine – ARCADIS
- Matt Schnobrich – ARCADIS
- Tom Darby – ARCADIS

Recent Correspondence

- DHEC requested additional investigation and FFS for both Plant 1 and 2
 - Source investigation around Plant 1 Wastewater Pond (Pond 1)
 - Evaluate lateral migration to the NW (MW-3/MW-79)
 - Investigation downgradient of the landfill
- DHEC requested isoconcentration maps for each COC
- DHEC requested updated receptor survey
- 3M and DHEC agreed to address both Plants as one site
- DHEC requested the results from the 2014 event be submitted

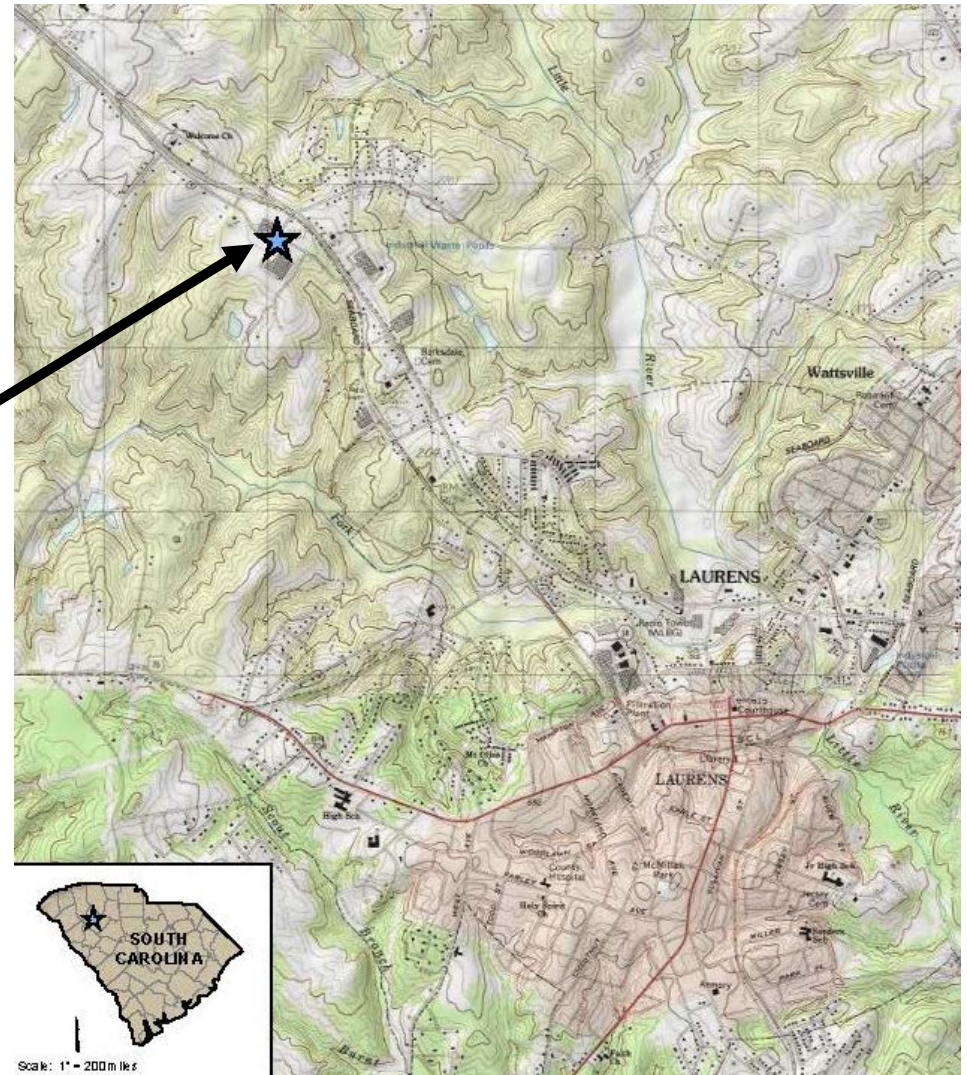
Conceptual Site Model

Site Location Map



Imagine the result

Regional Geology



Imagine the result

Regional Hydrogeology

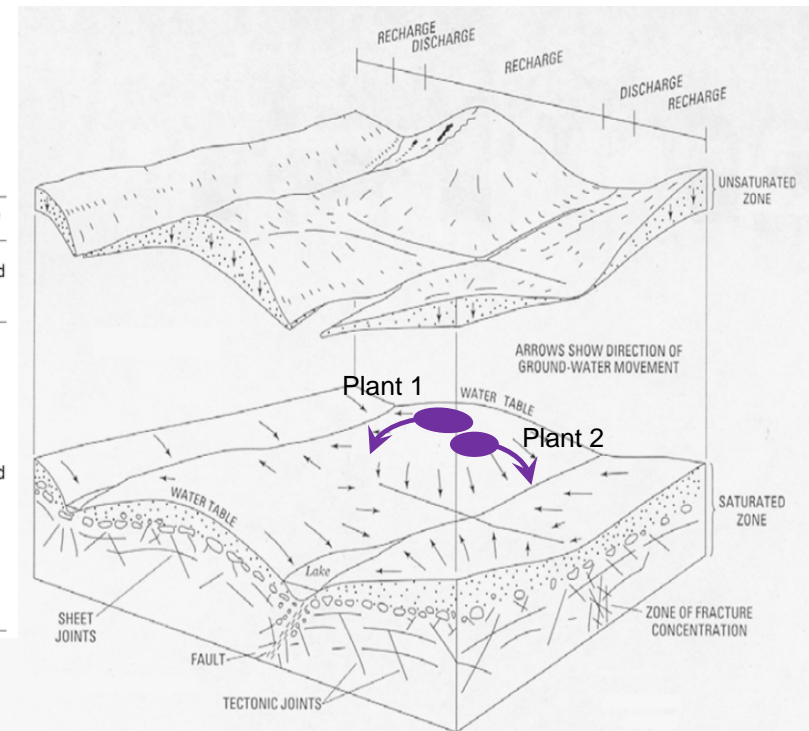
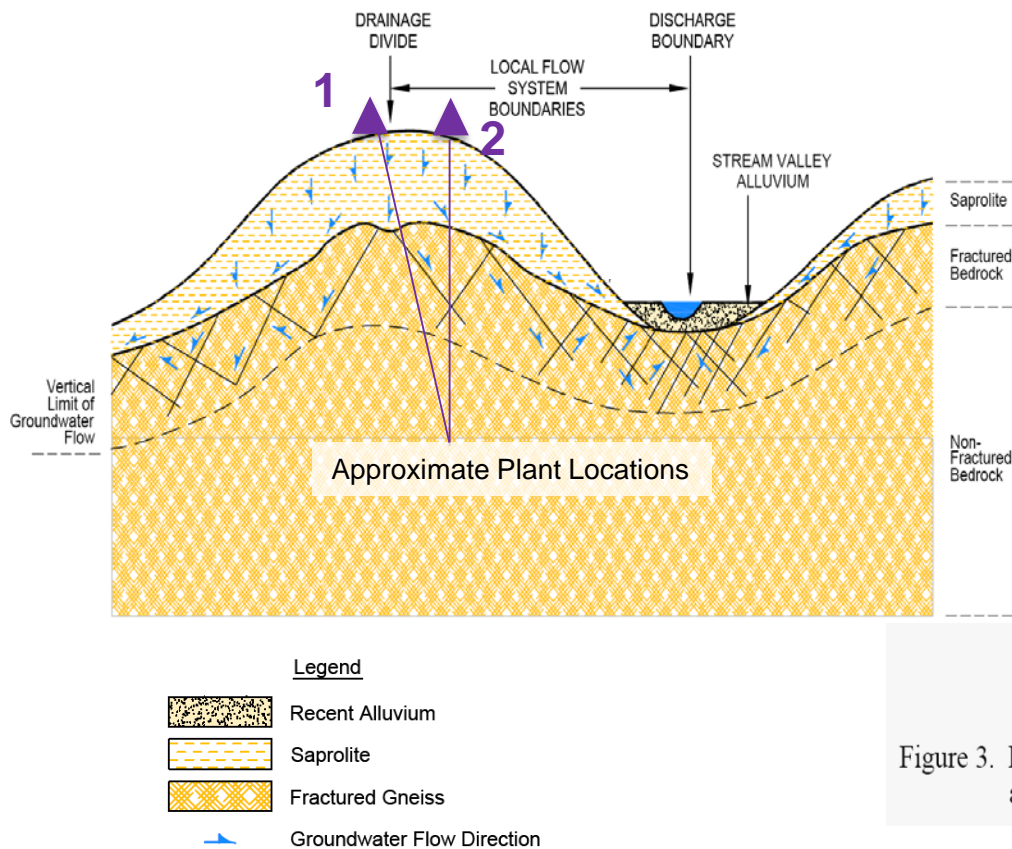


