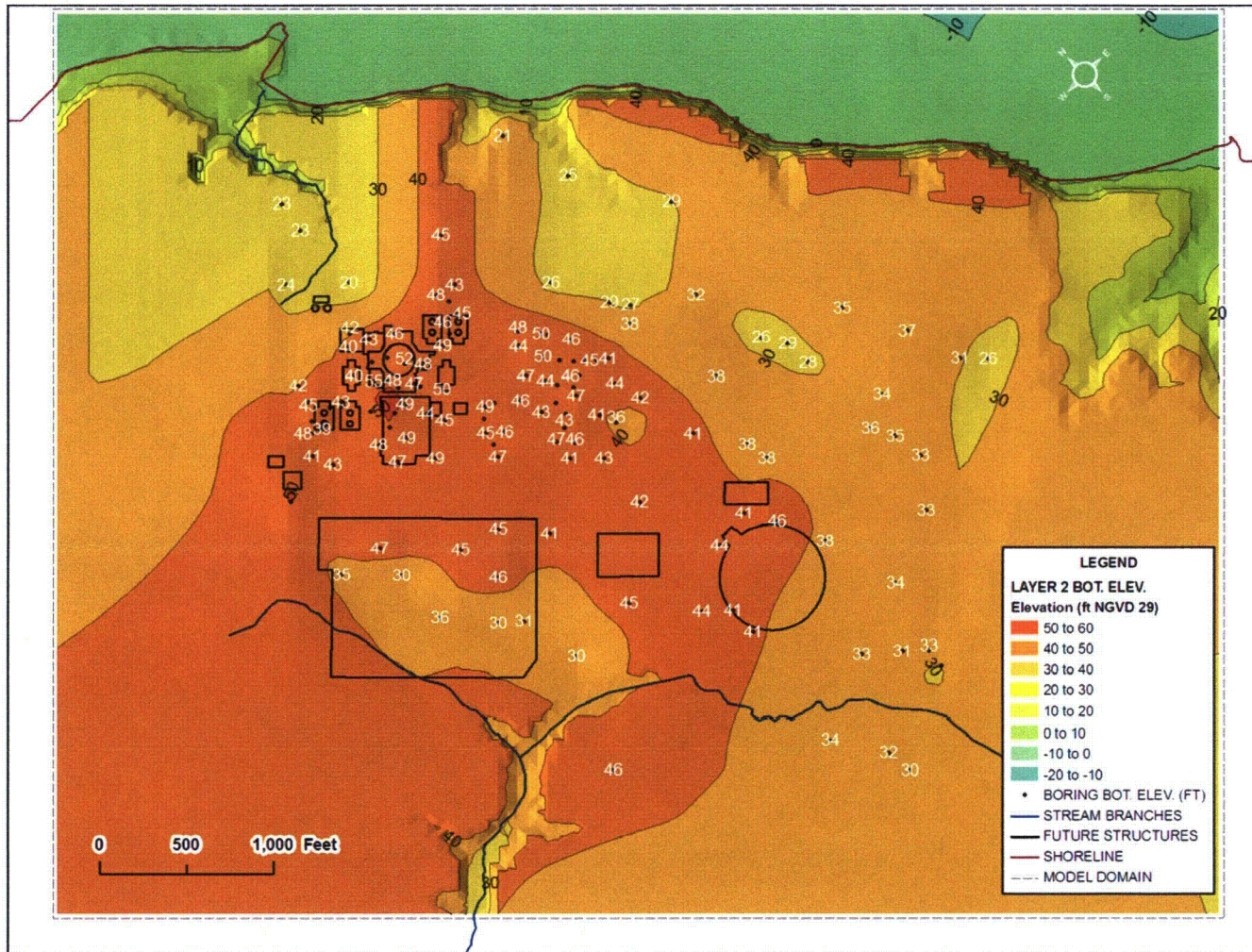
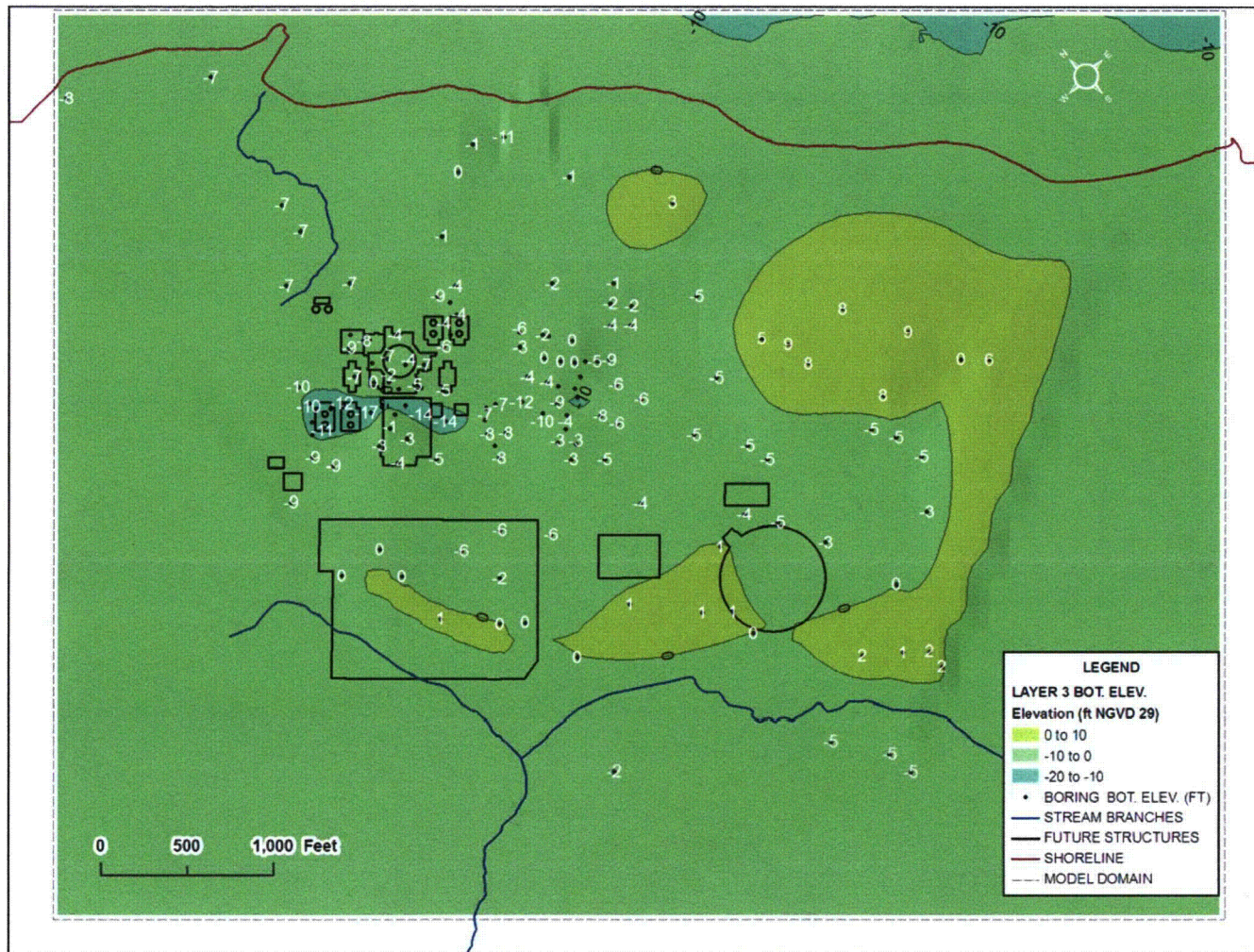


Figure-13 Elevation contours of the bottom of model layer 2 and boring data elevations.



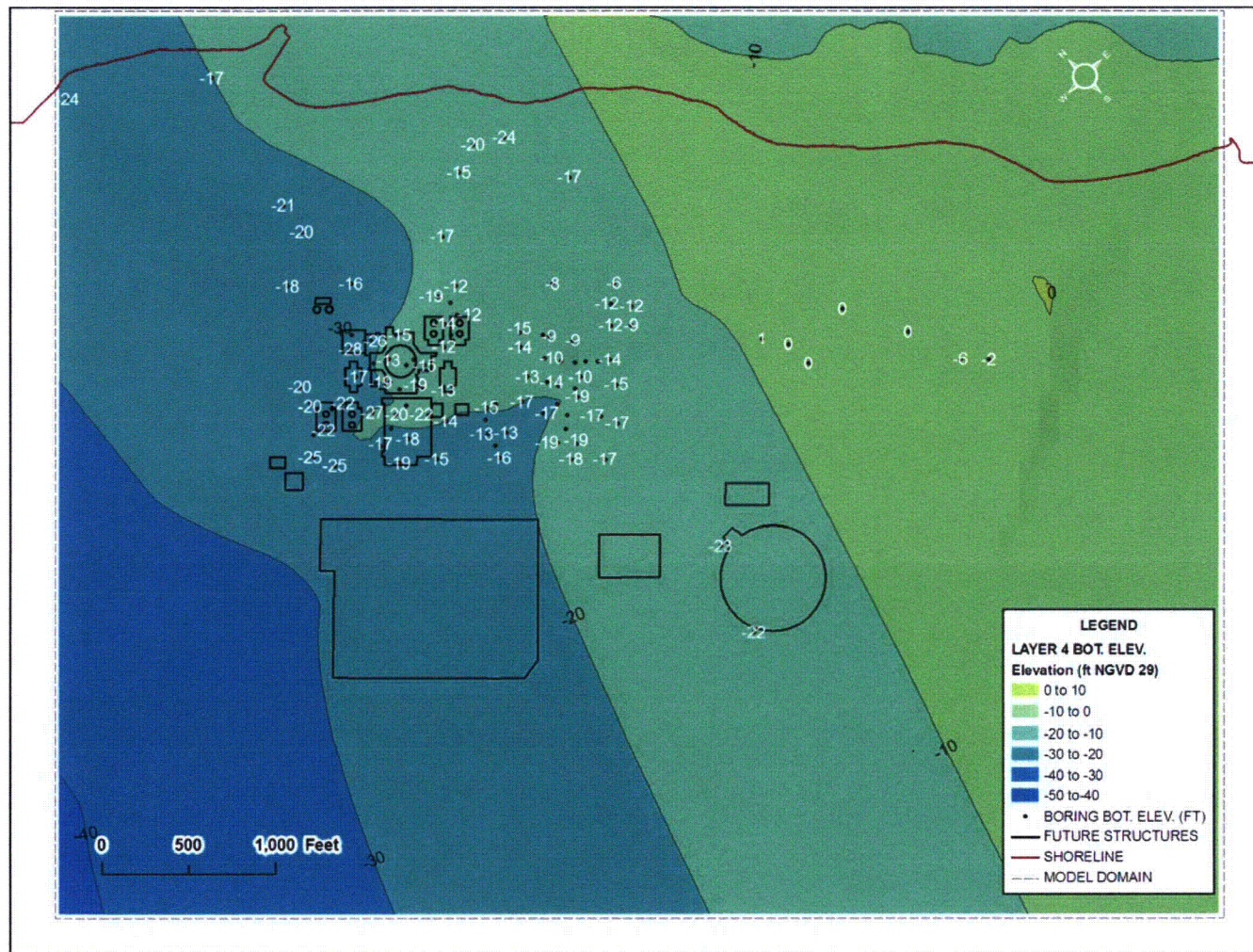
Note: North arrow is shown relative to Maryland State Plane (NAD27) projection rather than the model grid

Figure-14 Elevation contours of the bottom of model layer 3 and boring data elevations.



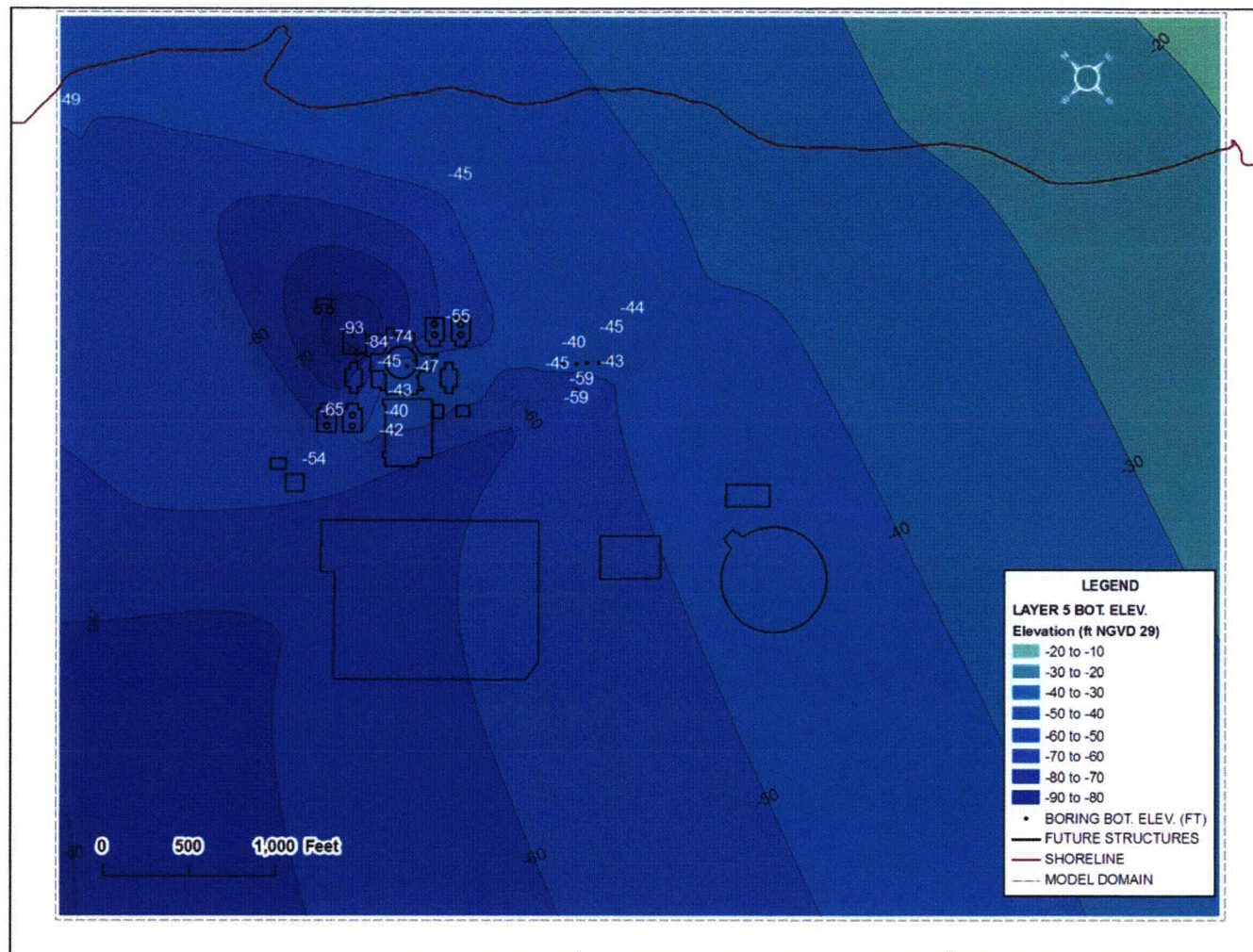
Note: North arrow is shown relative to Maryland State Plane (NAD27) projection rather than the model grid

Figure-15 Elevation contours of the bottom of model layer 4 and boring data elevations.



Note: North arrow is shown relative to Maryland State Plane (NAD27) projection rather than the model grid

Figure-16 Elevation contours of the bottom of model layer 5 and boring data elevations.



Note: North arrow is shown relative to Maryland State Plane (NAD27) projection rather than the model grid

Figure-17 Hydrostratigraphic units represented in layer 1 of the groundwater model.

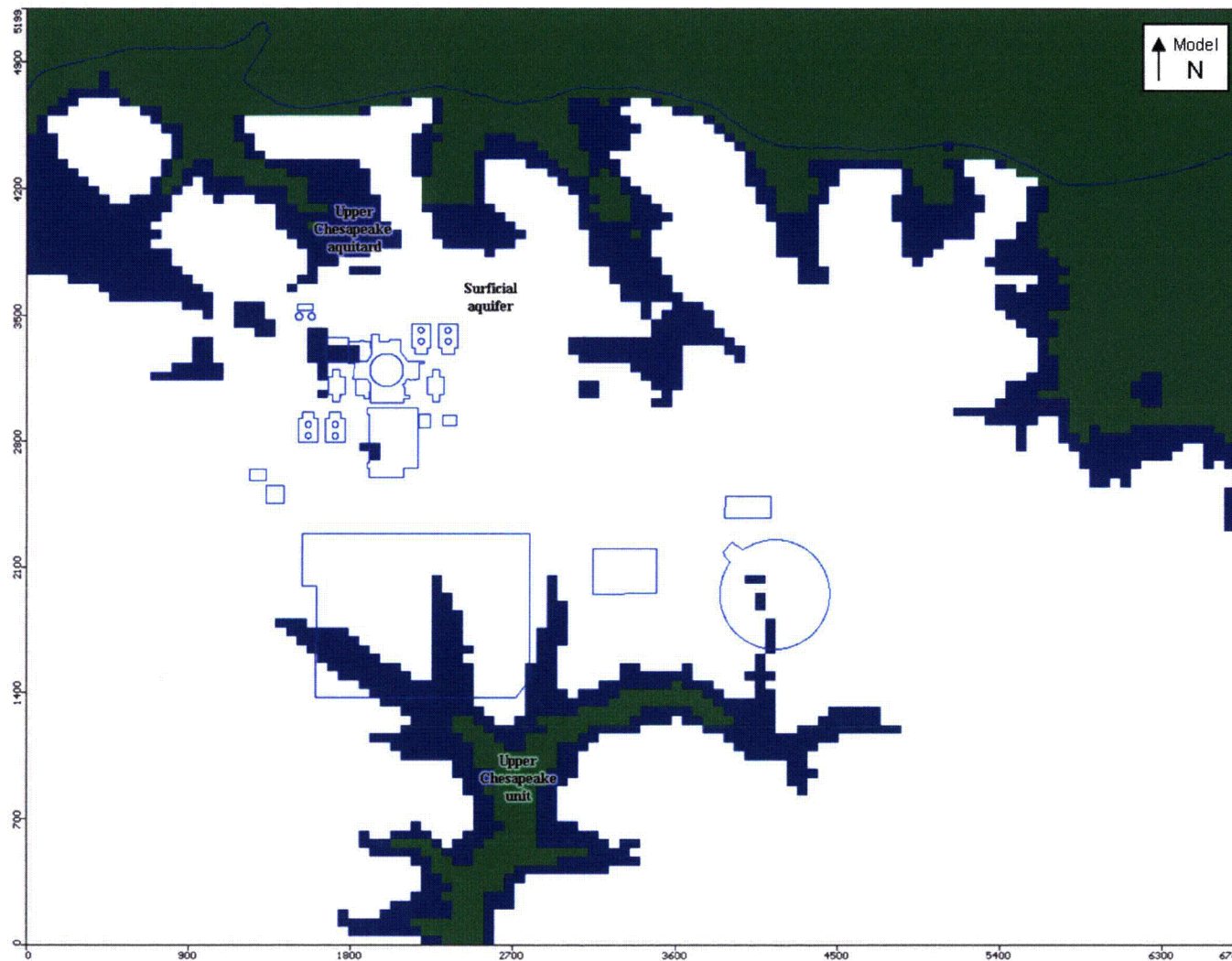


Figure-18 Hydrostratigraphic units represented in layer 2 of the groundwater model.

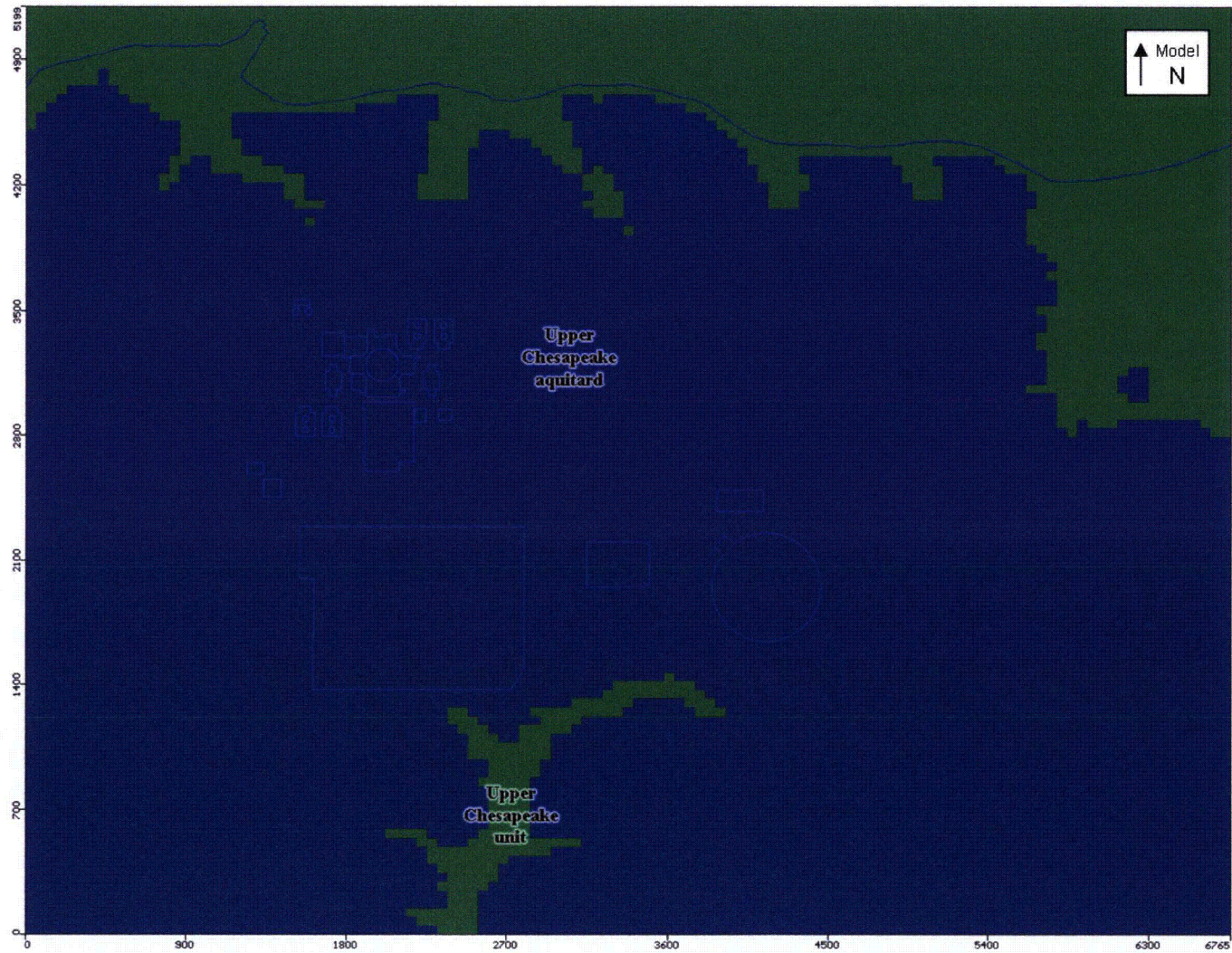


Figure-19 Groundwater recharge zones used in the model.