Figure 3. Diagram showing a conceptual view of the groundwater flow system in the Piedmont and Mountain Region of North Carolina. (from Daniel, 1990)

Imagine the result

Site Geology



SAPROLITE: Highly decomposed bedrock

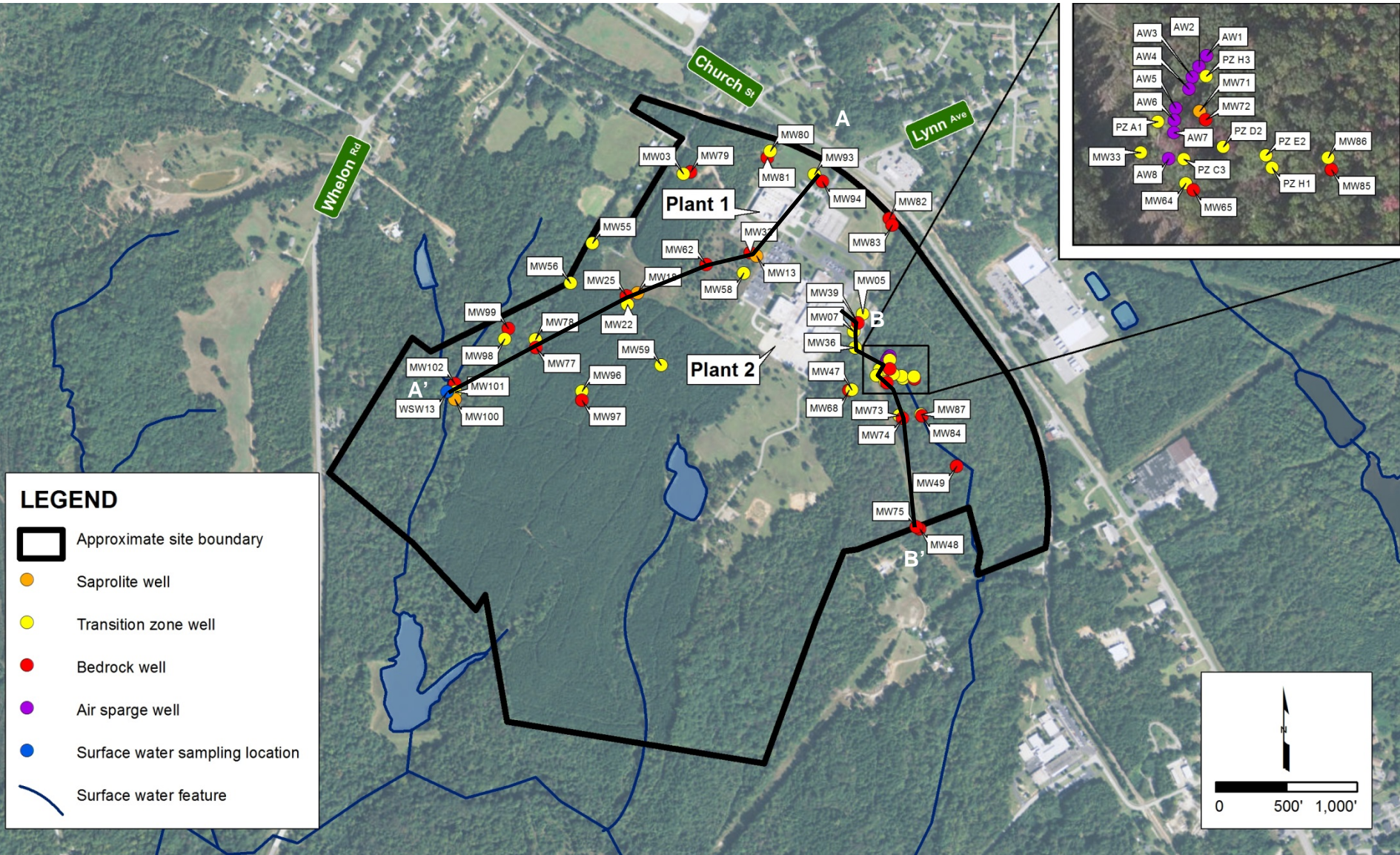
Partially Weathered Rock:
Transition between Saprolite and Fractured Bedrock