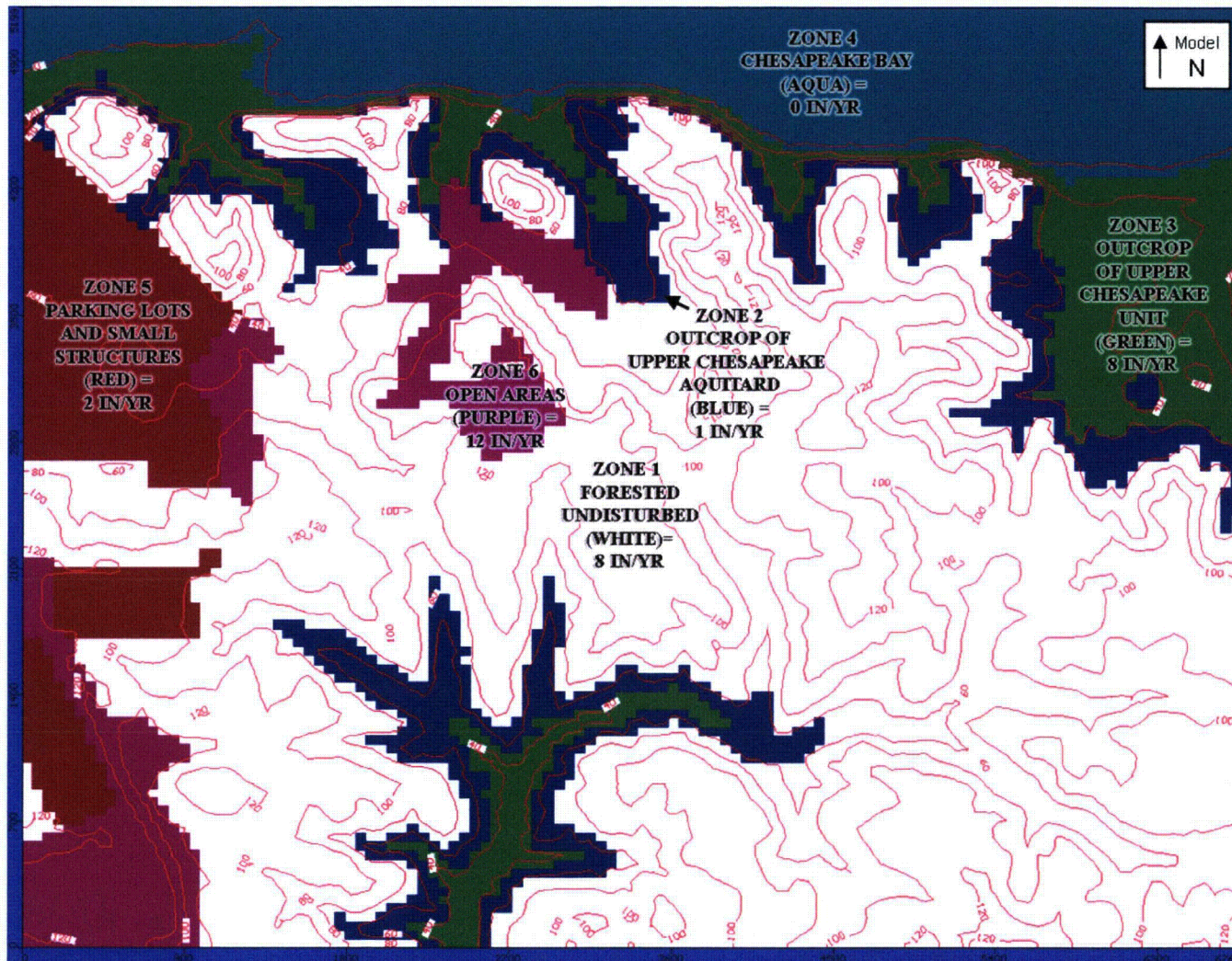
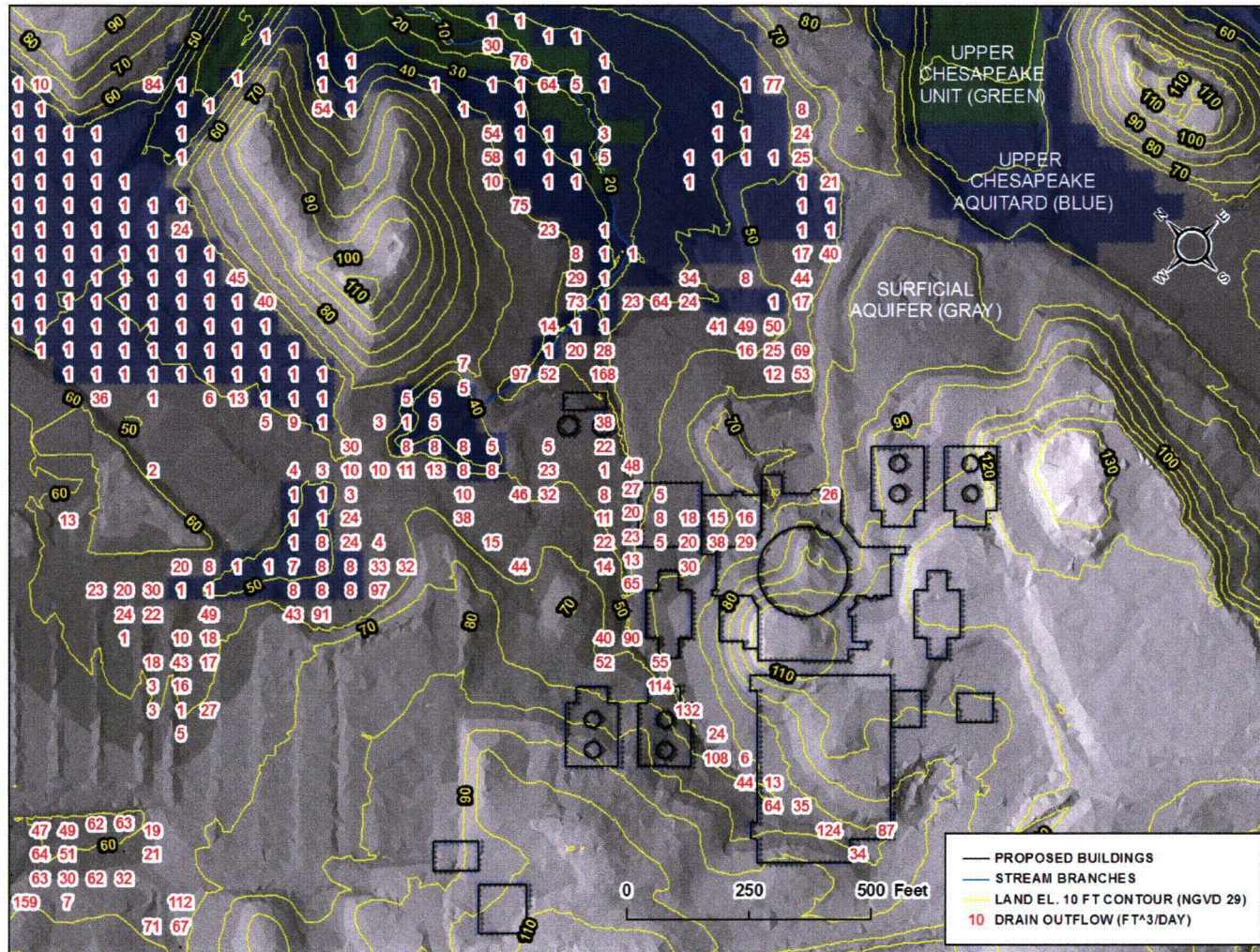


Figure-20 Drain outflow extracted from Calibration 1, layer 1 shown along with topography.



Notes: Outflow values, in red, are shown for drain cells that have a calculated outflow exceeding 0.5 ft<sup>3</sup>/day. North arrow is shown relative to Maryland State Plane (NAD27) projection rather than the plant grid.



Figure-21 Simulated potentiometric levels and residuals in model layer 1 for Calibration 1 (model CCCNP-11-ZB).

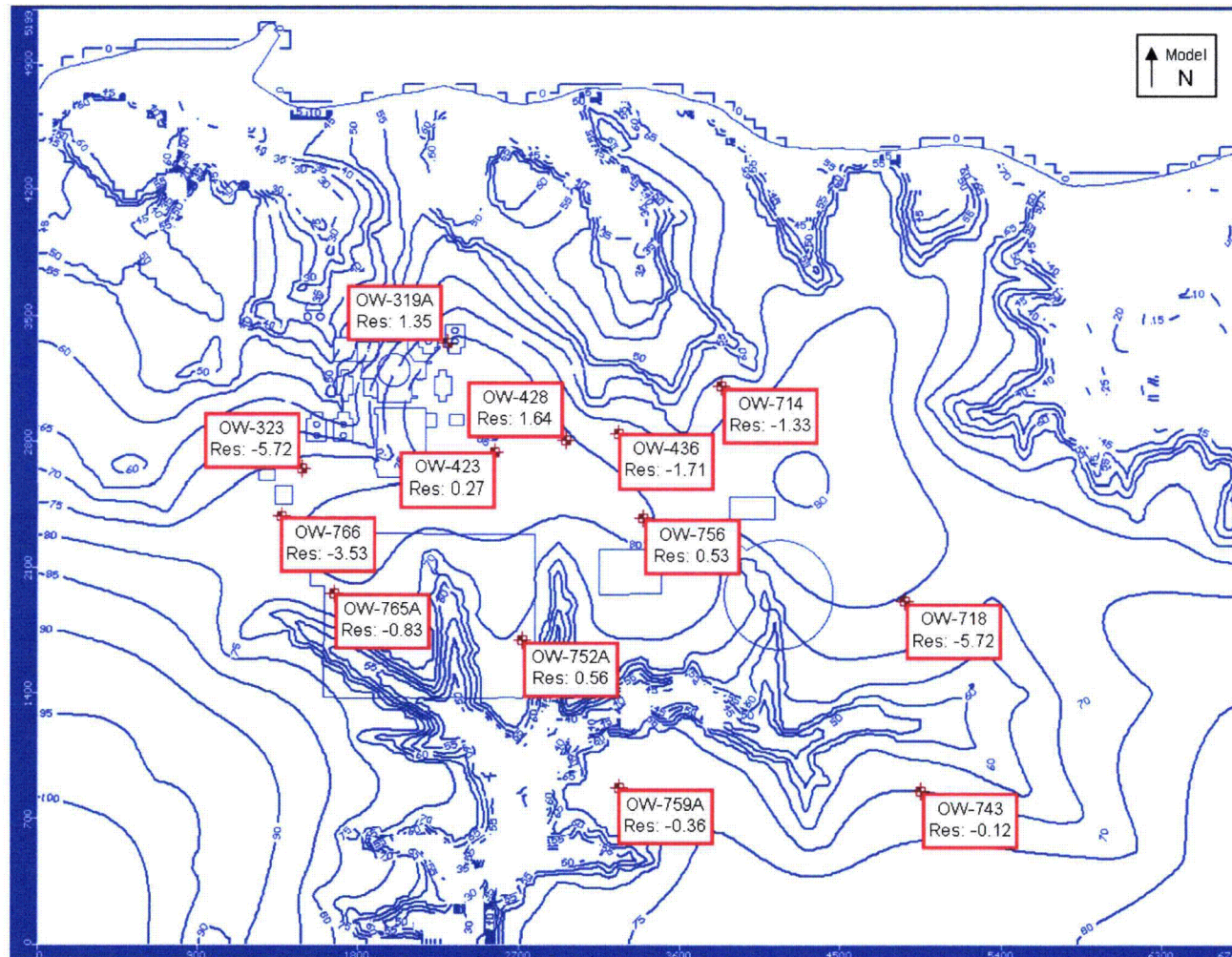


Figure-22 Simulated potentiometric levels and residuals in model layer 3 for Calibration 1 (model CCCNP-11-ZB).

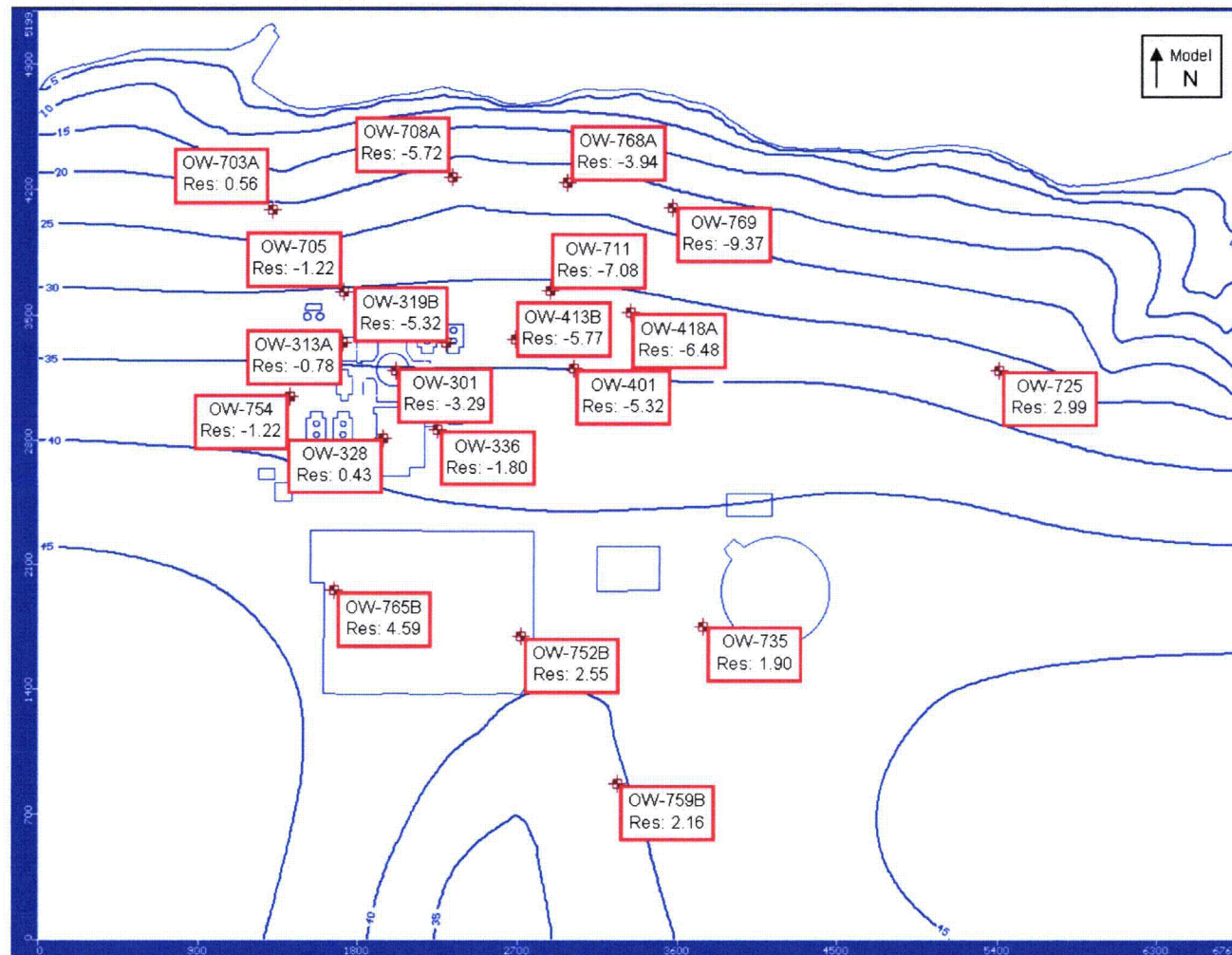


Figure-23 Simulated potentiometric levels and residuals in model layer 5 for Calibration 1 (model CCCNP-11-ZB).

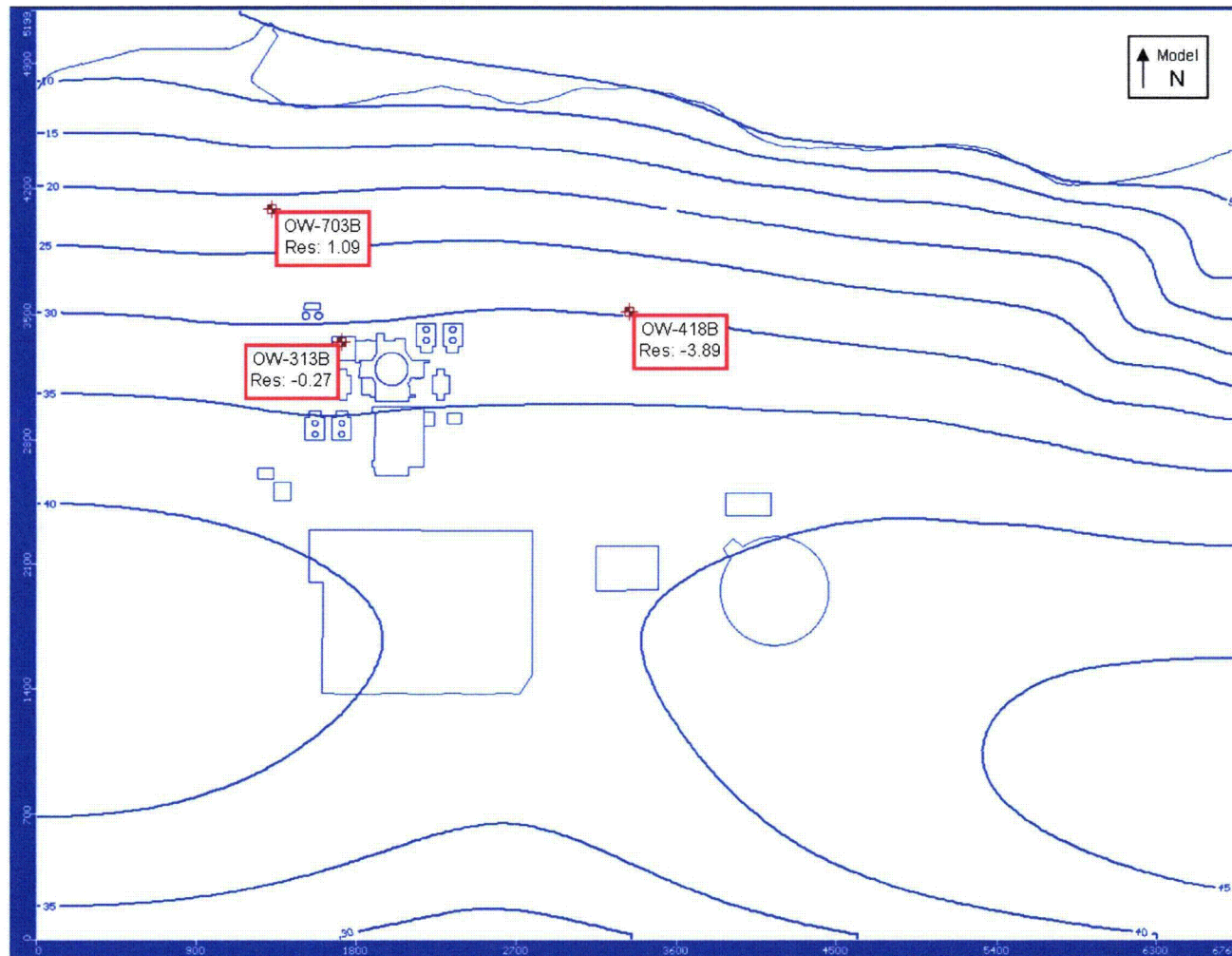


Figure-24 Computed vs. measured values at observation wells and calibration statistics for Calibration 1 (model CCCNP-11-ZB).

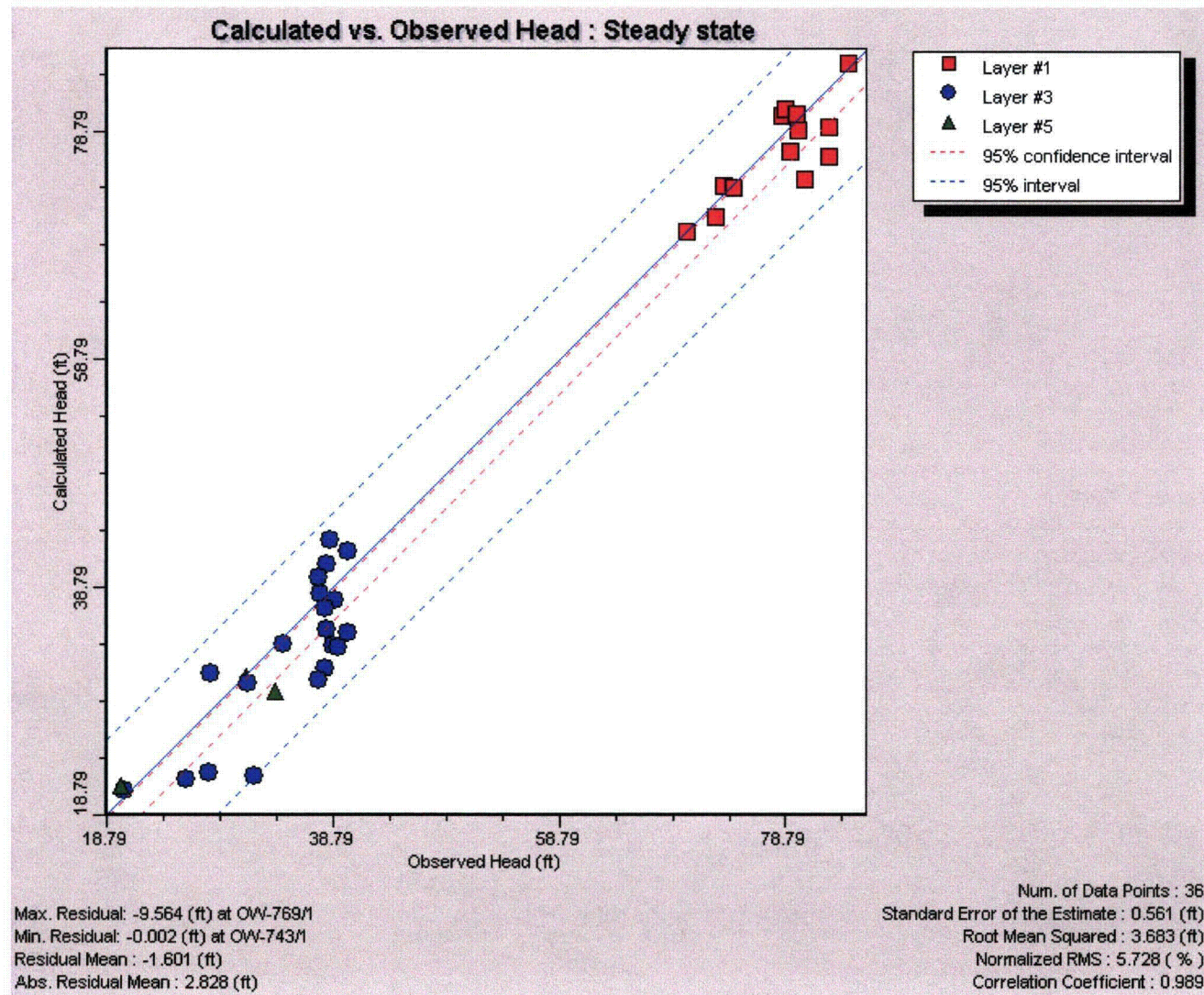


Figure-25 Hydraulic conductivity distribution in layer 3 for alternative model calibration (model CCCNP-12-ZB).

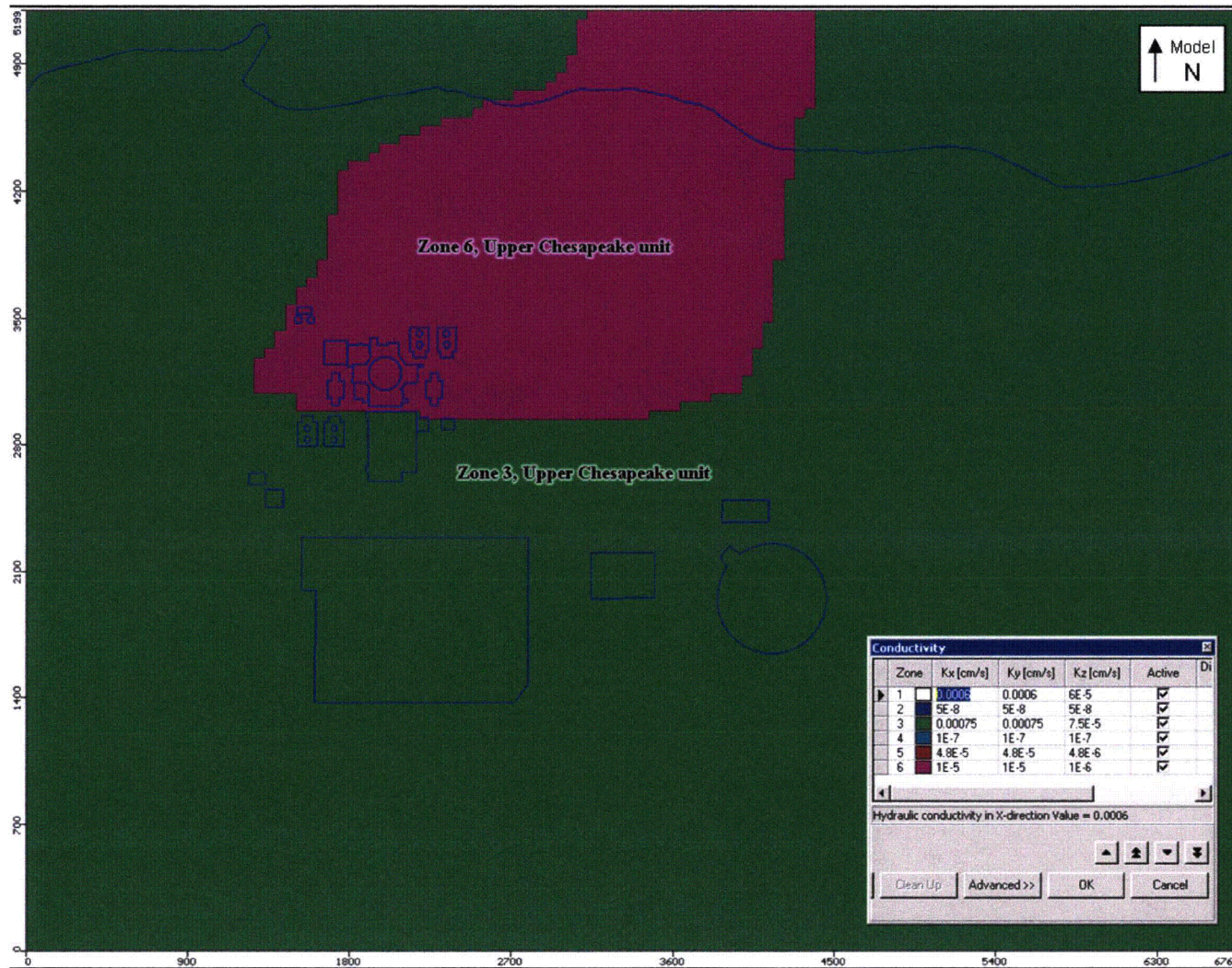


Figure-26 Simulated potentiometric levels and residuals in layer 1 for Calibration 2 (model CCCNP-12-ZB).

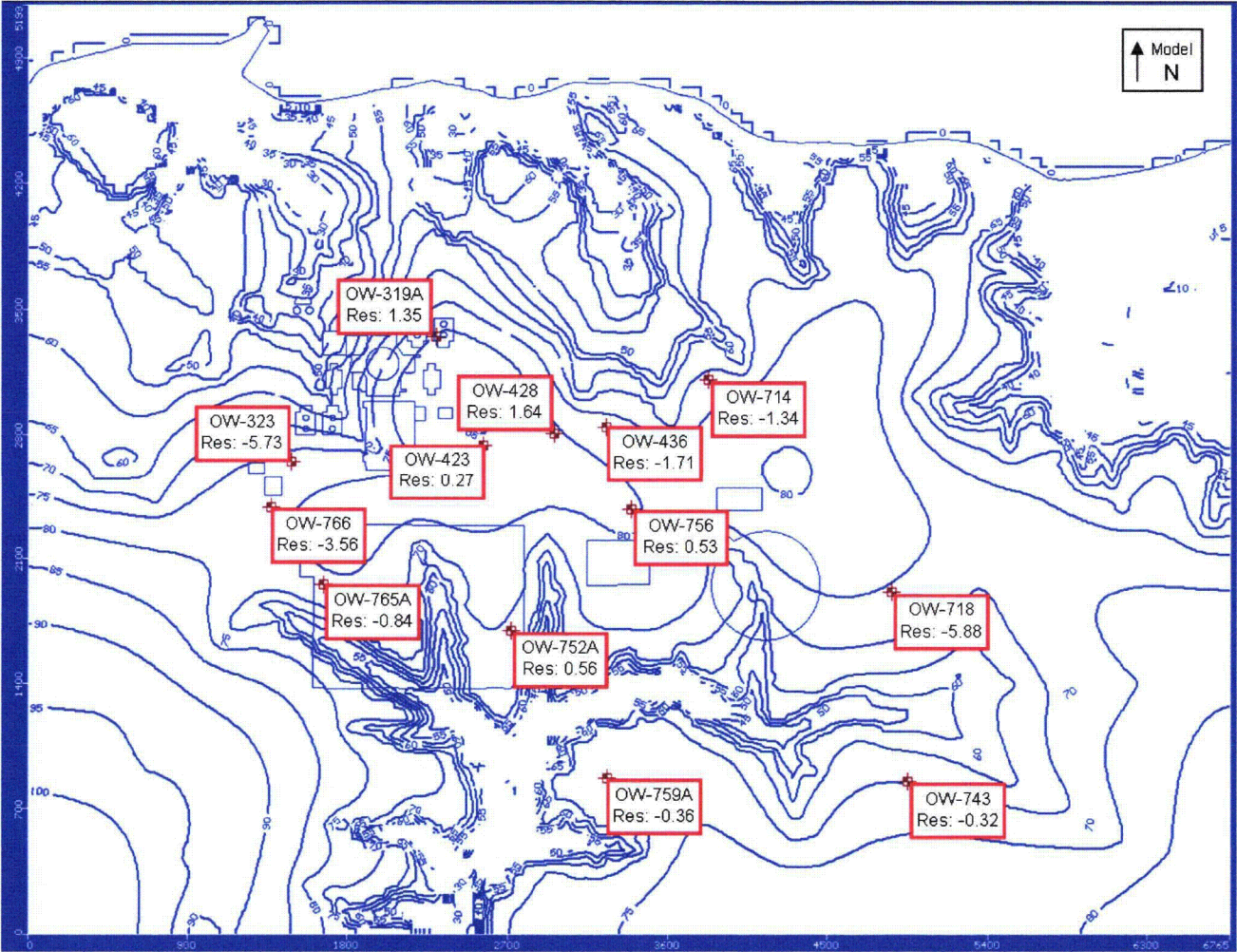


Figure-27 Simulated potentiometric levels and residuals in model layer 3 for Calibration 2 (model CCCNP-12-ZB).

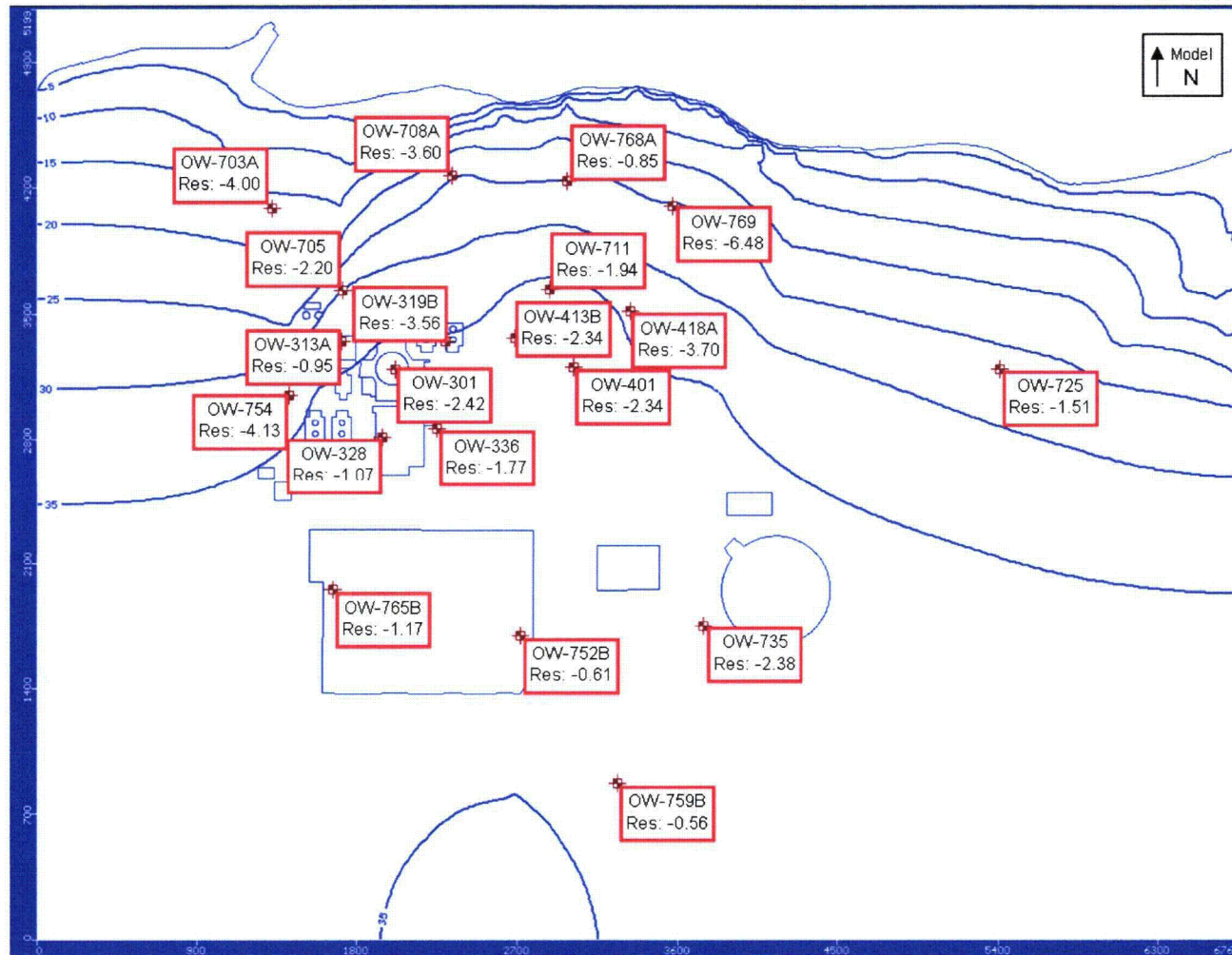


Figure-28 Simulated potentiometric levels and residuals in model layer 5 for Calibration 2 (model CCCNP-12-ZB).

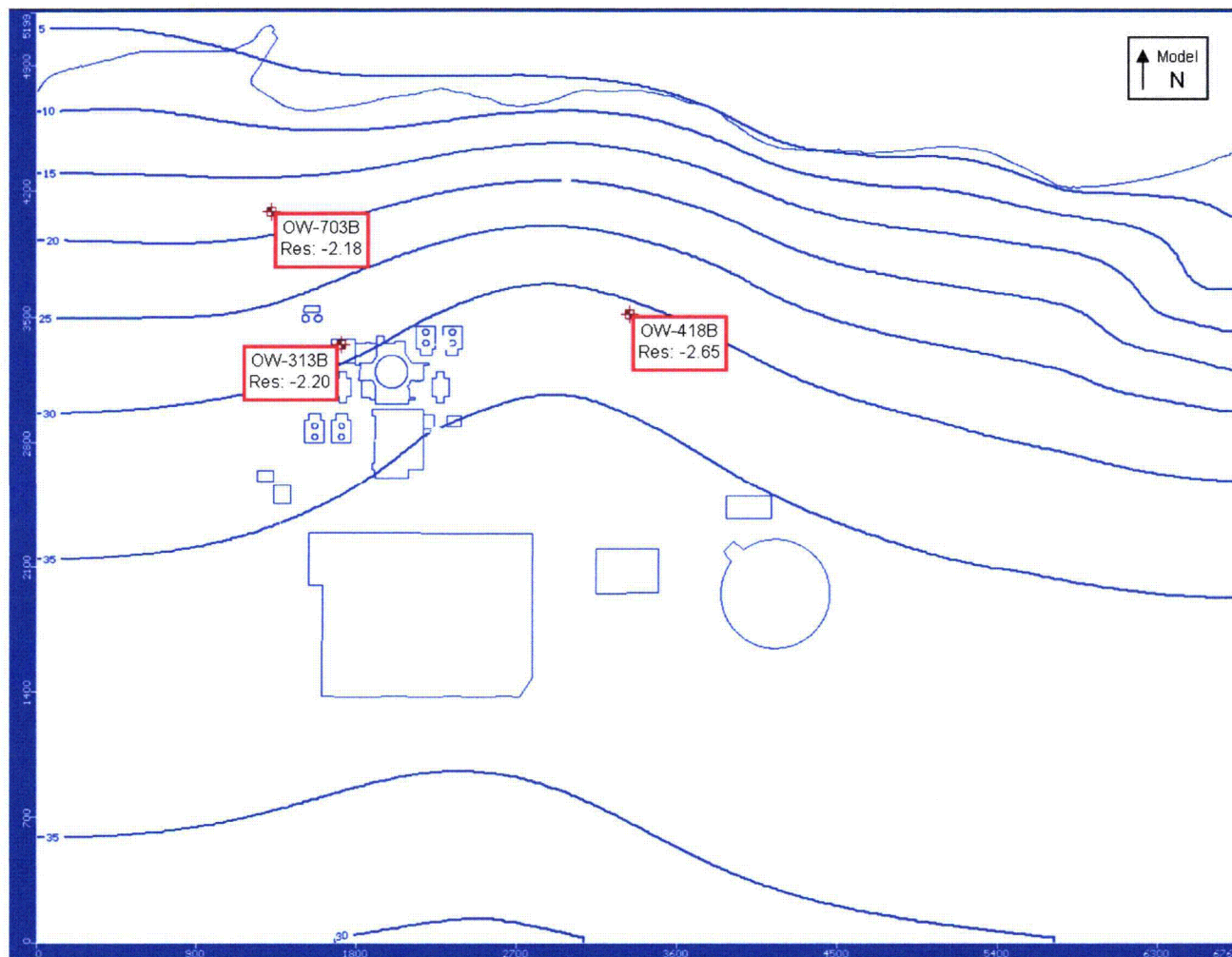




Figure-29 Computed vs. measured values at observation wells and calibration statistics for Calibration 2 (model CCCNP-12-ZB).

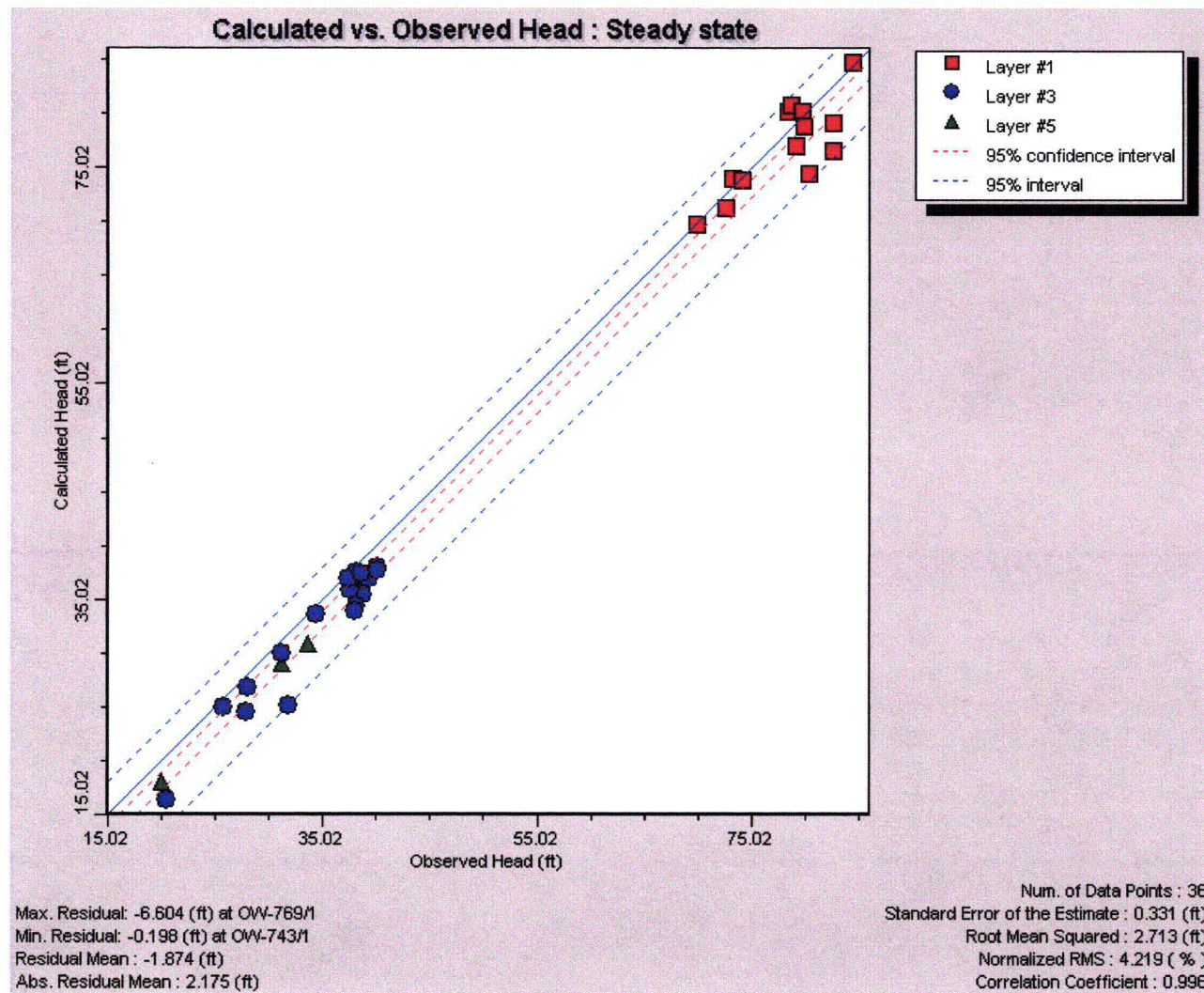


Figure-30 Computed vs. measured values at observation wells and calibration statistics for Calibration 3, accounting for leakage through the model bottom (model CCCNP-13-ZB).