Fractured Bedrock:
Unweathered bedrock with high fractured density

Deep bedrock:
Unweathered bedrock with low fracture density

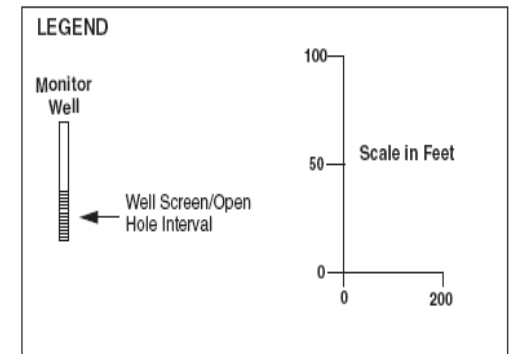
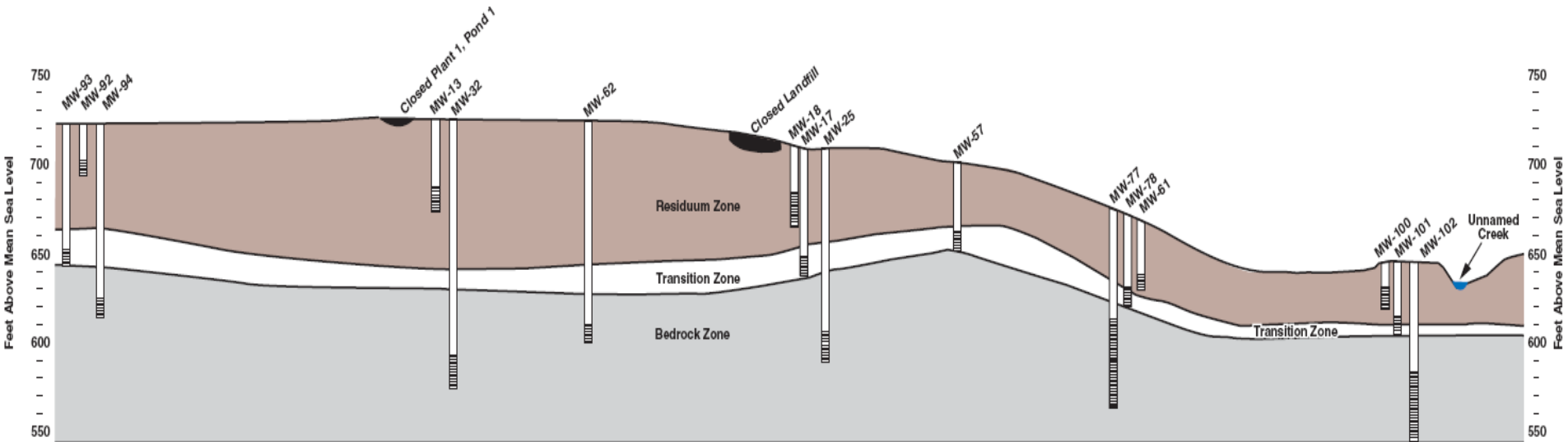
Imagine the result

Cross Section Location Map



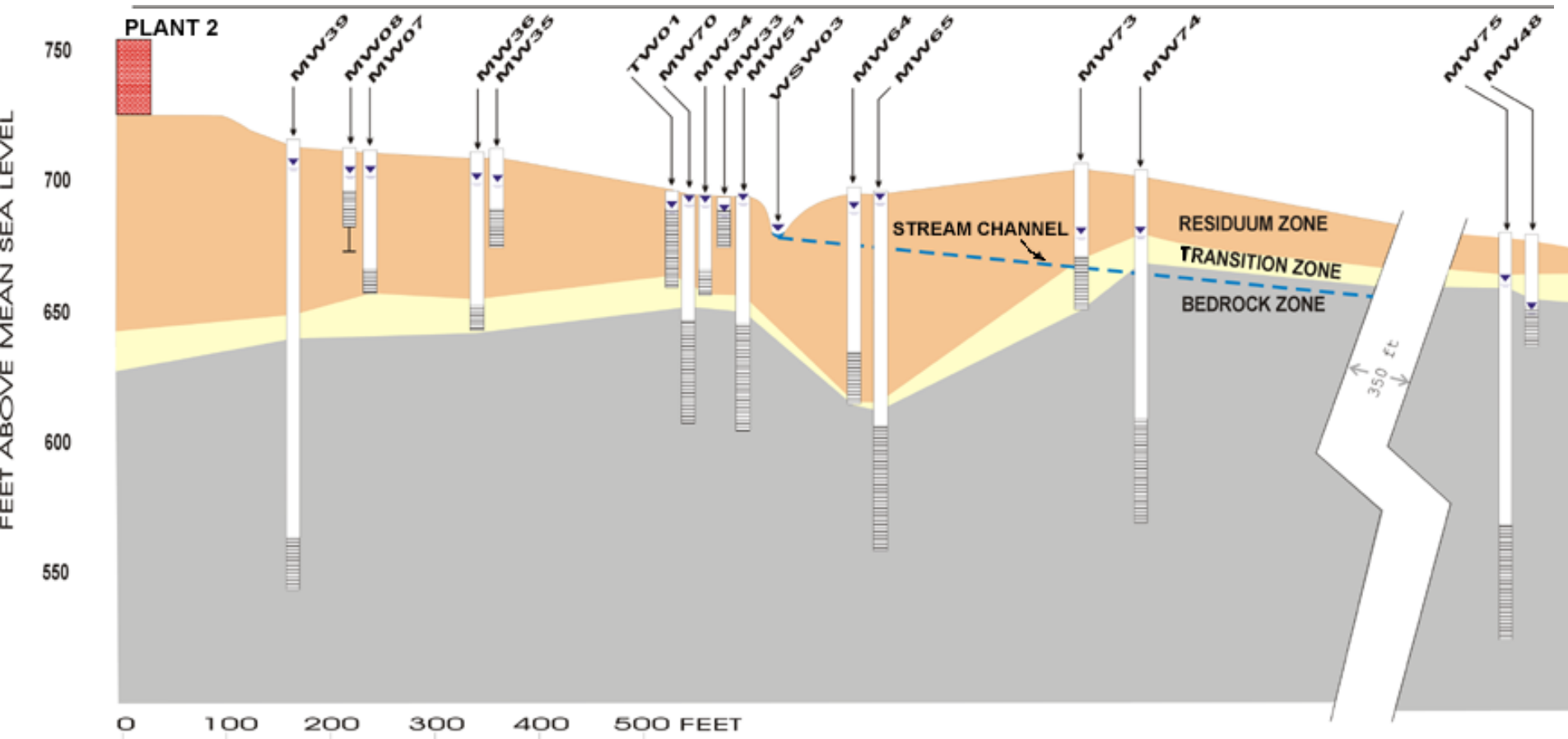
Imagine the result

Generalized A-A' Cross Section



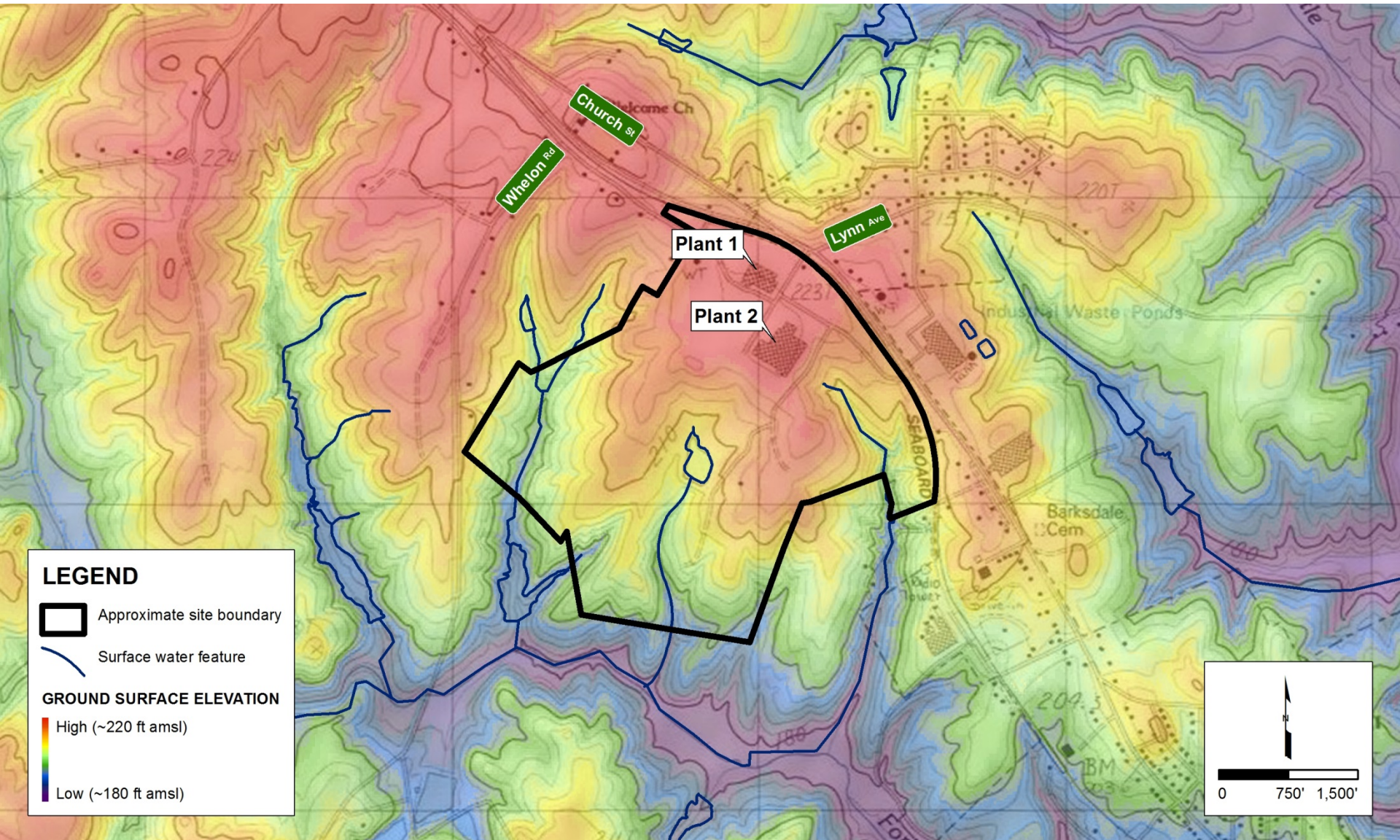
Imagine the result