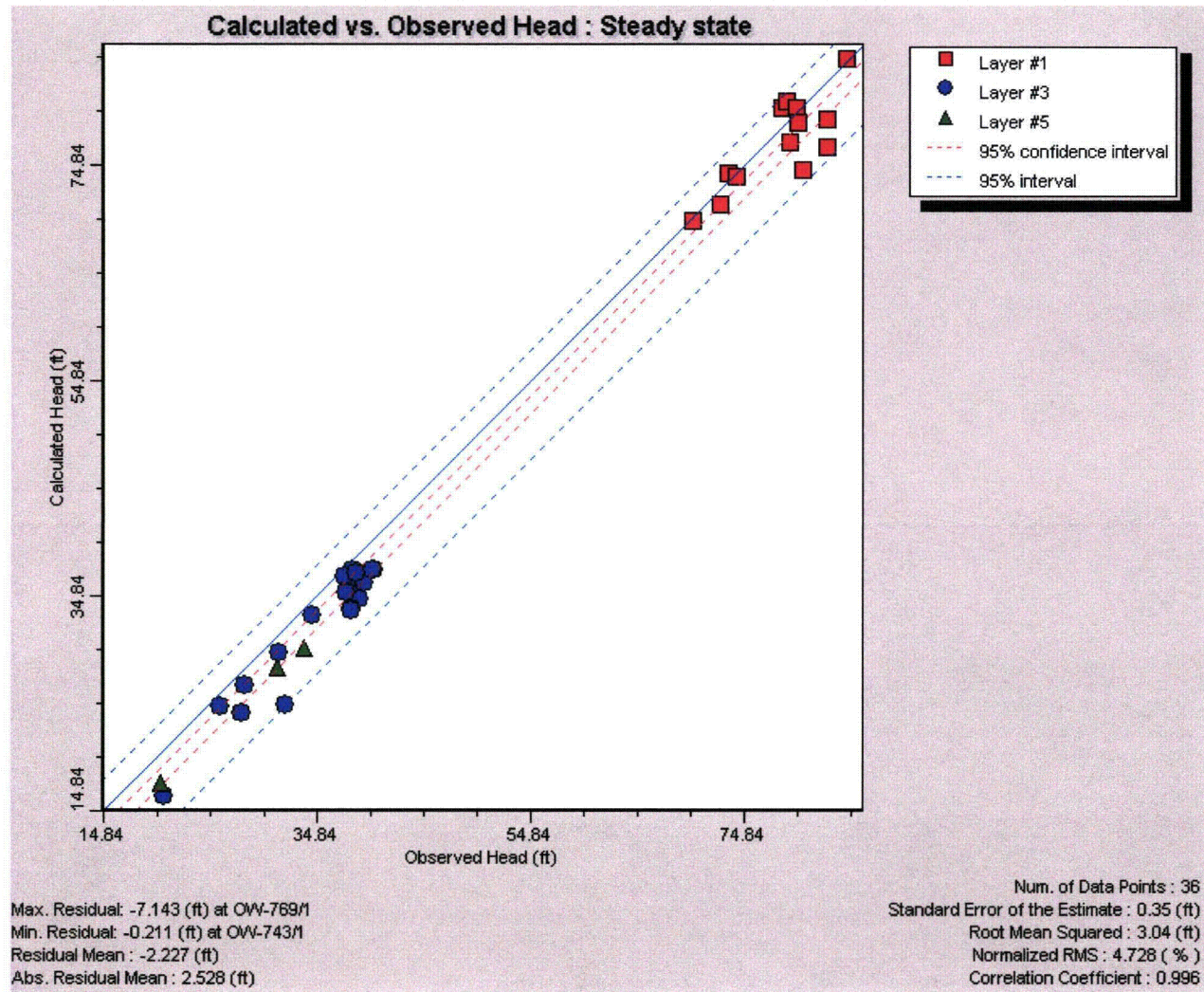
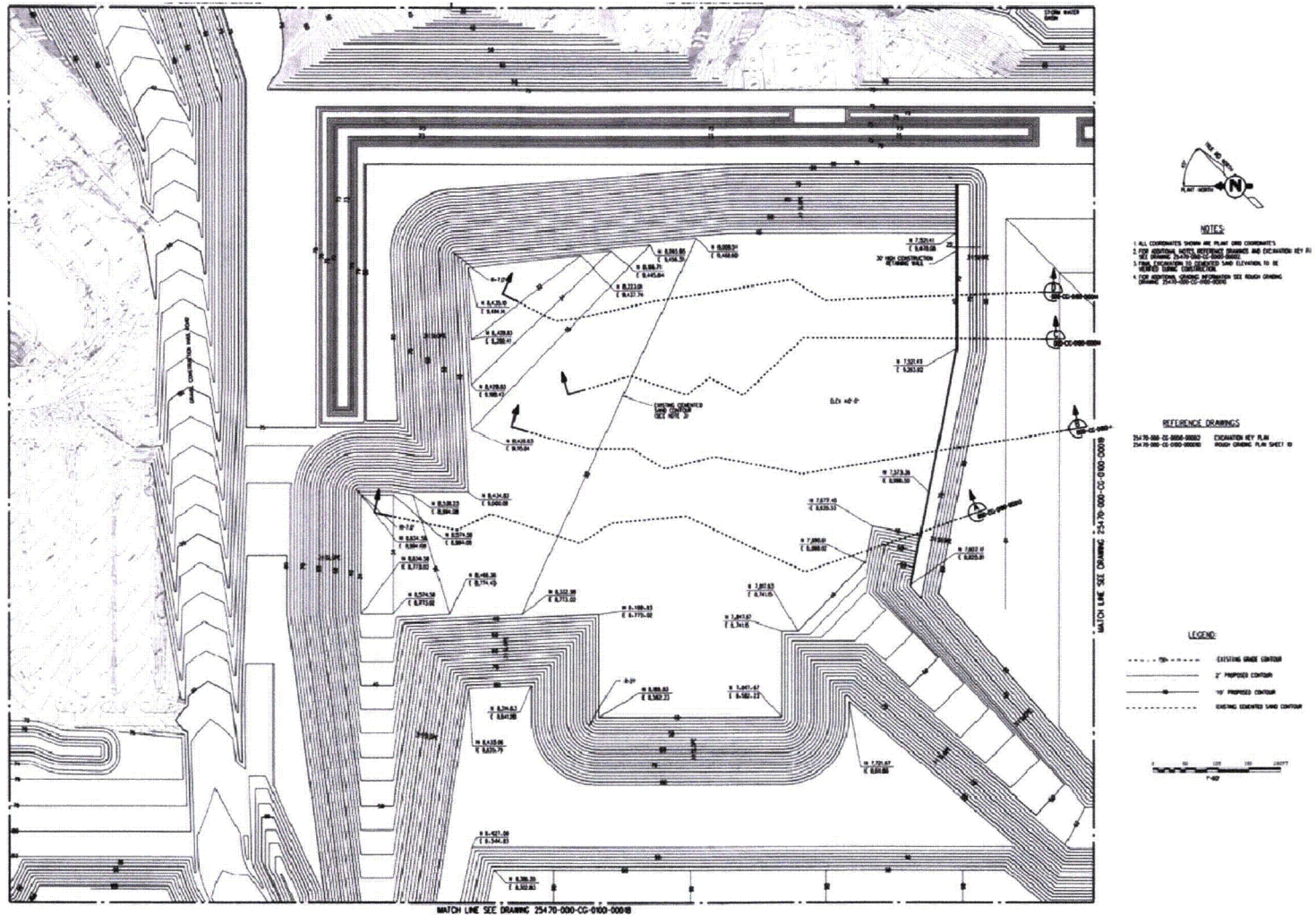




Figure-32 Excavation plan for the power block area of Unit 3



Note: North arrow is shown relative to plant grid rather than the model grid.

Figure-33 Topography of post-construction groundwater flow model domain

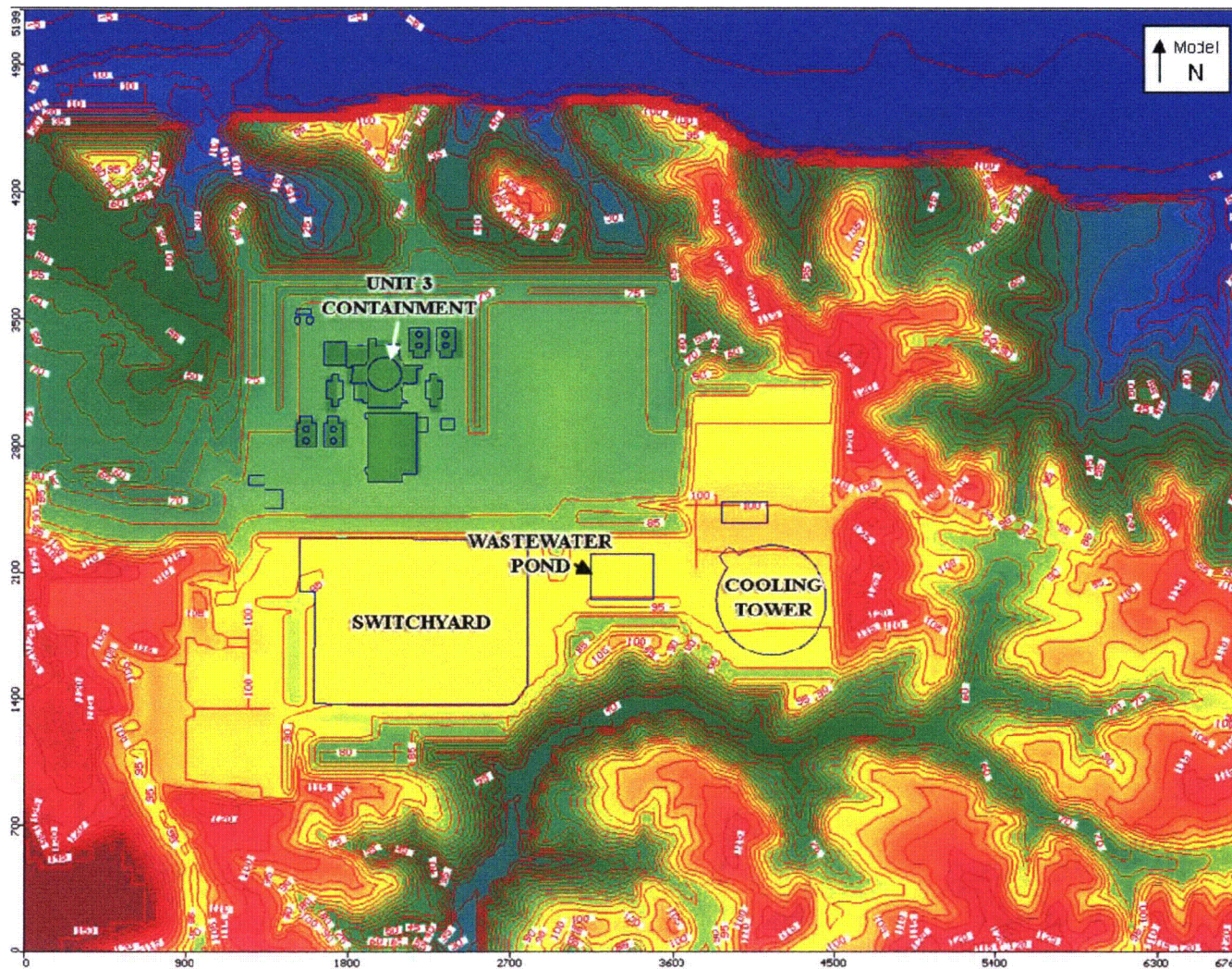


Figure-34 Hydraulic conductivity zones in layer 1 of post-construction groundwater flow model.

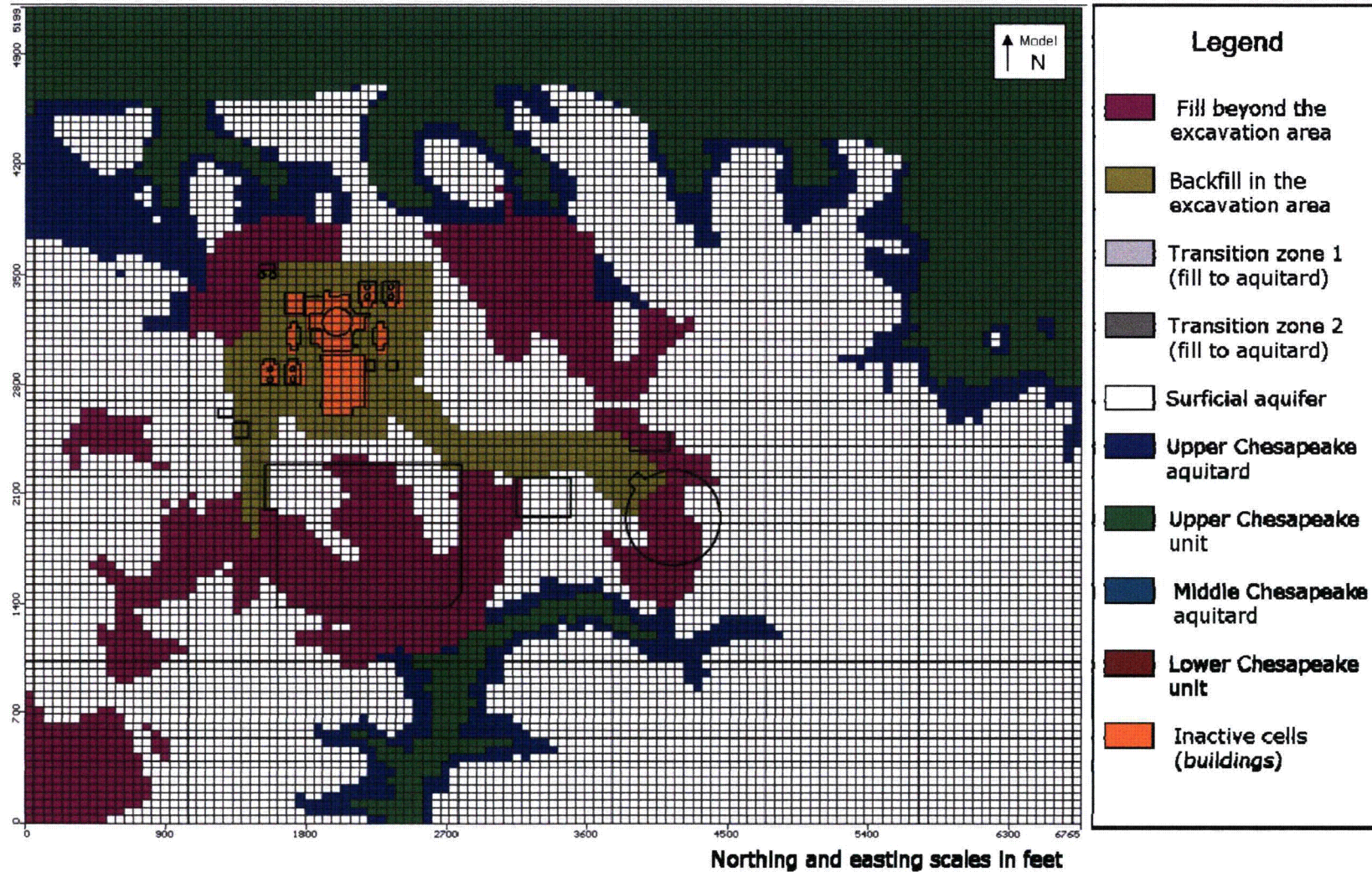


Figure-35 Hydraulic conductivity zones in the power block region of layer 2 of post-construction models.

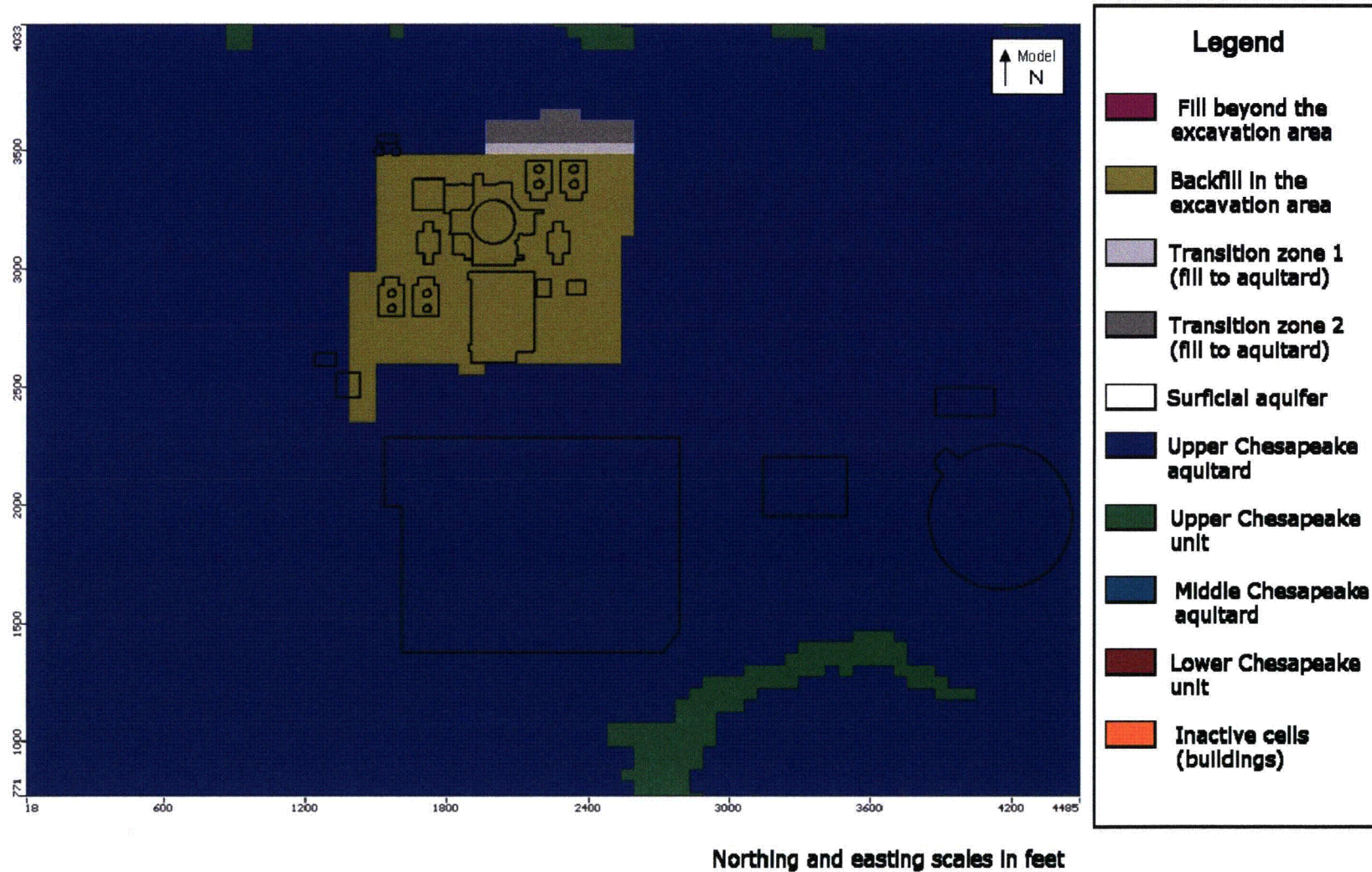


Figure-36 Hydraulic conductivity zones in layer 2 of post-construction groundwater flow model.

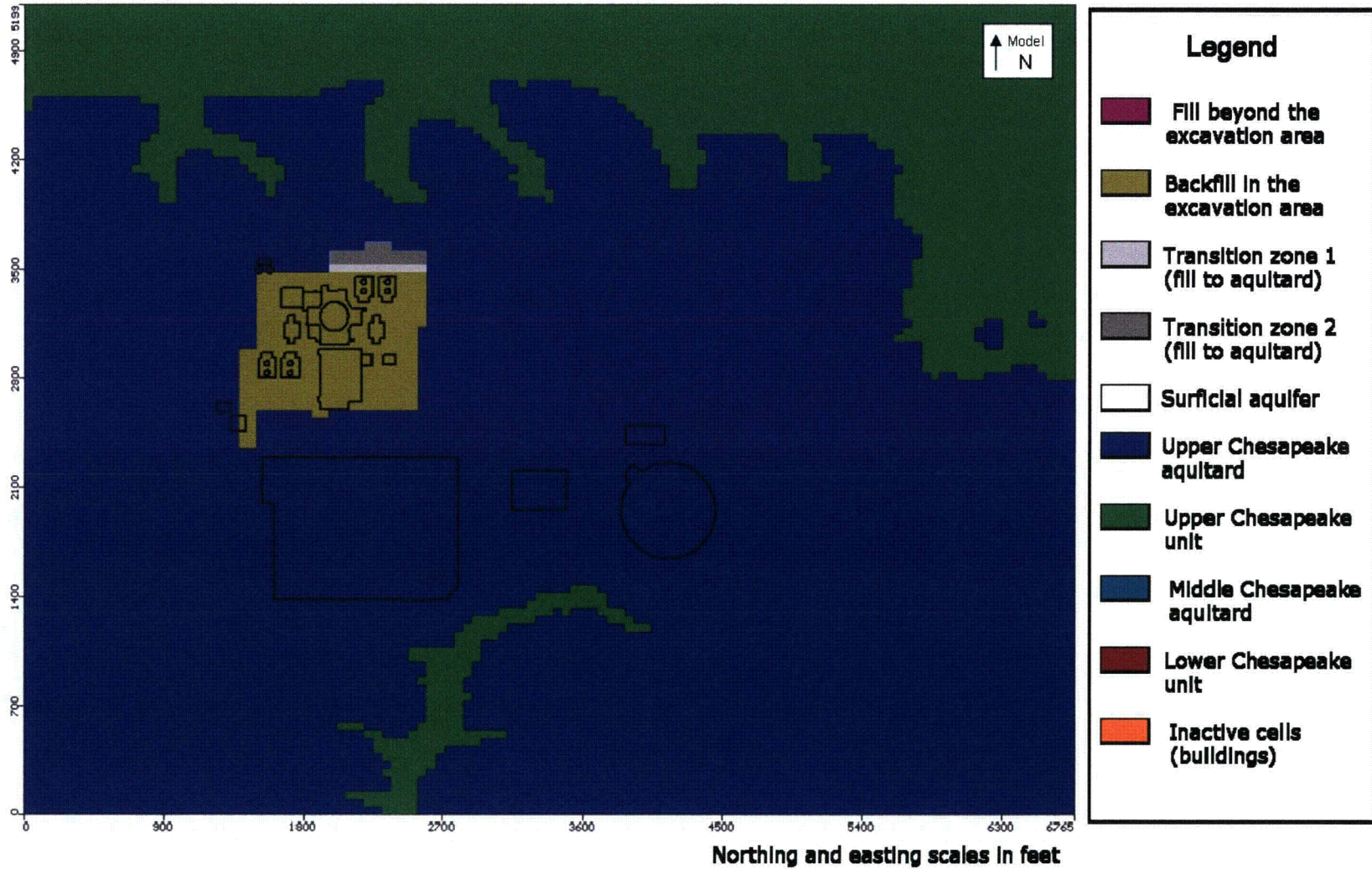




Figure-37 Recharge zones in post-construction groundwater flow model.

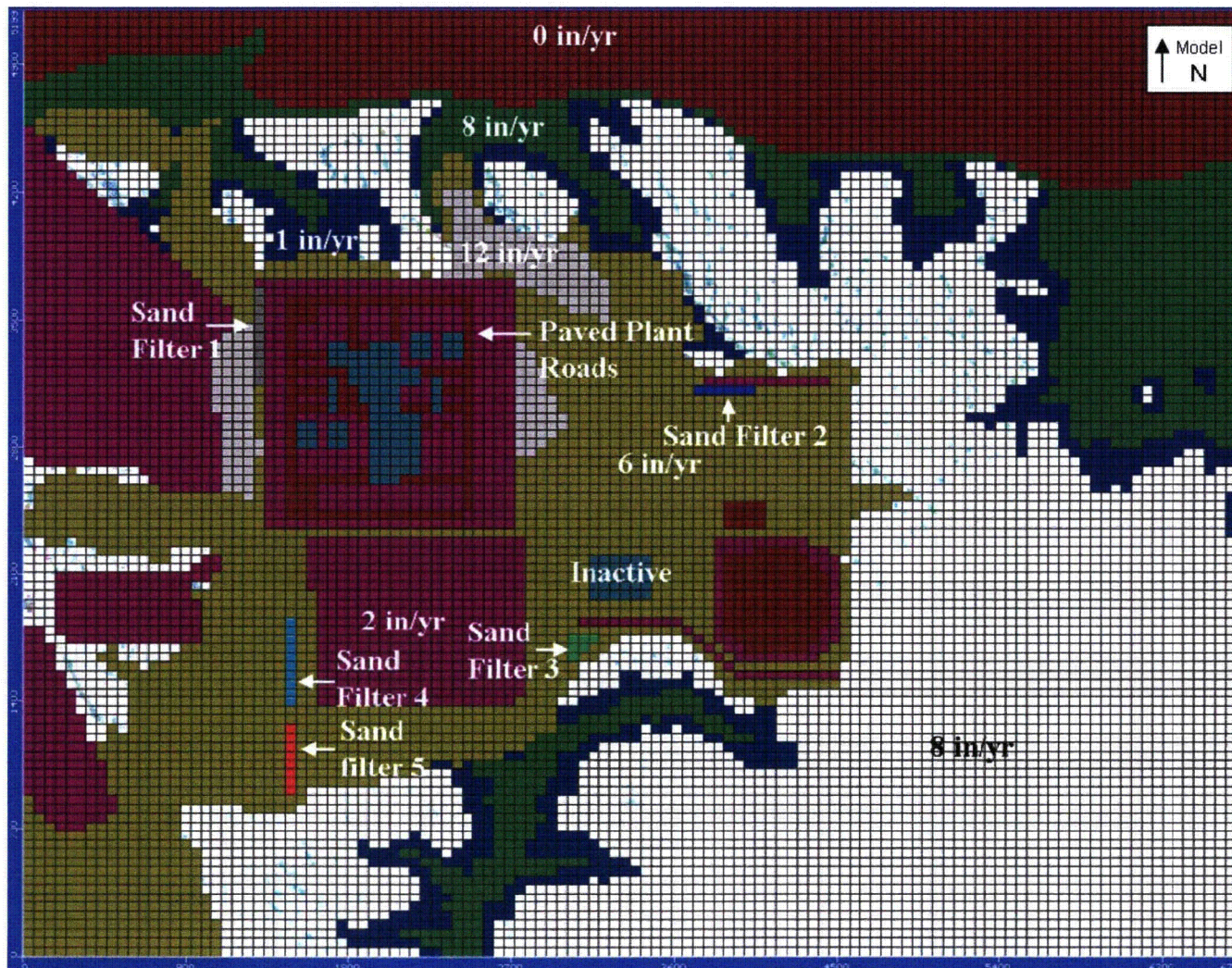
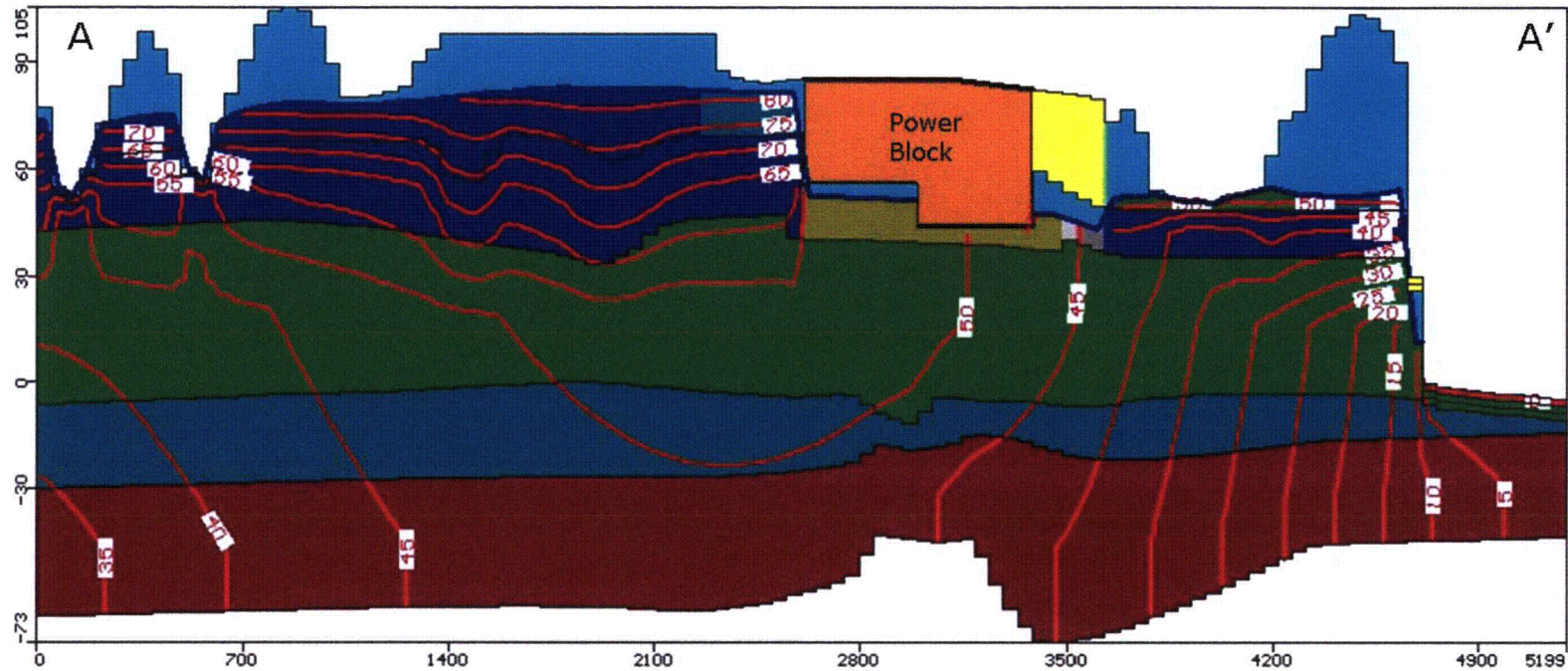


Figure-38 Water table and equipotentials on a south-north cross section (A-A') through the containment building for Run 1. The location of section A-A' is shown in Figure-42.



**Legend**

Vertical and horizontal scales in feet

Surficial aquifer	Lower Chesapeake unit	Fill beyond the excavation area
Upper Chesapeake aquitard	Backfill in the excavation area	Materials above the water table
Upper Chesapeake unit	Transition zone 1 (fill to aquitard)	Dry cells
Middle Chesapeake aquitard	Transition zone 2 (fill to aquitard)	Inactive cells (buildings)
Piezometric contour		

Figure-39 Water table and equipotentials on a section B-B' through the containment building for Run 1. The location of section B-B' is shown in Figure-42.

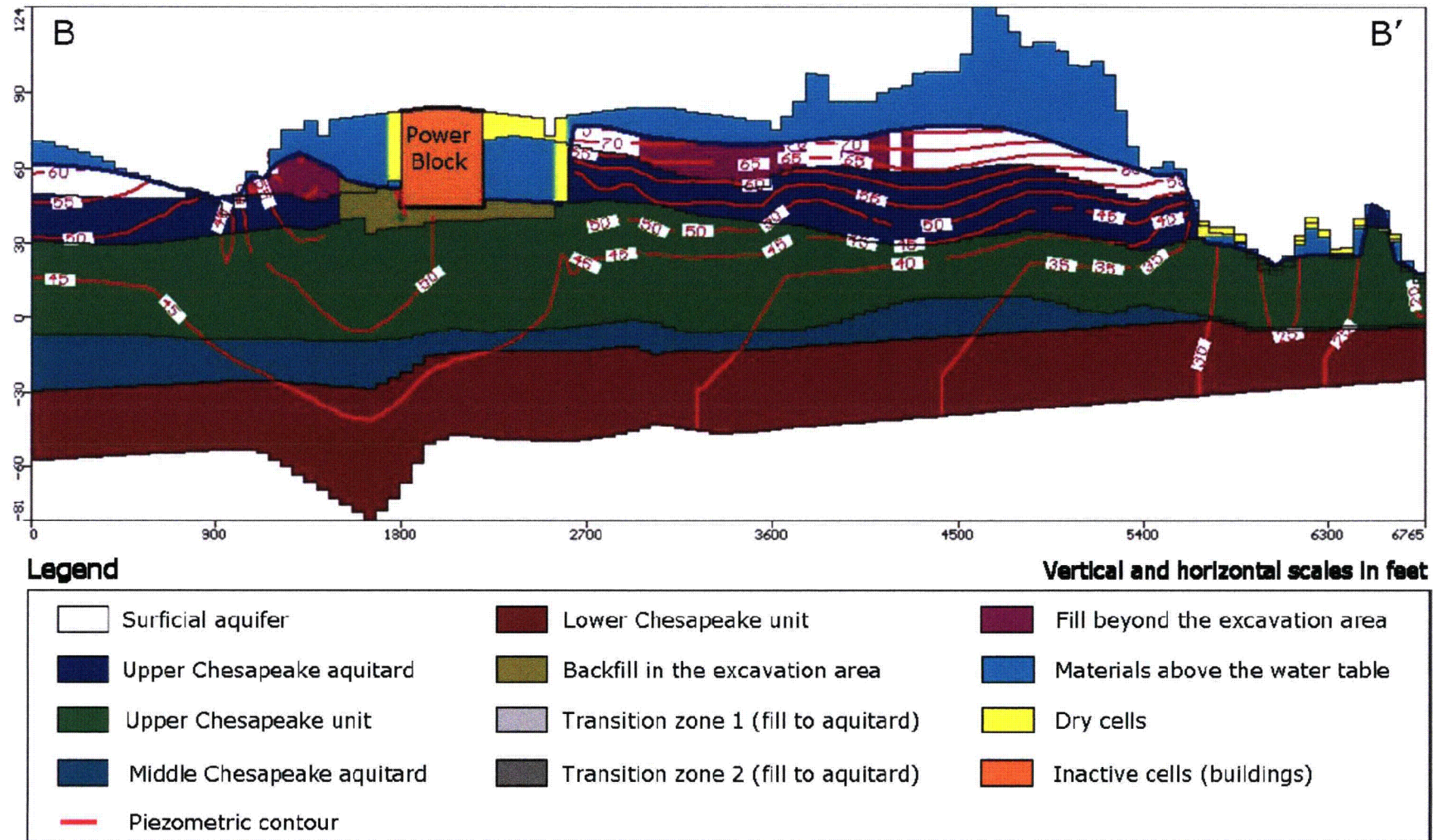


Figure-40 Zoom-in view of water table and equipotentials from Run 1 on column 35 (see Figure-38 for full column view).

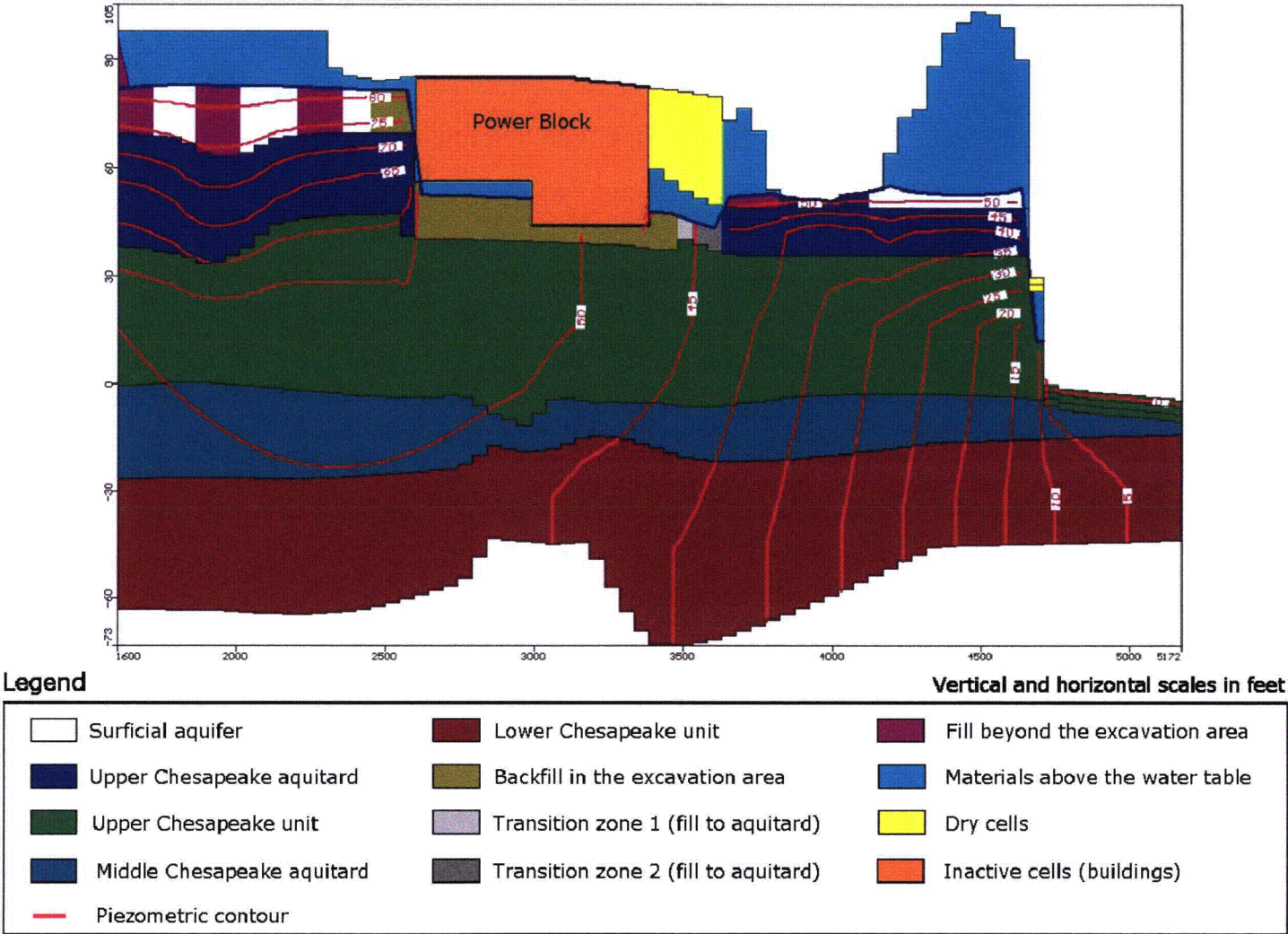


Figure-41 Zoom-in view of water table and equipotentials from Run 1 on row 41 (see Figure-39 for full row view).

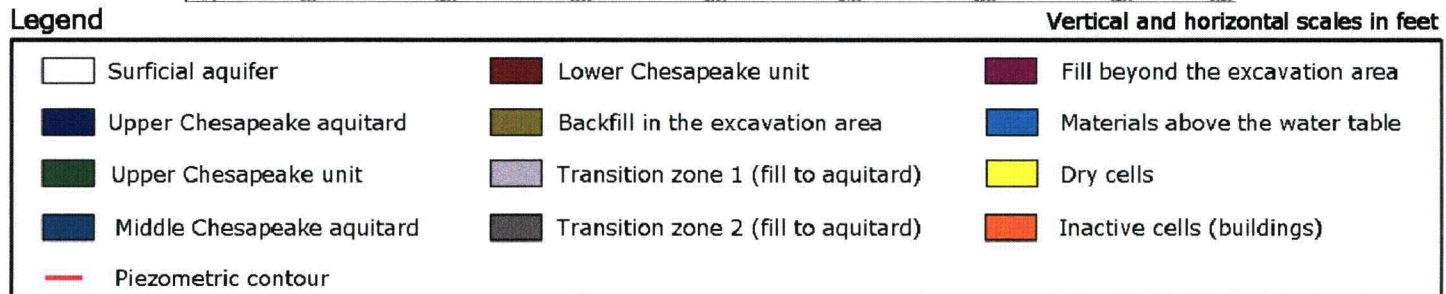
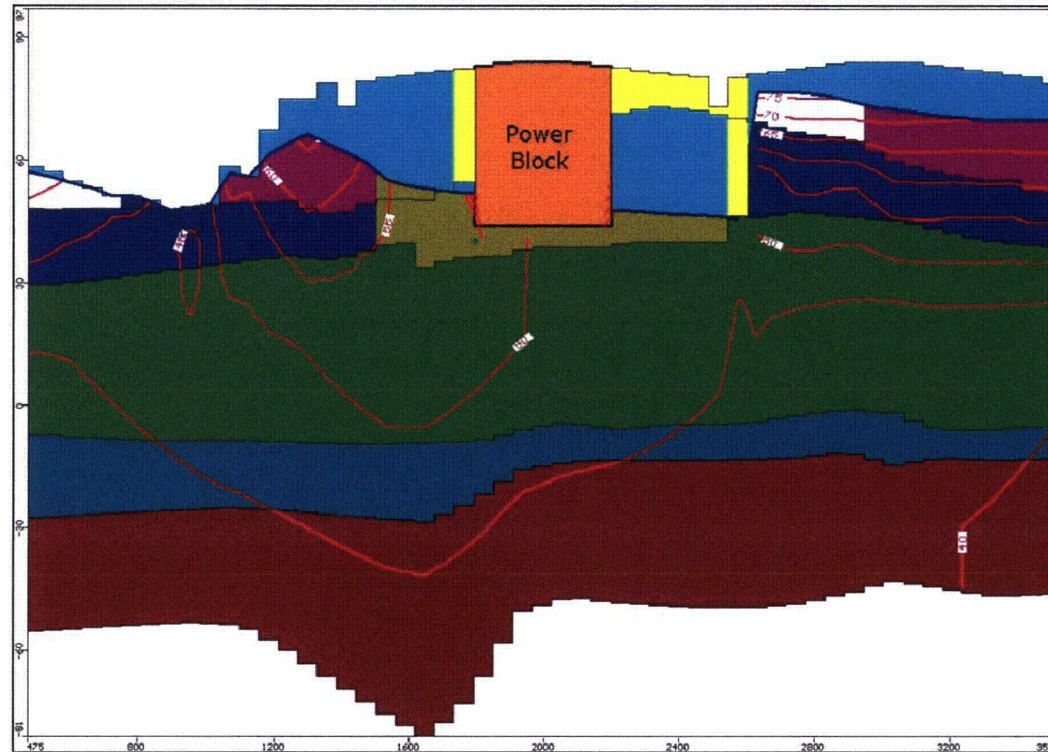


Figure-42 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 1.

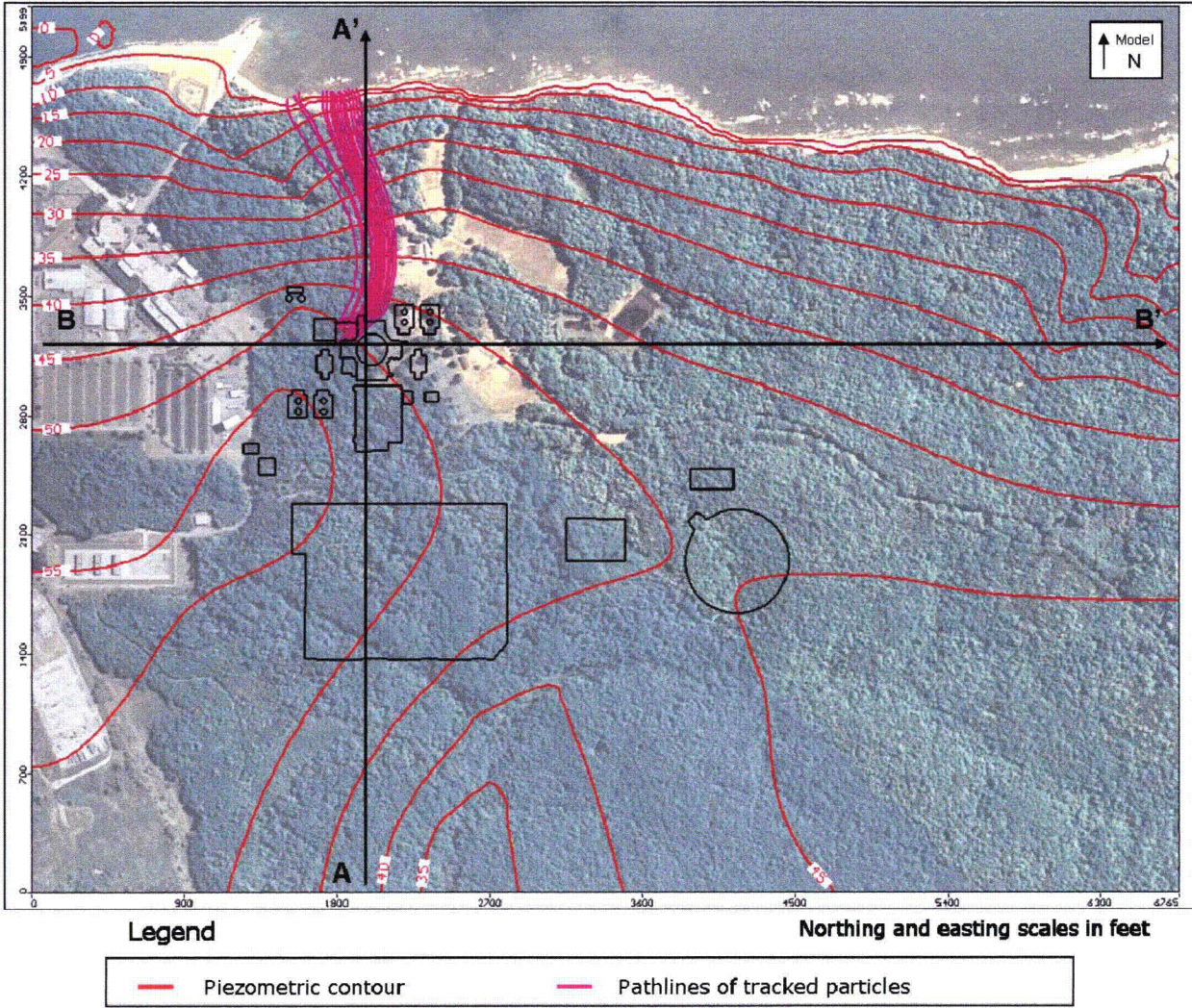


Figure-43 Water table elevation at the Unit 3 site for Run 1

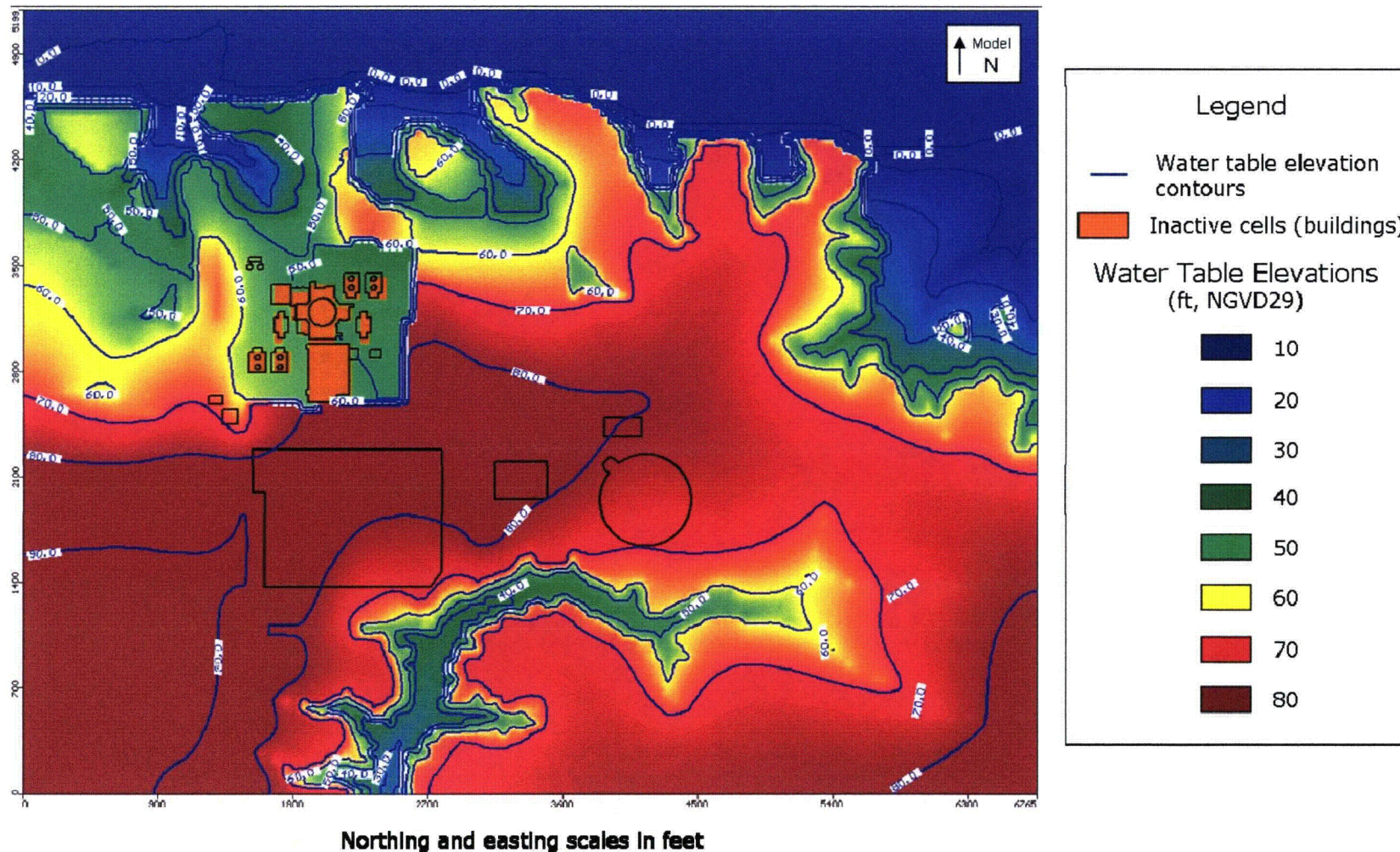


Figure-44 Location of head monitoring points given in Table-13 and Table-14 (Point A=Row 39, Column 32; Point B=Row 38, Column 36; Point C=Row 41, Column 38; Point D=Row 44, Column 36; Point E=Row 44, Column 33; and Point F=Row 42, Column 32).