Generalized B-B' Cross Section



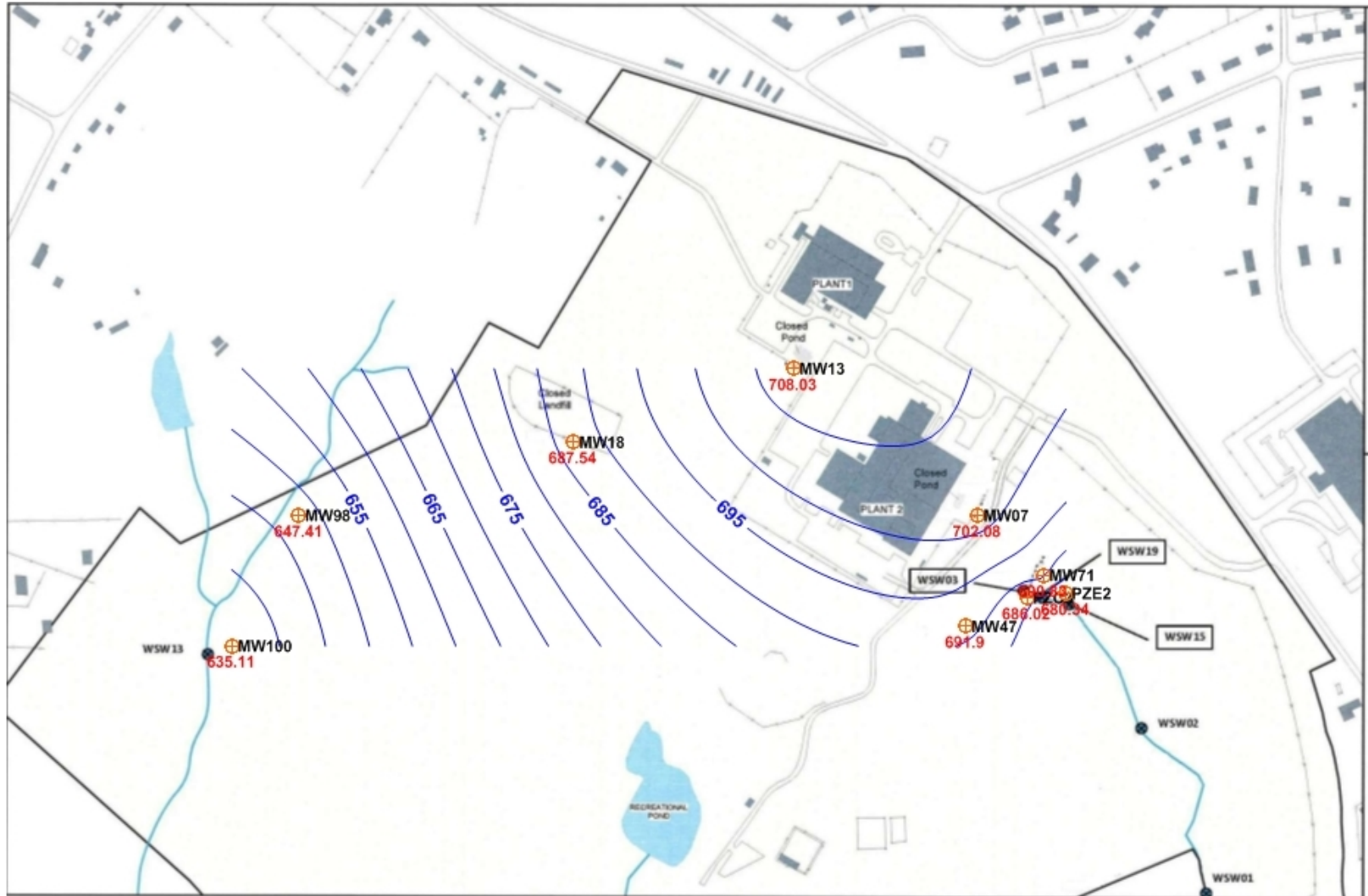
Imagine the result

Site Topography



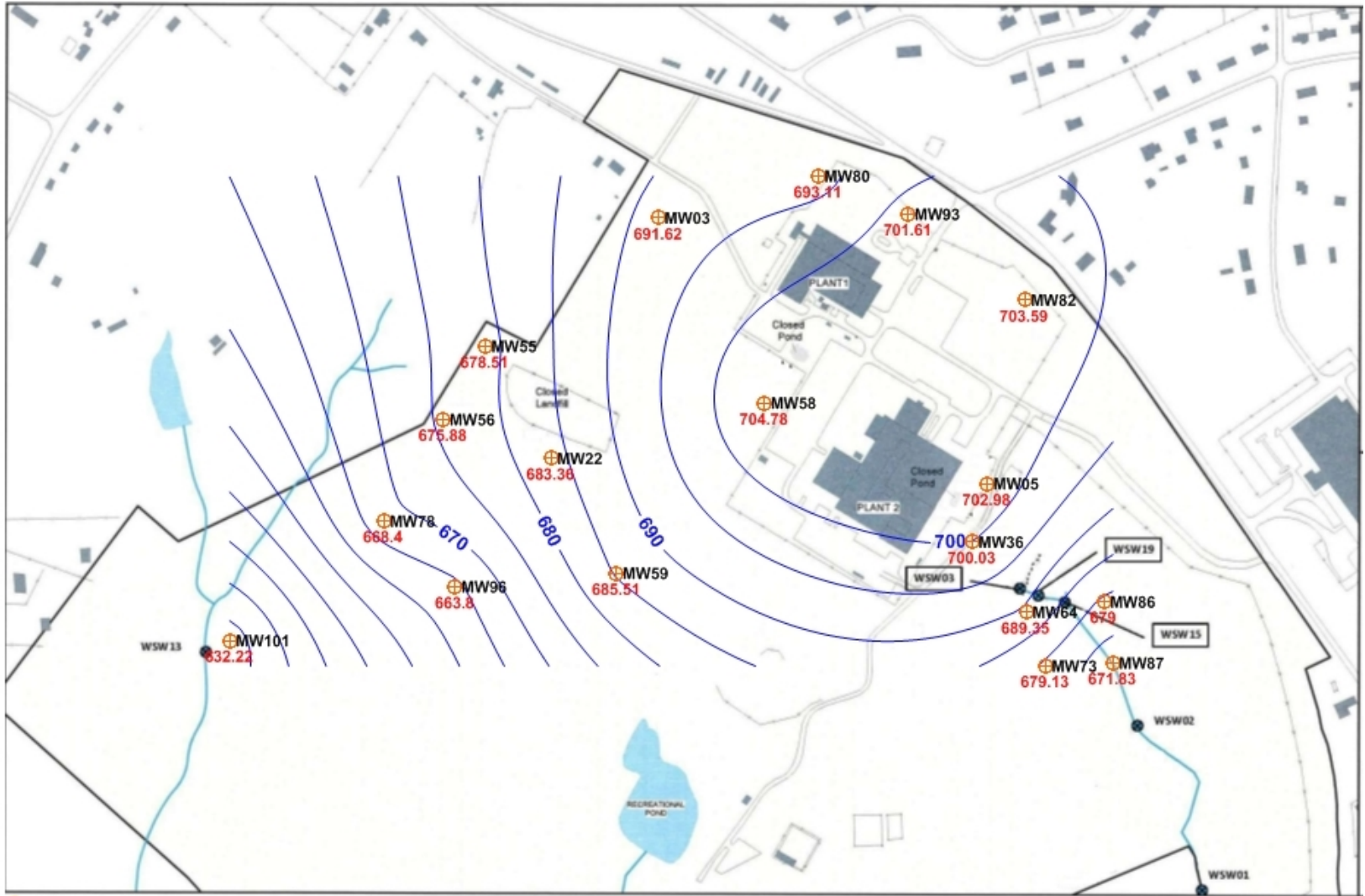
Imagine the result

Site Hydrogeology – Saprolite