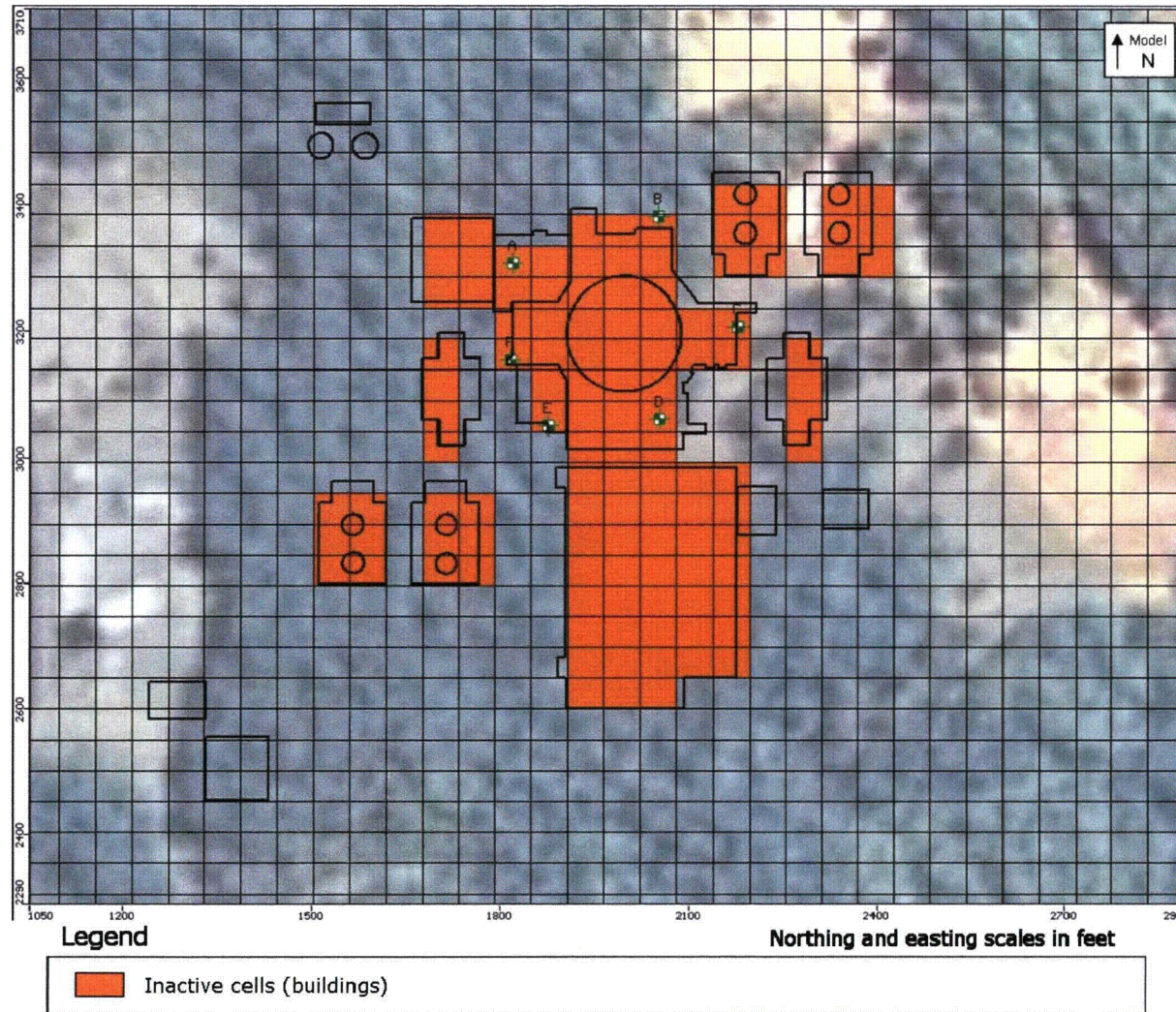




Figure-45 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 2.

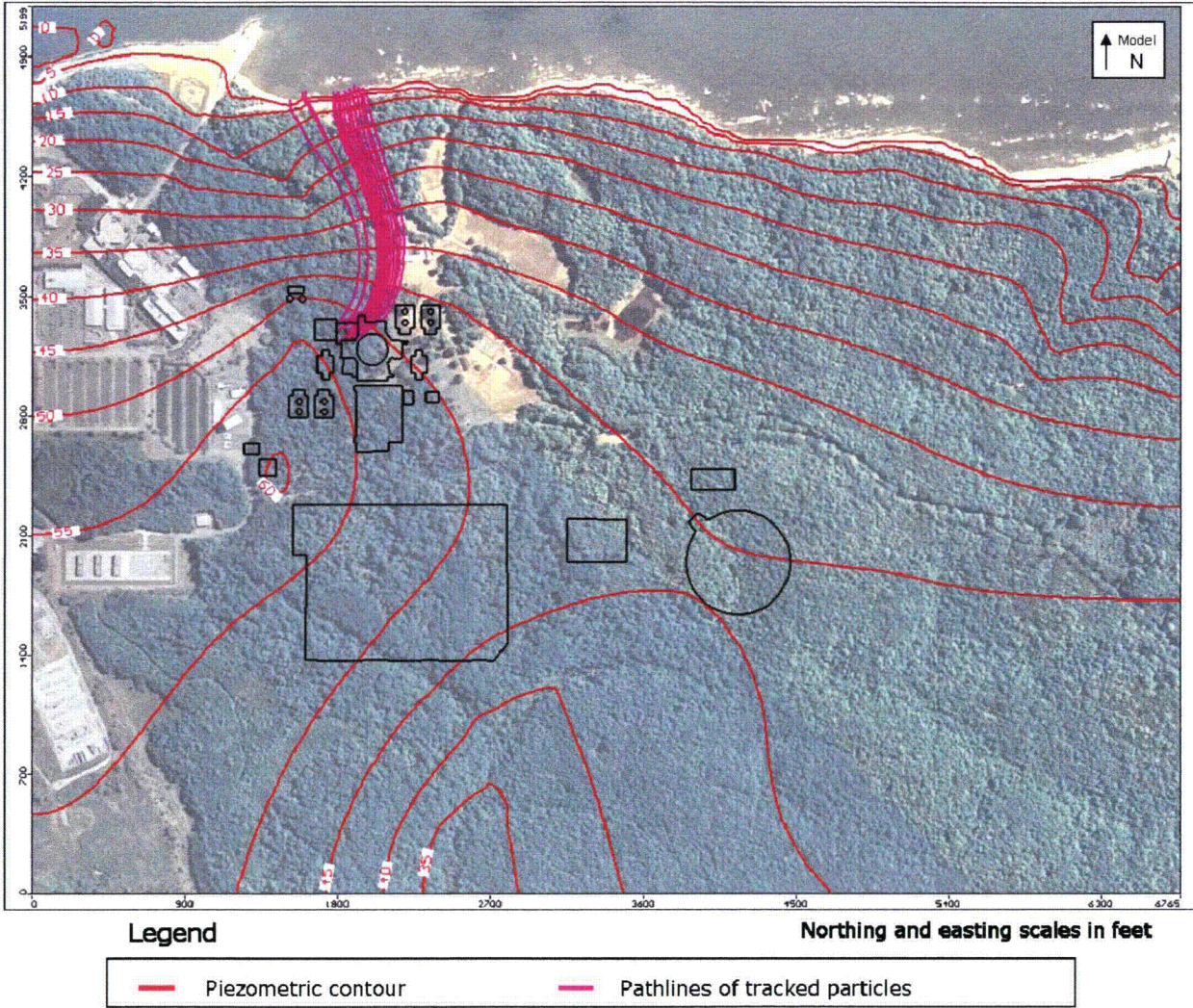


Figure-46 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 3.

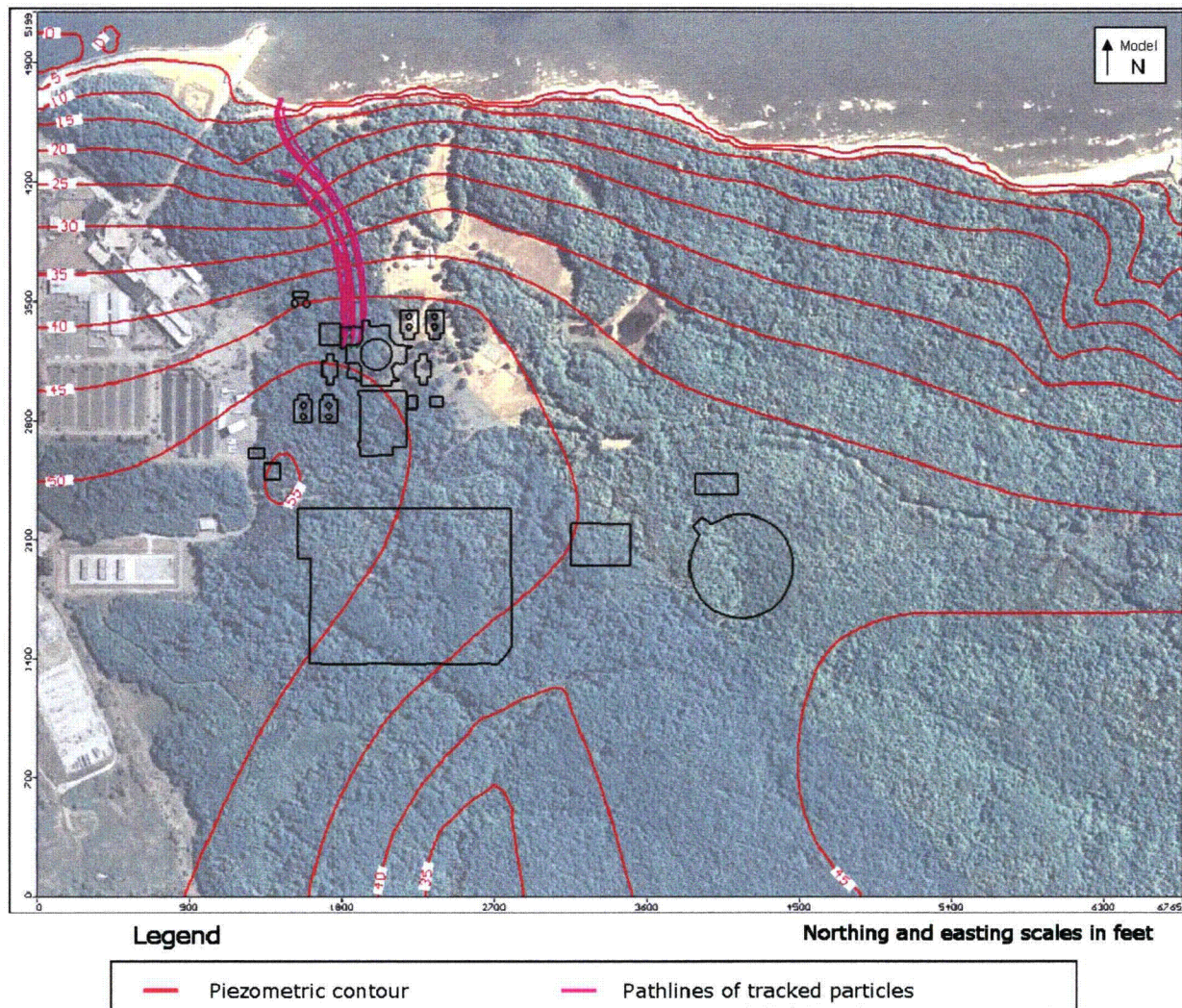


Figure-47 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 4.

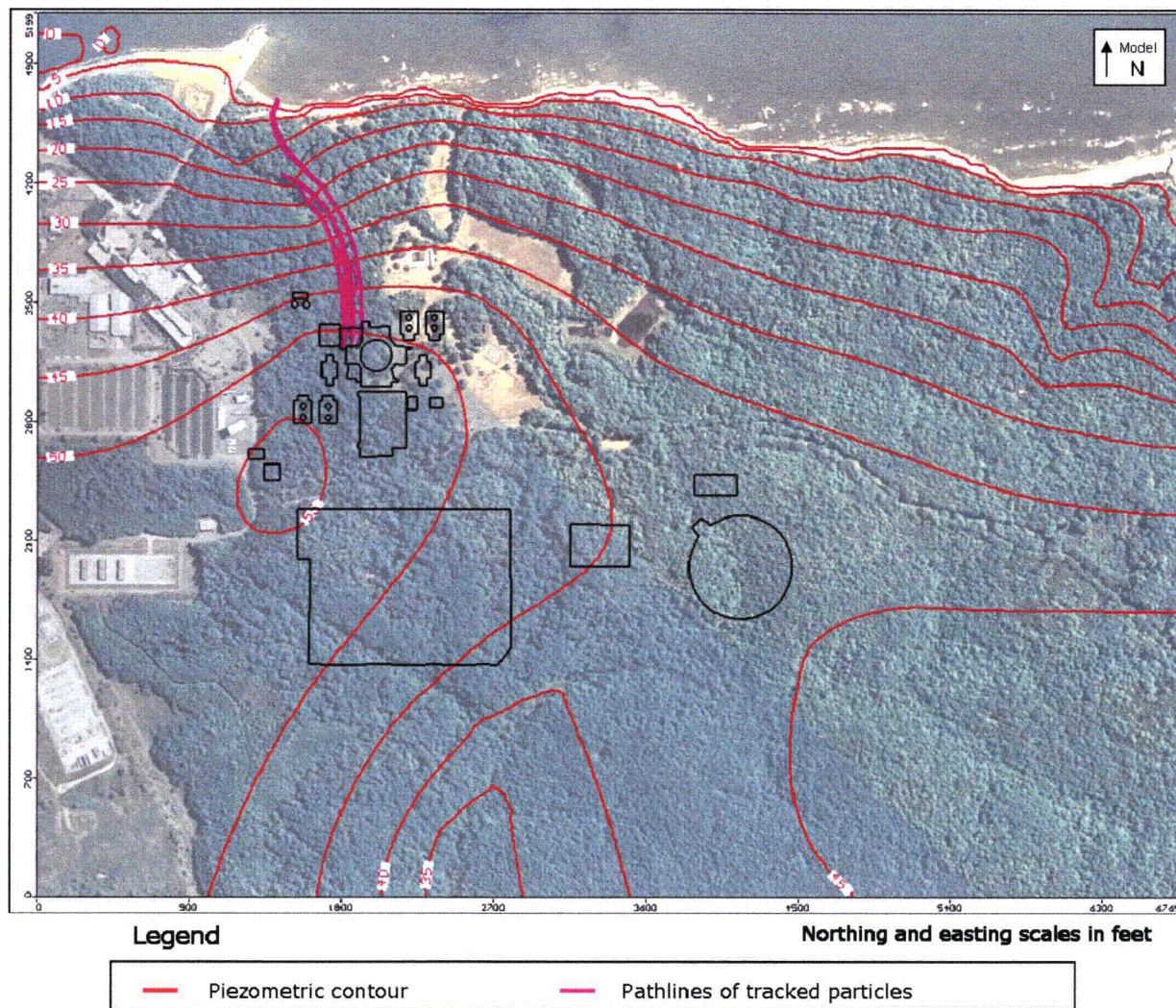


Figure-48 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 5.

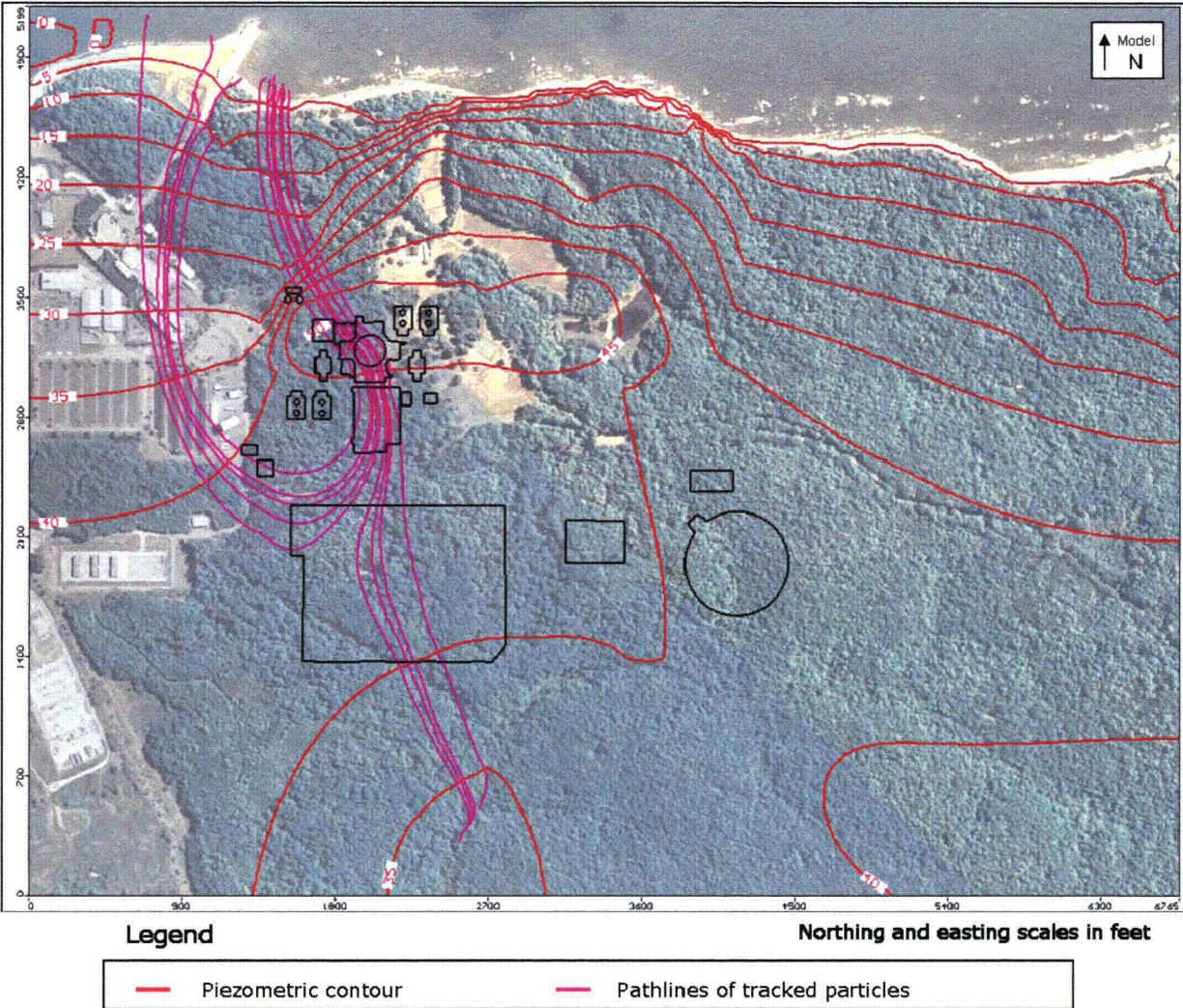


Figure-49 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 6.