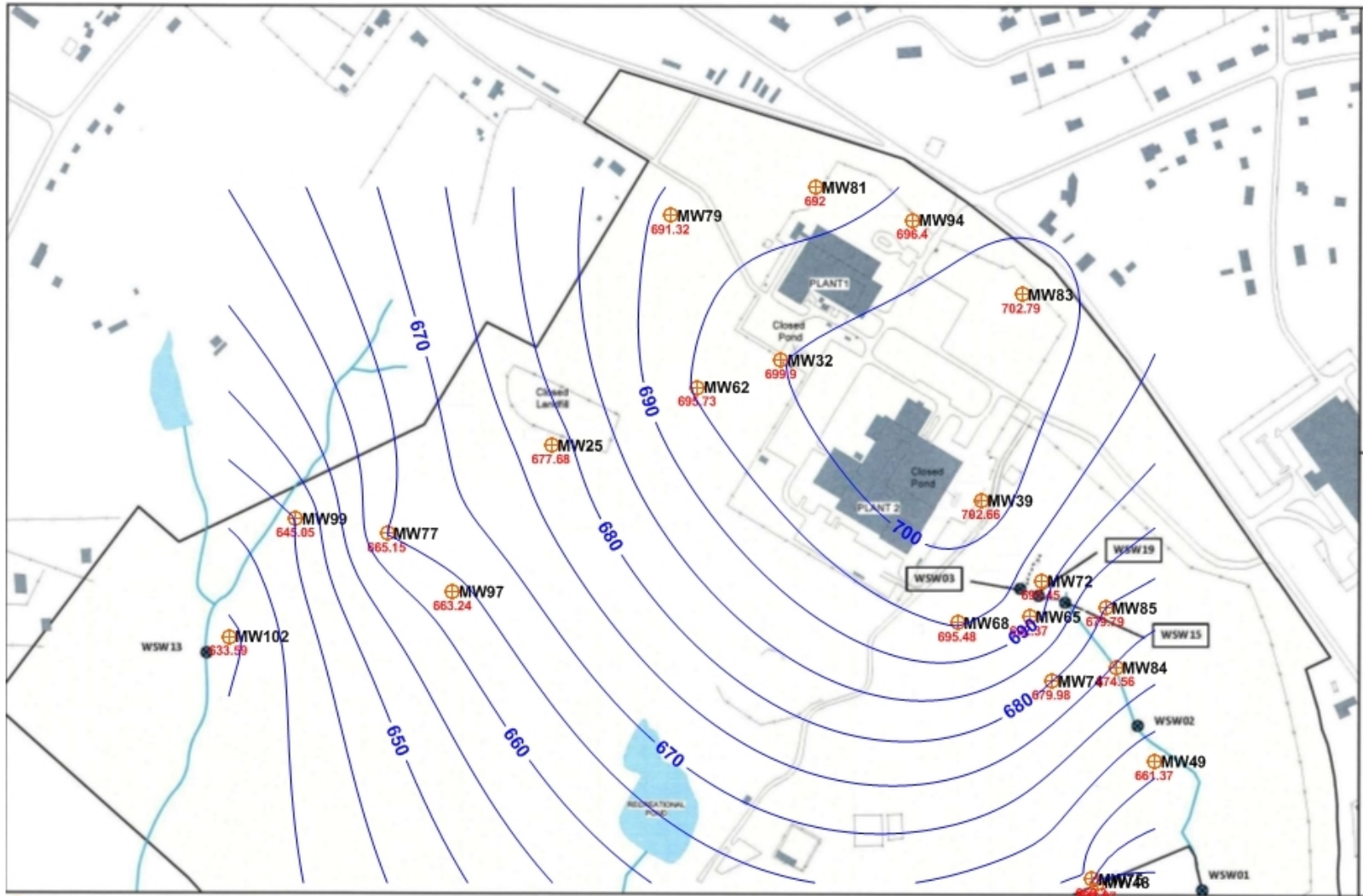
Imagine the result

Site Hydrogeology – Transition Zone



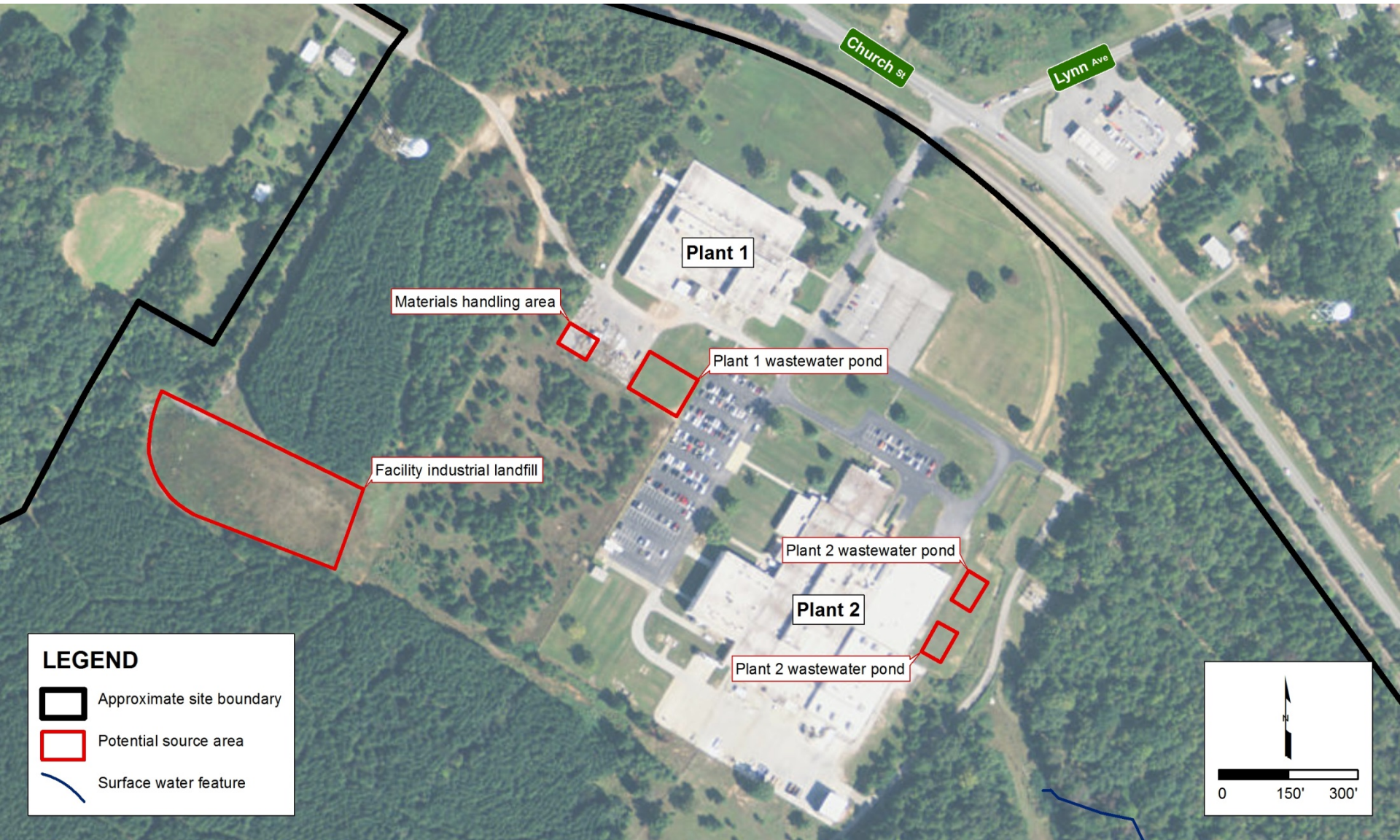
Imagine the result

Site Hydrogeology – Bedrock