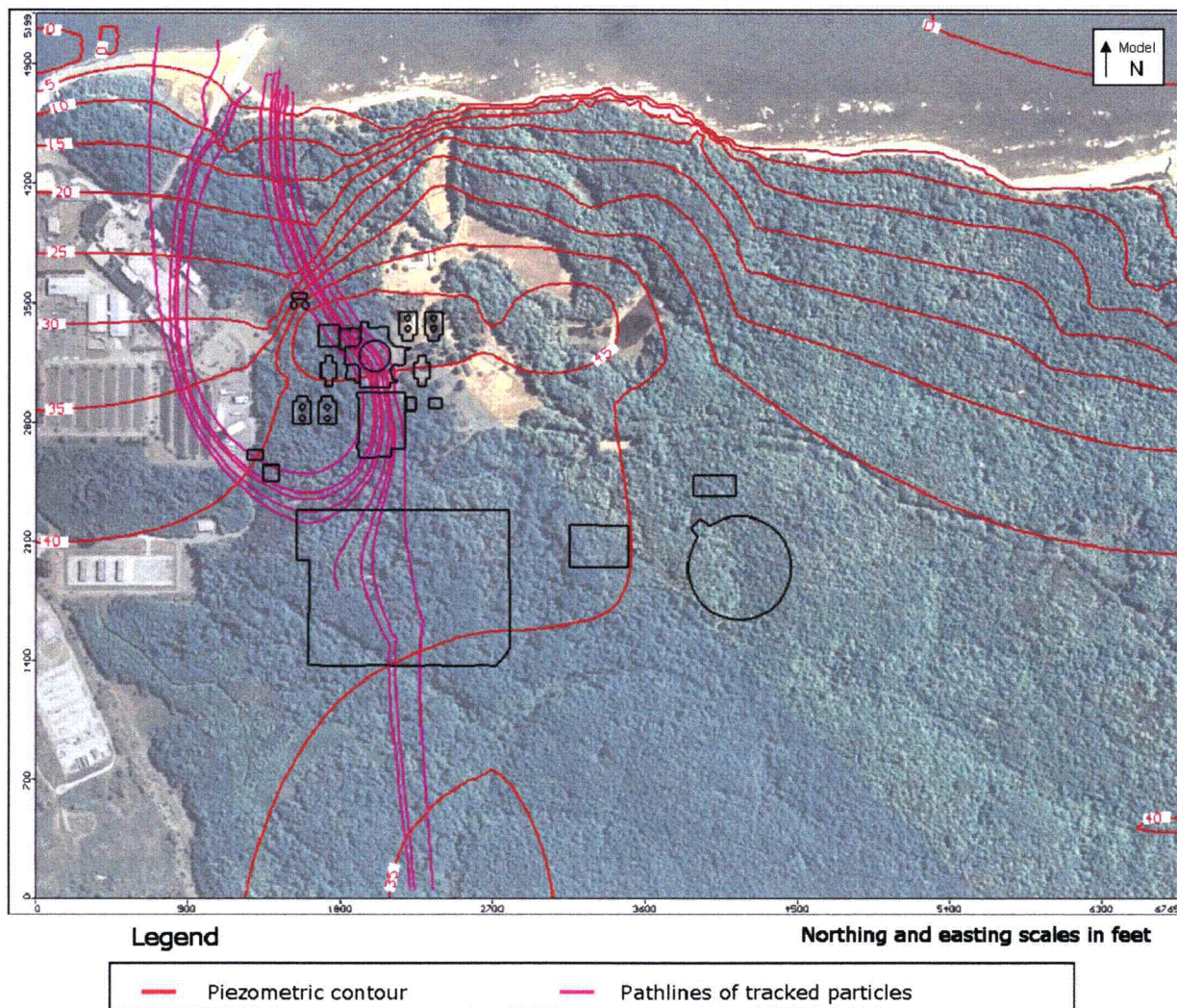


Figure-50 Equipotential lines in the Upper Chesapeake unit and pathlines of particles released in the NAB for Run 7.

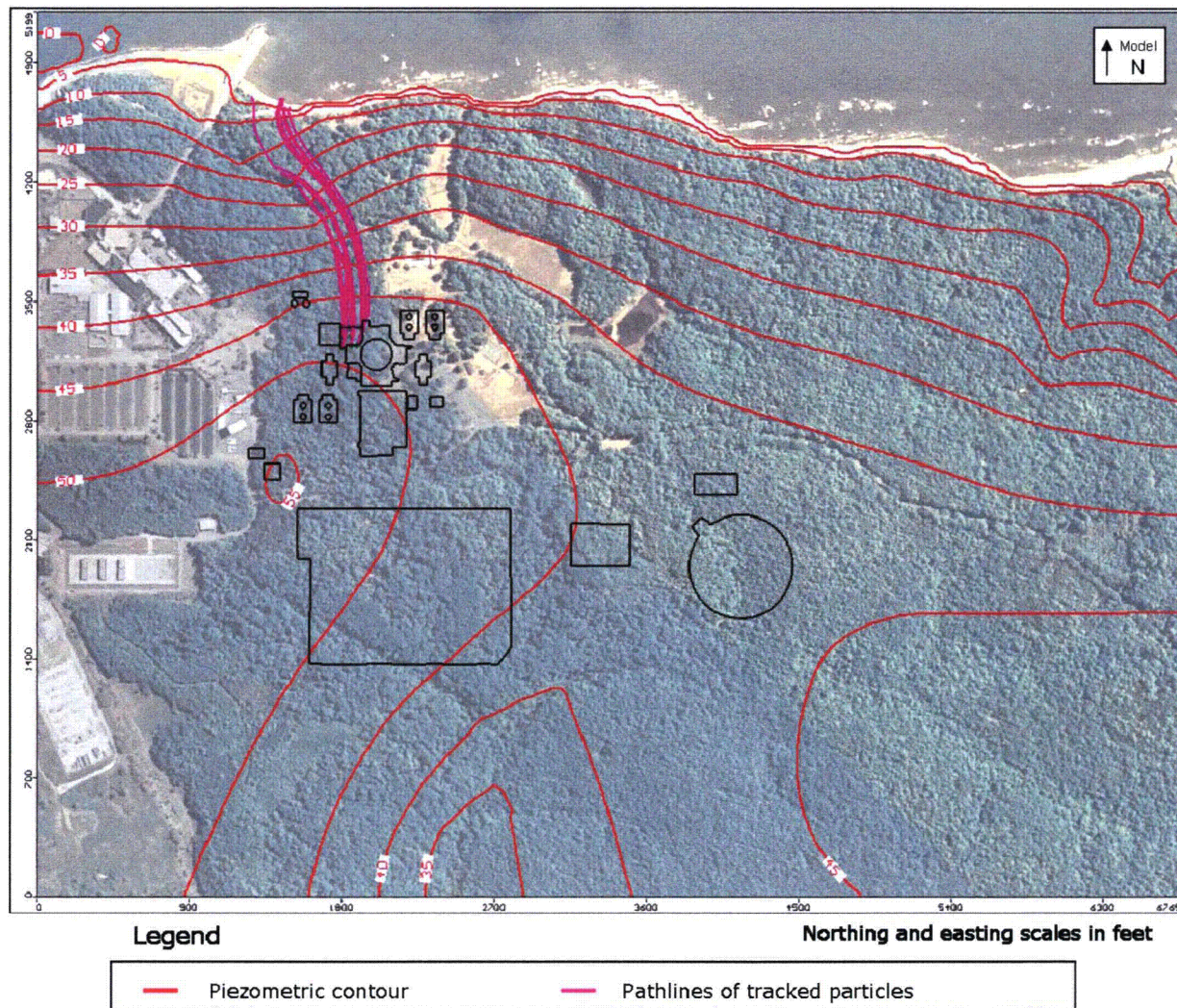
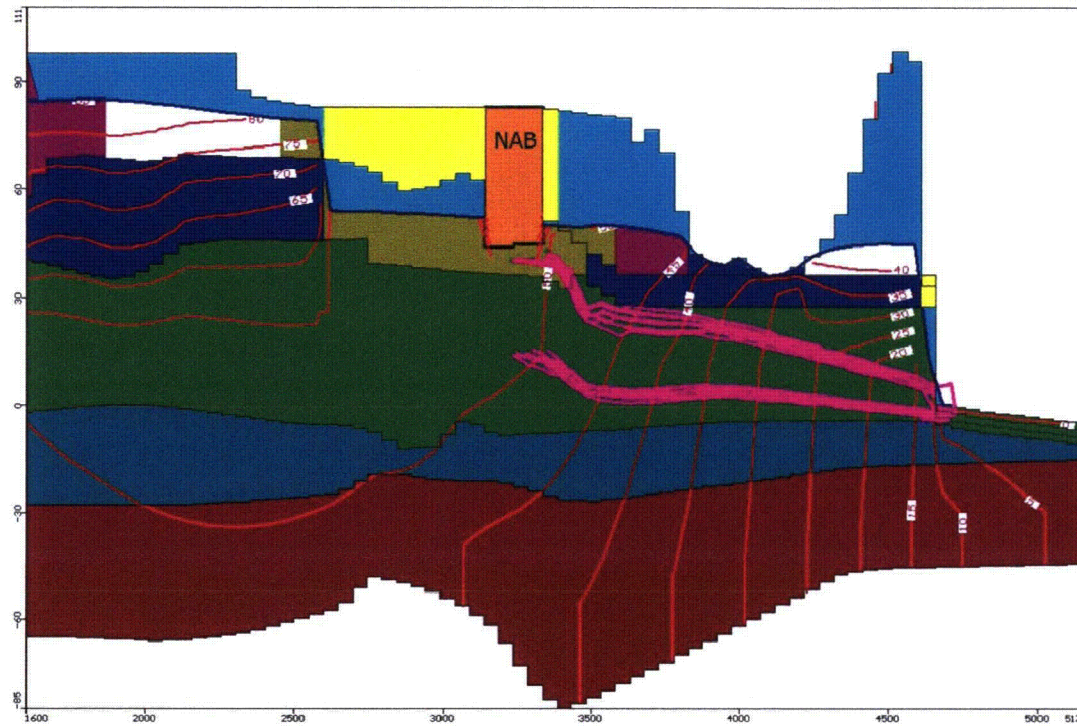


Figure-51 Water table, equipotentials, and particle pathlines on a south-north cross section through the NAB for Run 1, column 32.



**Legend**

Vertical and horizontal scales in feet

Surficial aquifer	Lower Chesapeake unit	Fill beyond the excavation area
Upper Chesapeake aquitard	Backfill in the excavation area	Materials above the water table
Upper Chesapeake unit	Transition zone 1 (fill to aquitard)	Dry cells
Middle Chesapeake aquitard	Transition zone 2 (fill to aquitard)	Inactive cells (buildings)
Piezometric contour	Pathlines of tracked particles	Water table

Note: Particles are released below the NAB in layers 2 and 3. Pathlines throughout the model domain are projected onto the column shown.

Figure-52 Zones used to analyze the water budget for pre-construction conditions.

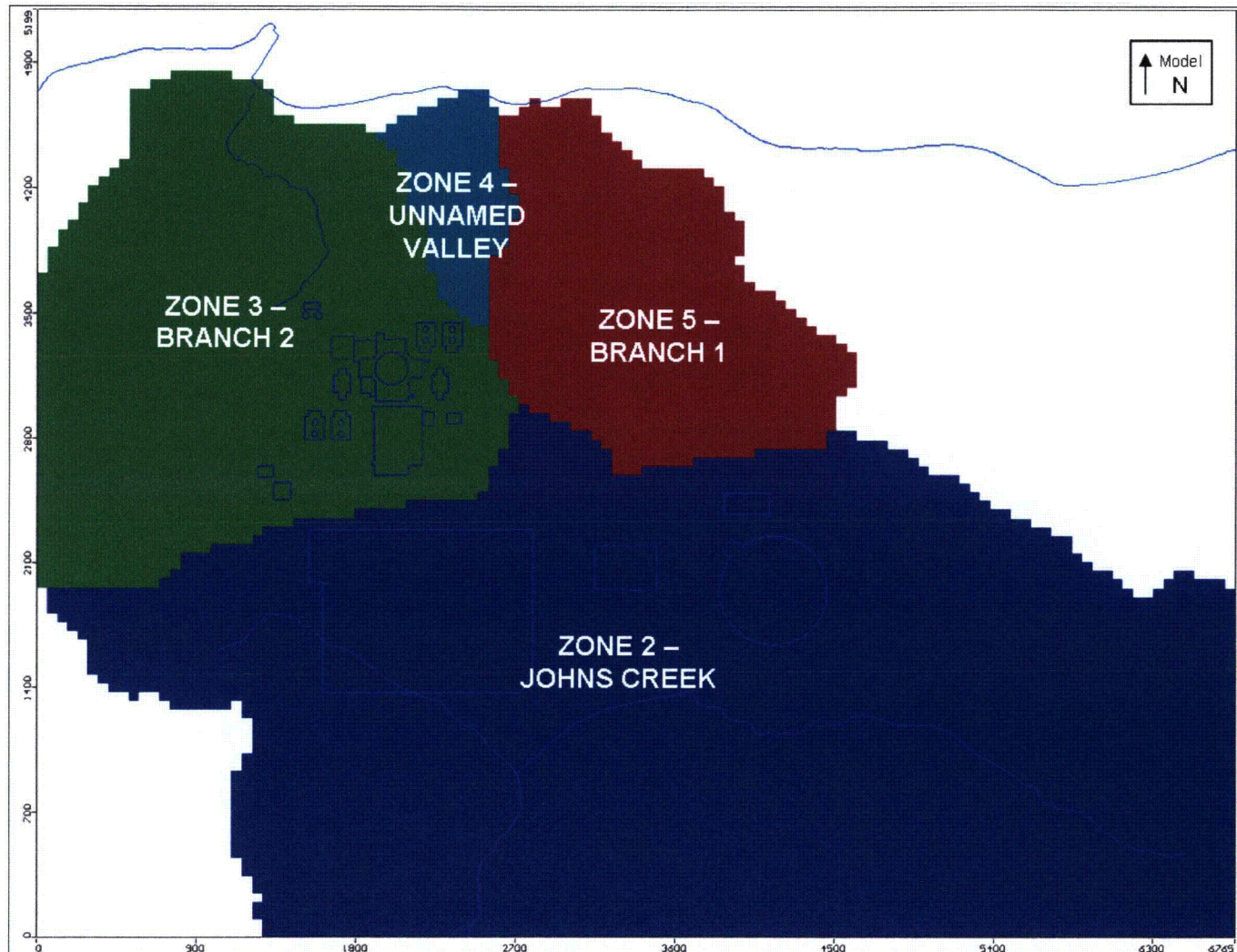




Figure-53 Zones used to analyze the water budget for post-construction conditions.

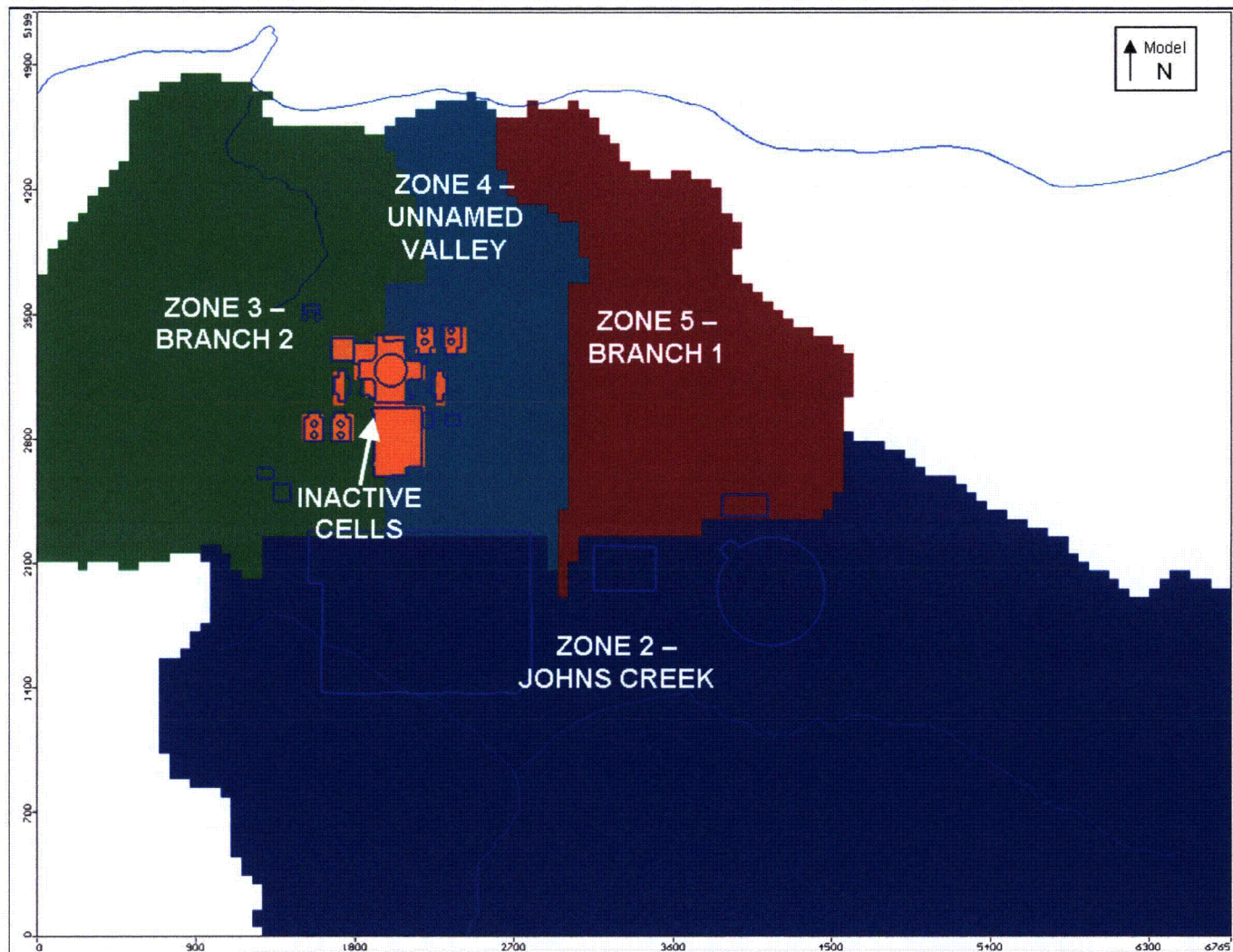


Figure-54 Zones in layer 1 used to examine power block excavation water budget.