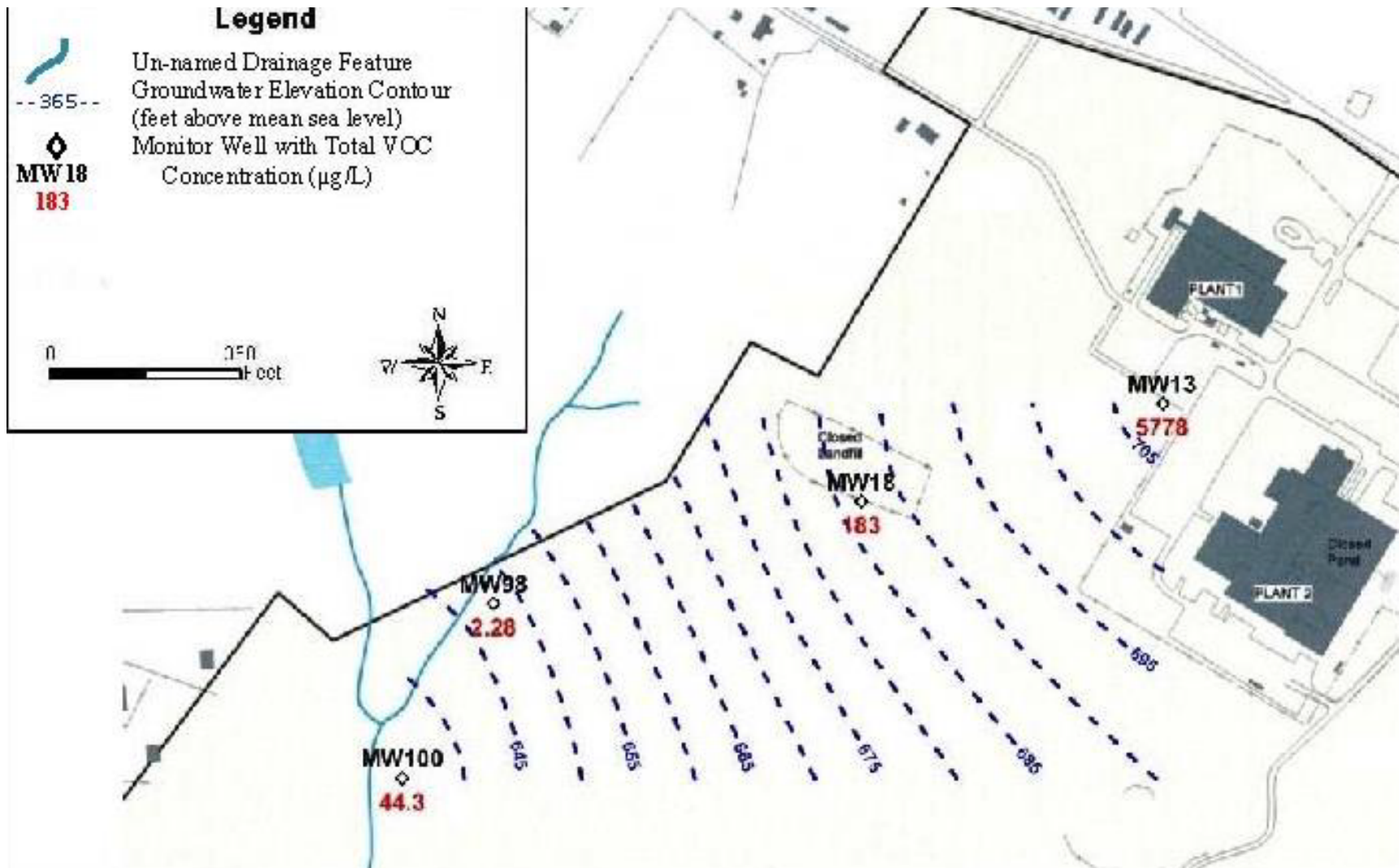
Imagine the result

Potential Sources



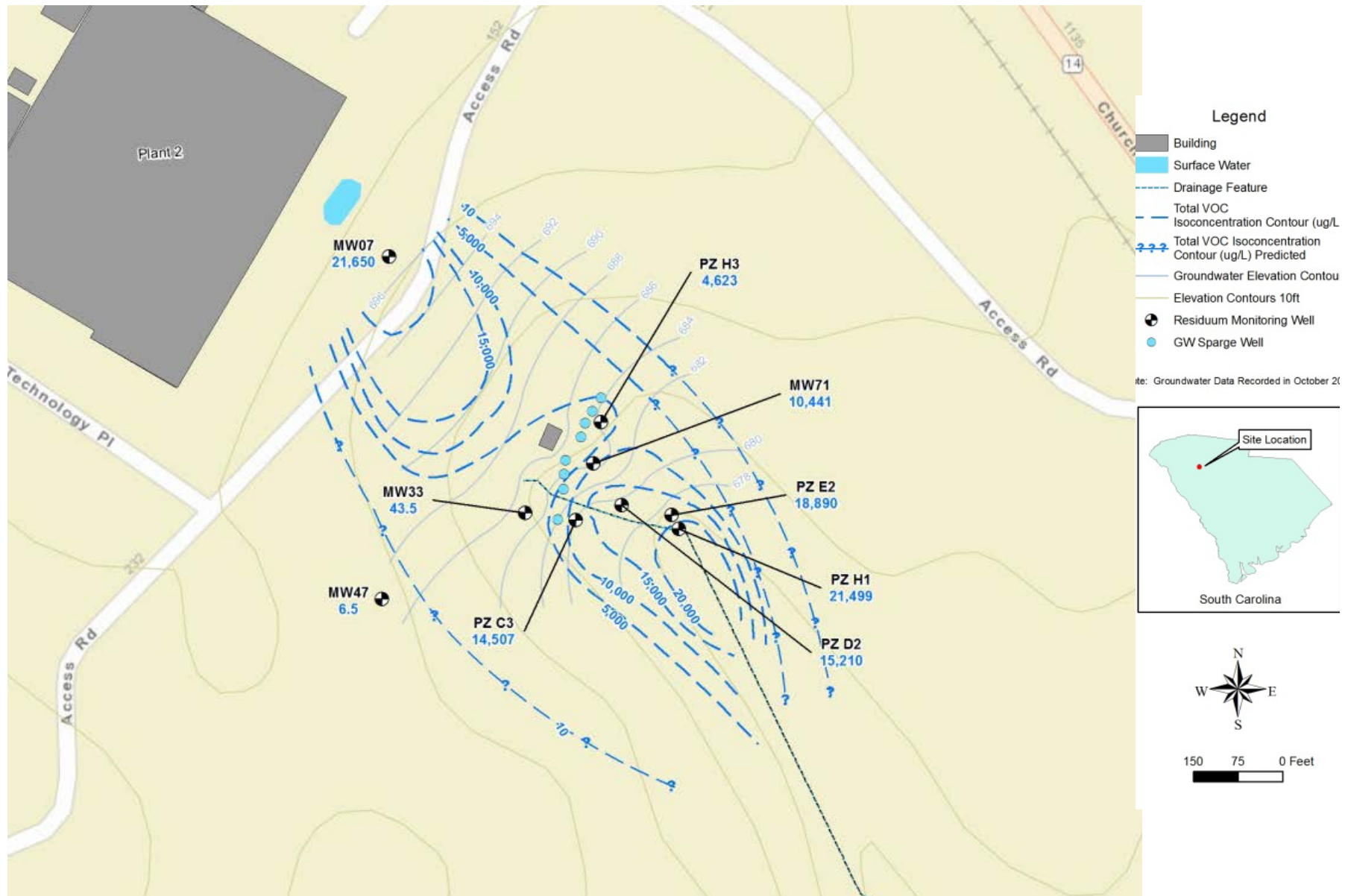
Imagine the result

Total VOCs – Saprolite Groundwater (Plant 1)



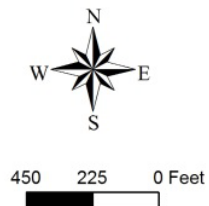
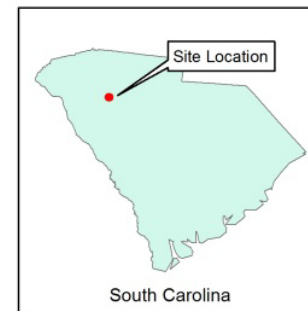
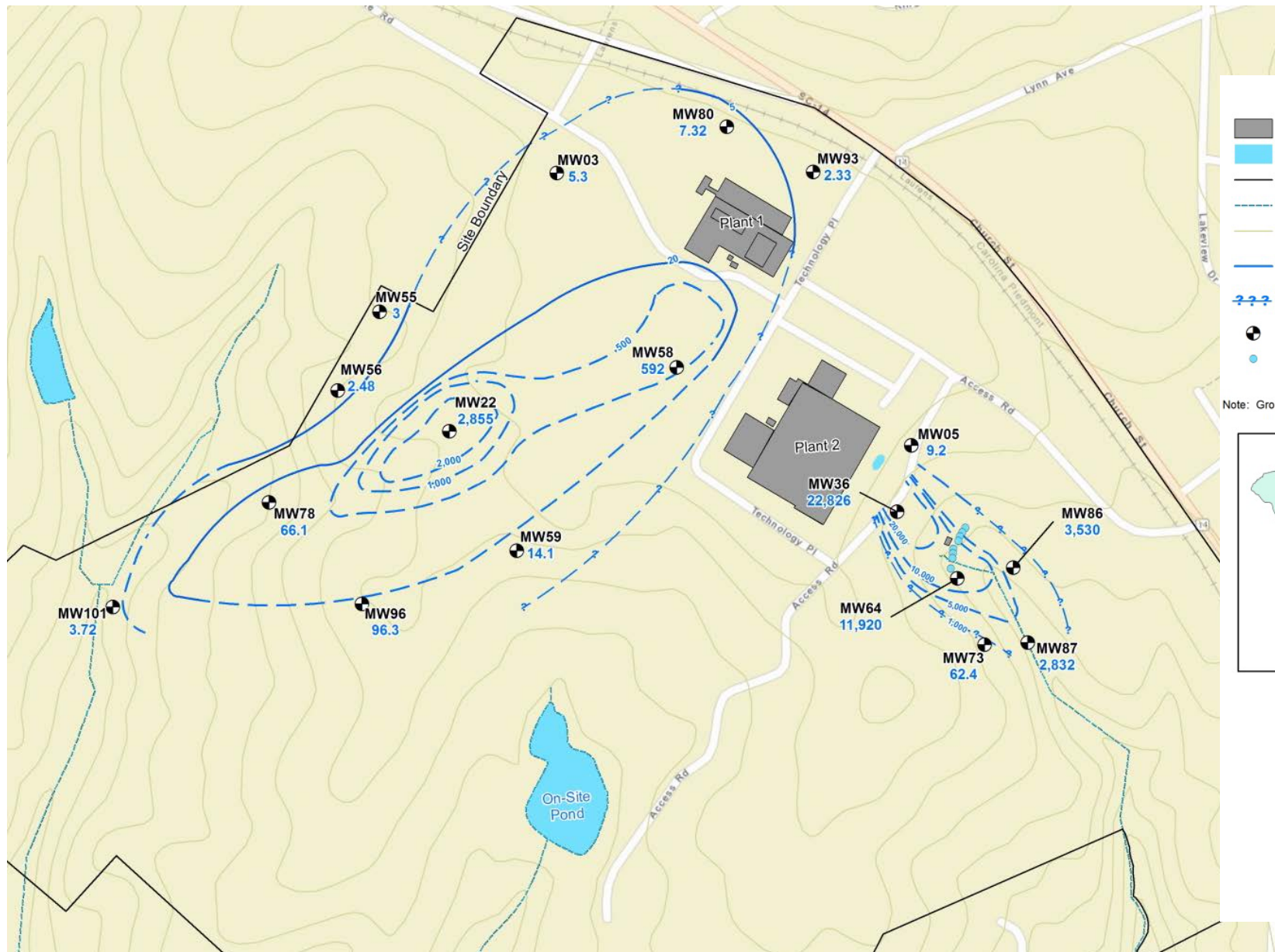
Imagine the result

Total VOCs – Saprolite Groundwater (Plant 2)



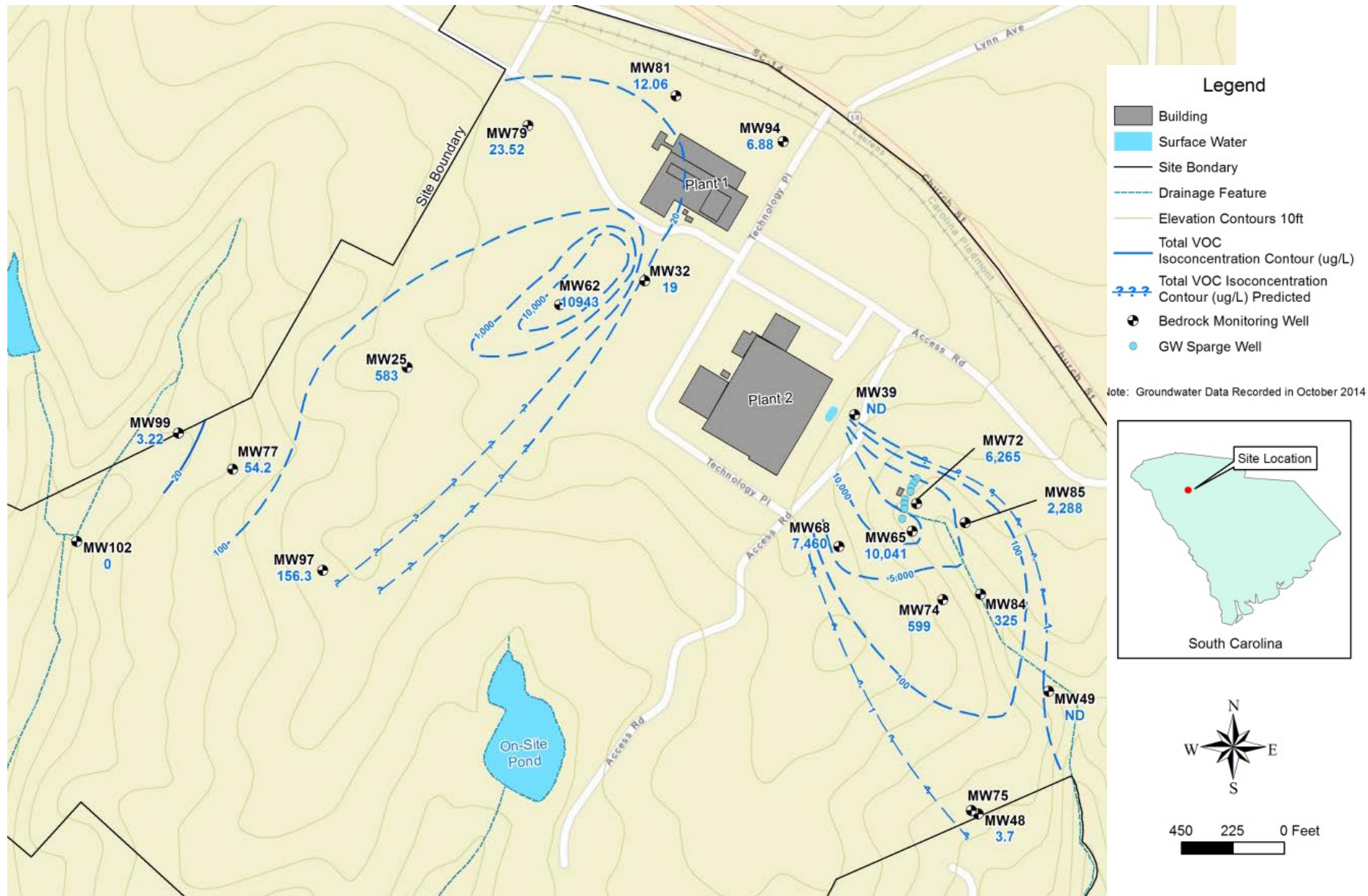
Imagine the result

Total VOCs – Transition Zone Groundwater



Imagine the result

Total VOCs– Bedrock Groundwater



Imagine the result

Investigation Approach

- Potential Sources
 - Residual impacts beneath Plant 2
 - Plant 1 and Plant 2 Wastewater Ponds
 - Materials handling area (Plant 1)
 - Industrial Landfill
- Groundwater
 - Hydrostratigraphic framework
 - Boring log evaluation to confirm monitoring intervals
 - Understand permeability controls on plume migration
 - Complete dissolved plume delineation within different HSUs
- Soil
 - Currently being evaluated

Path Forward

Investigation Approach

- Adaptive
- Define Sources
- Define Migration Pathways
- Complete delineation

FFS Evaluation

- Develop focused list of technologies
- Identify need for supplemental treatability testing to support technology evaluation