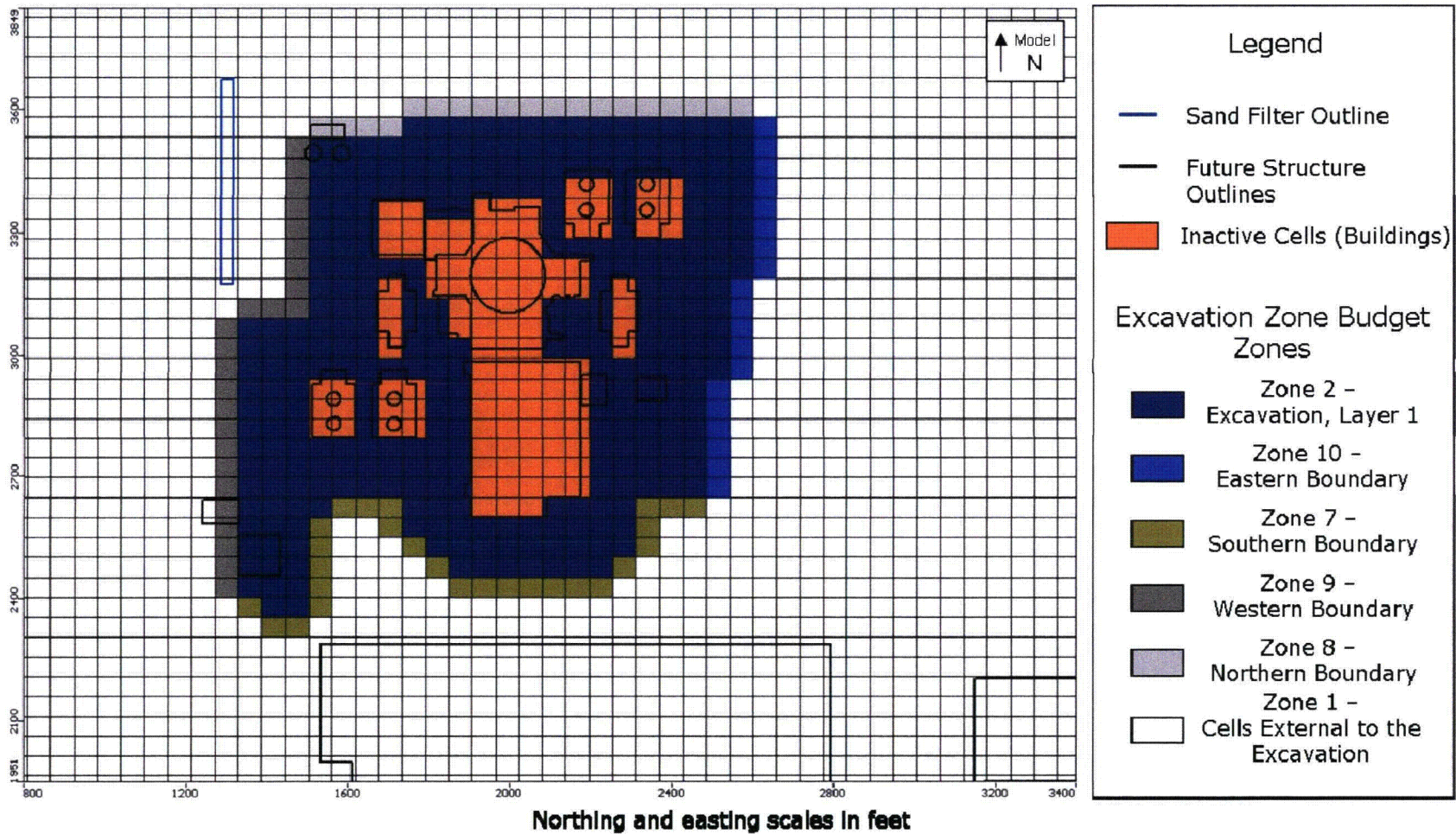
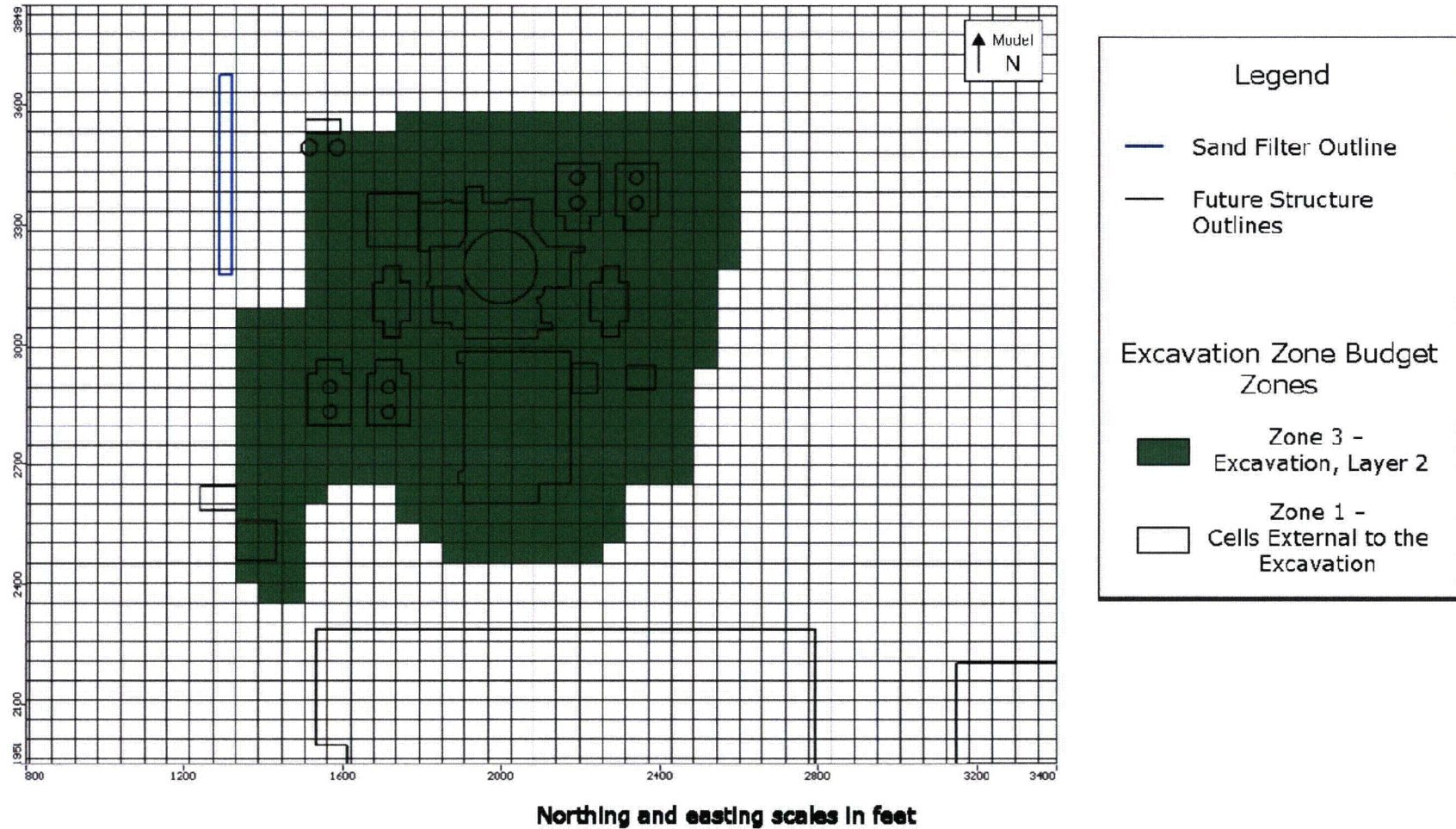
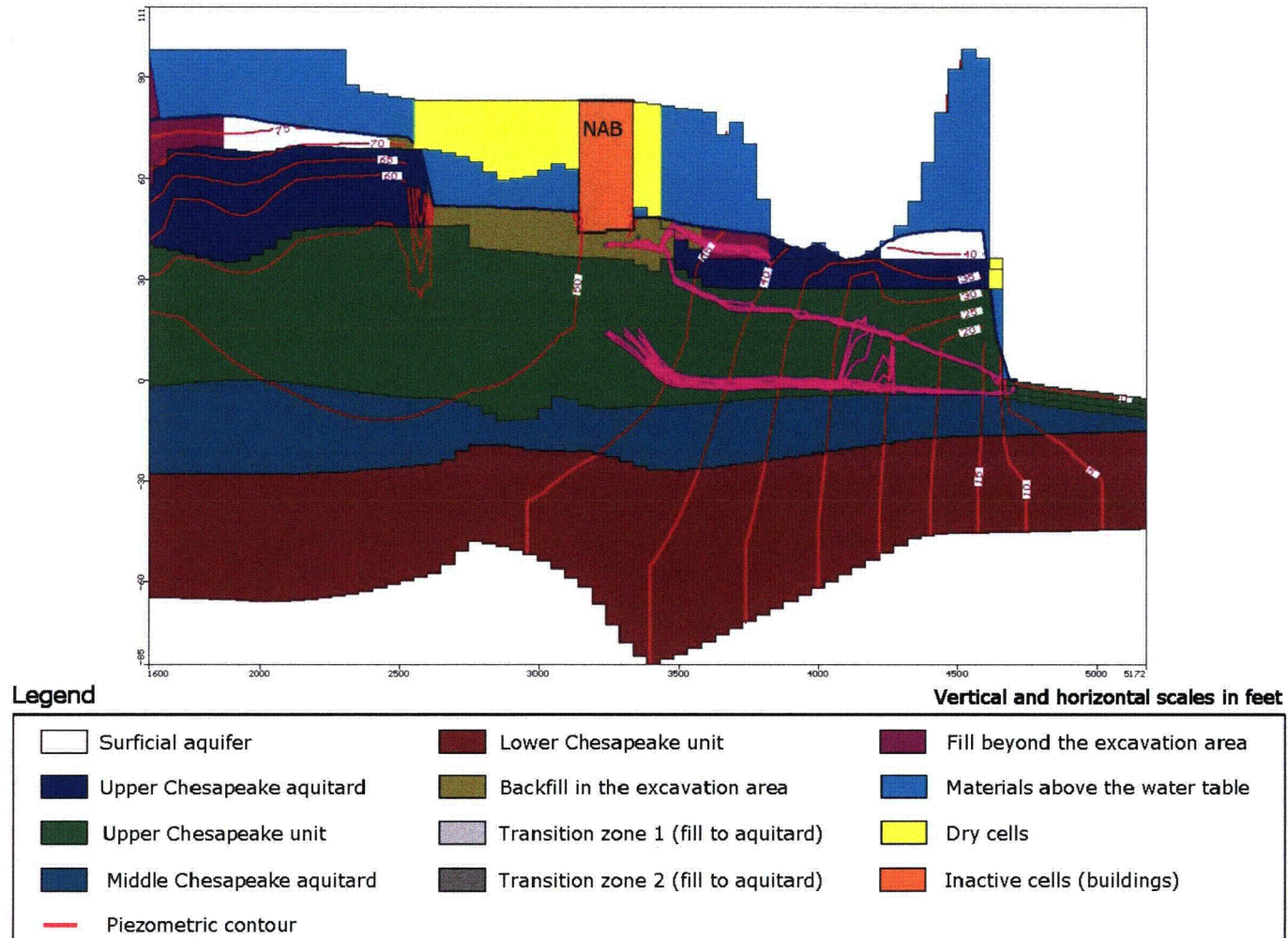


Figure-55 Zones in layer 2 used to examine power block excavation water budget.



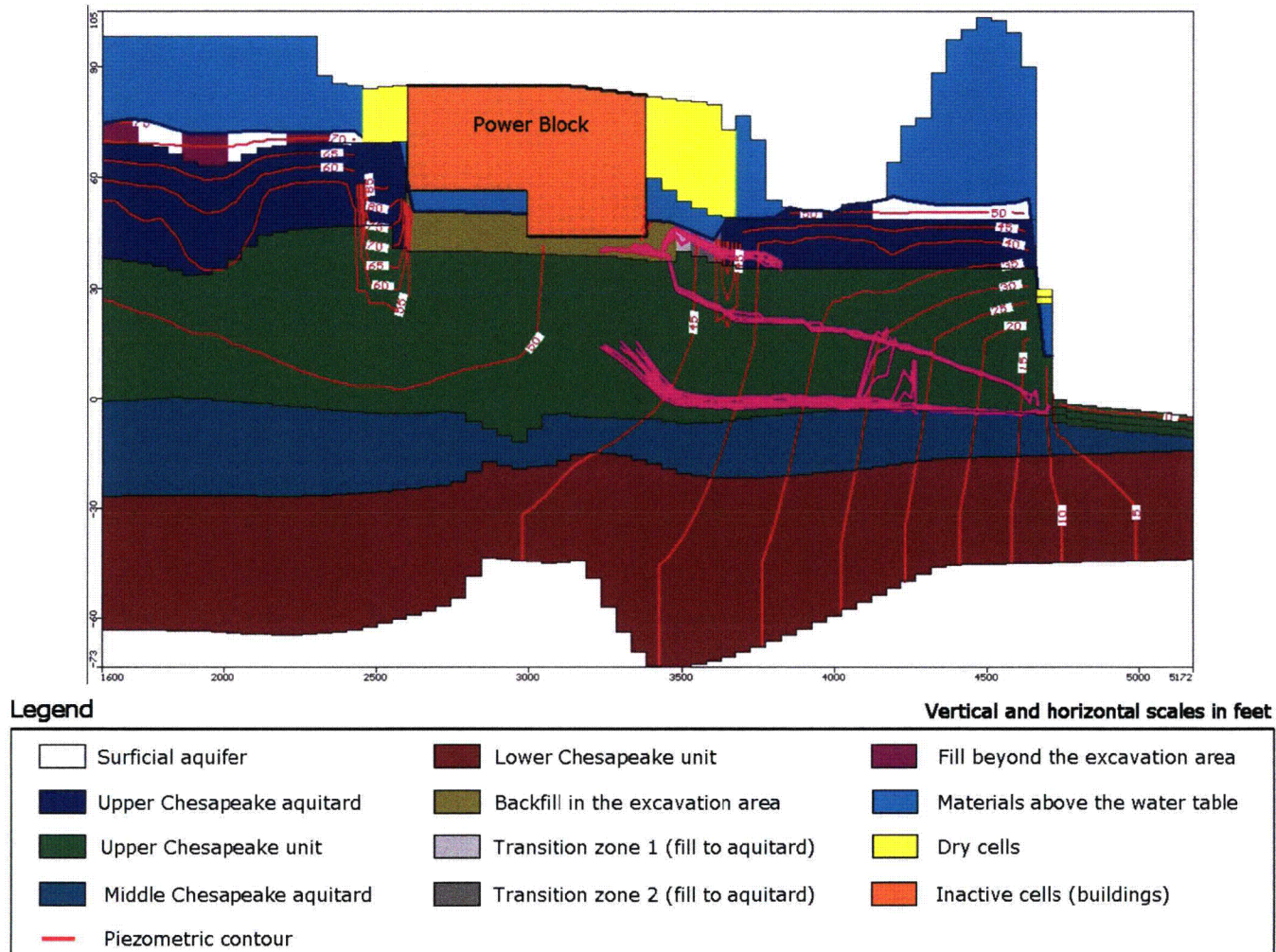
Note: Equivalent zones (to Zone 3) are used in layers 3 through 5 (Zones 4 through 6, respectively) but are not shown.

Figure-56 Sensitivity analysis for the hydraulic conductivity of the fill for Run 3. Section view of water table, equipotential lines, and pathlines from column 32 in the model).



Note: Particles are released below the NAB in layers 2 and 3. Pathlines throughout the model domain are projected onto the column shown.

Figure-57 Sensitivity analysis for the hydraulic conductivity of the fill for Run 3. Water table, equipotential lines, and pathlines along a portion of section A-A' (column 35 in the model).



Note: Particles are released below the NAB in layers 2 and 3. Pathlines throughout the model domain are projected onto the column shown.

Figure-58 Sensitivity analysis for the hydraulic conductivity of the fill for Run 3. Water table and equipotential lines along a portion of section B-B' (column 41 in the model).

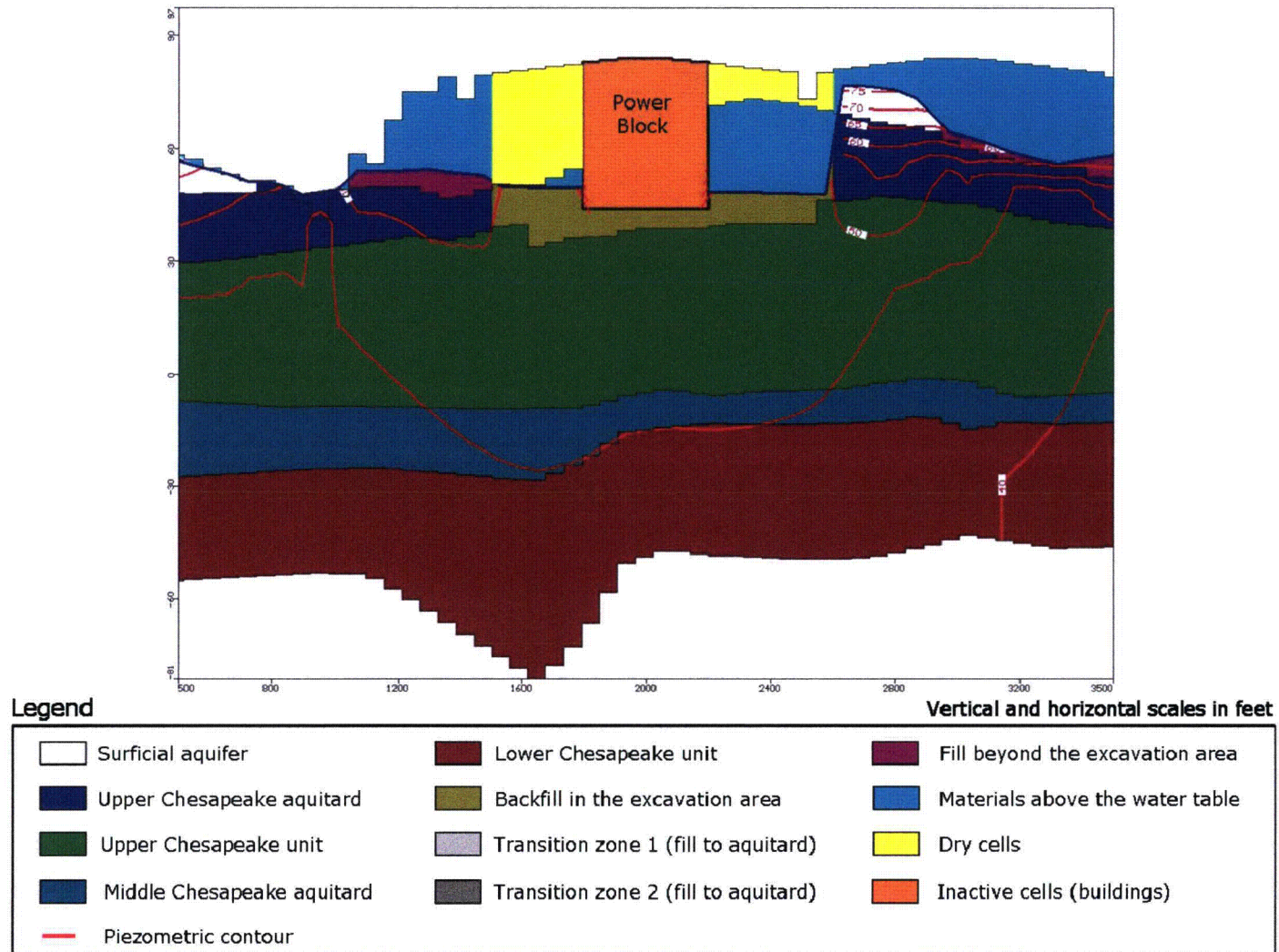
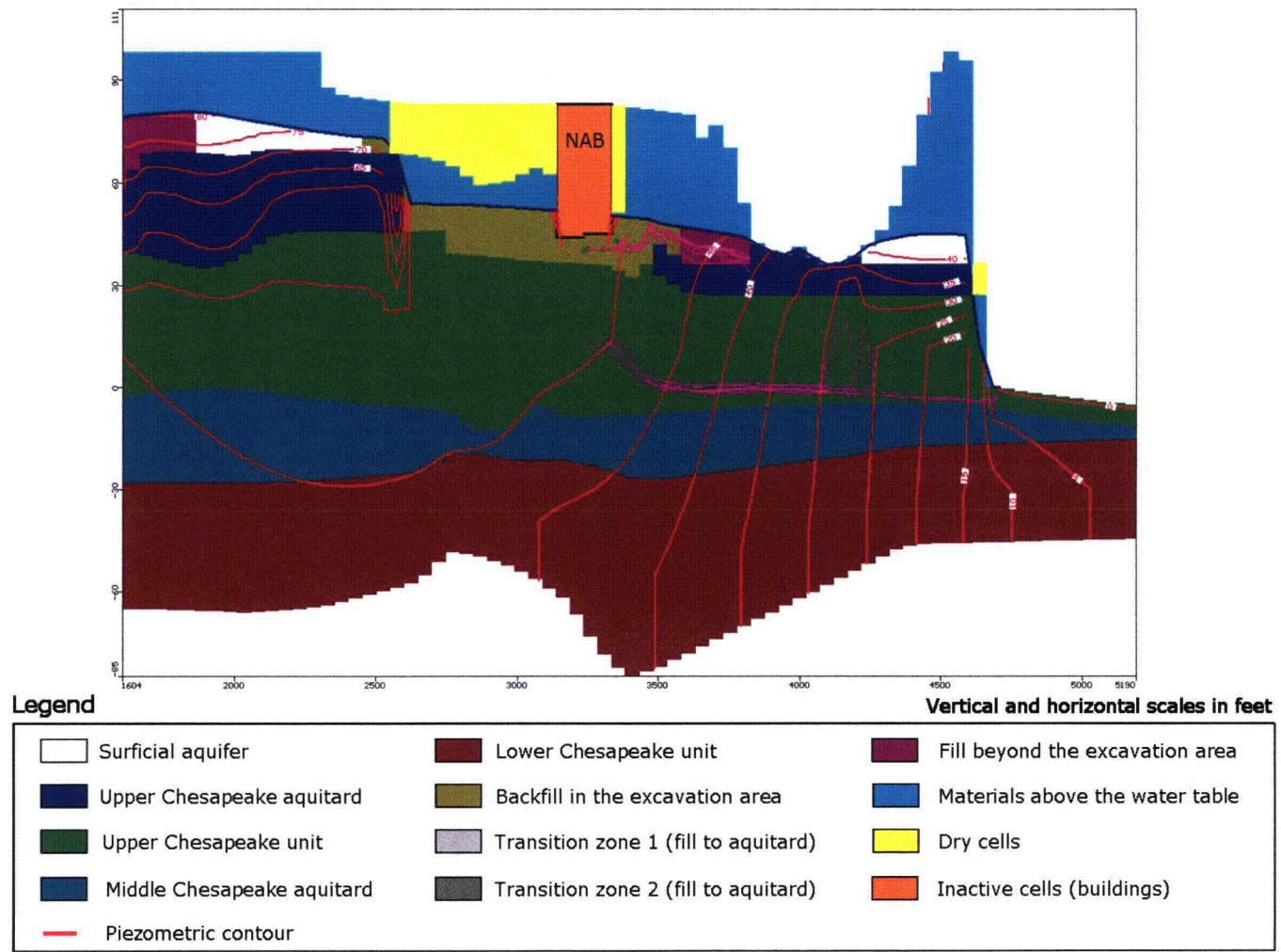
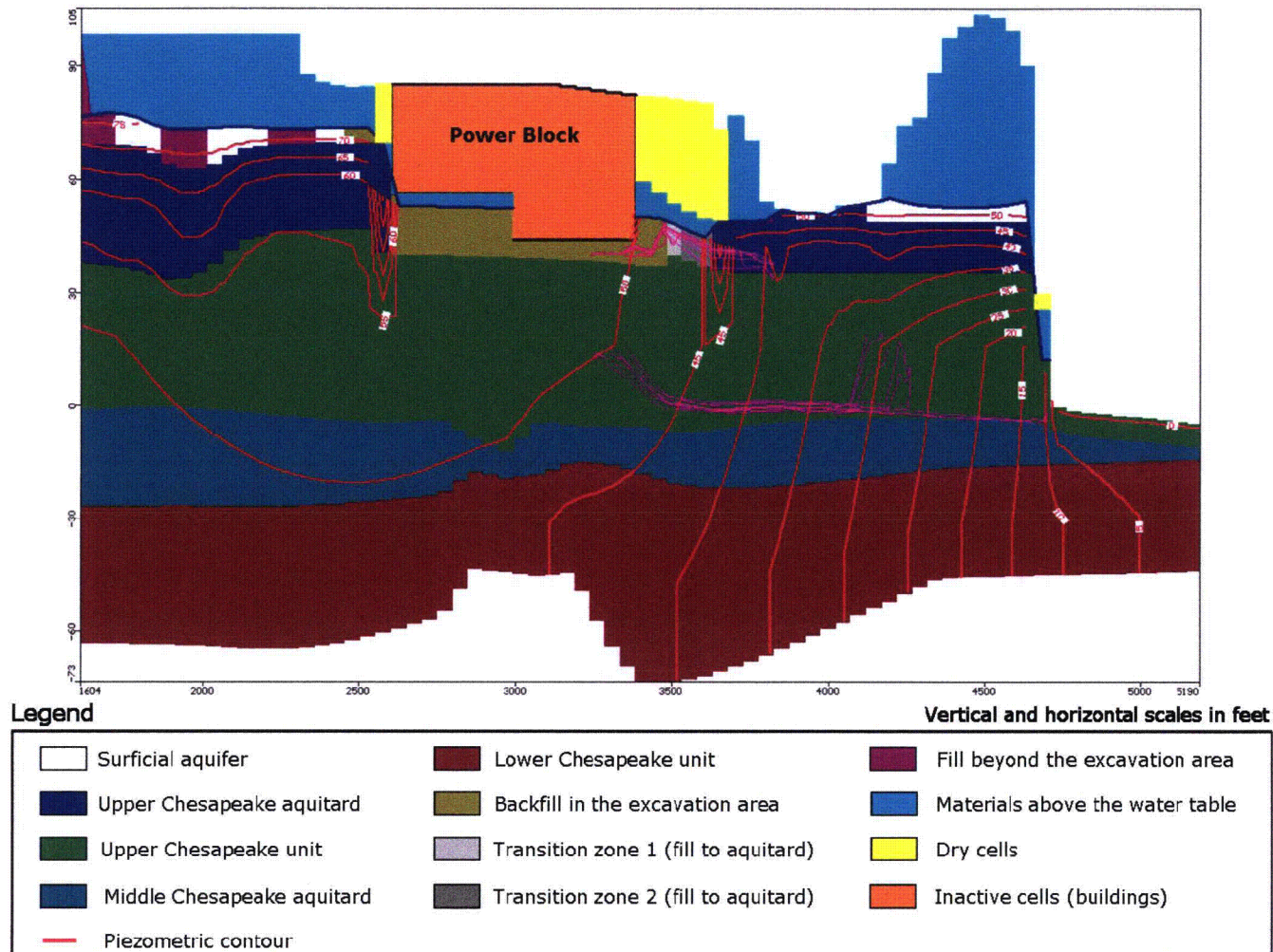


Figure-59 Sensitivity analysis for the hydraulic conductivity of the fill for Run 4. Section view of water table, equipotential lines, and pathlines from column 32 in the model).



Note: Particles are released below the NAB in layers 2 and 3. Pathlines throughout the model domain are projected onto the column shown.

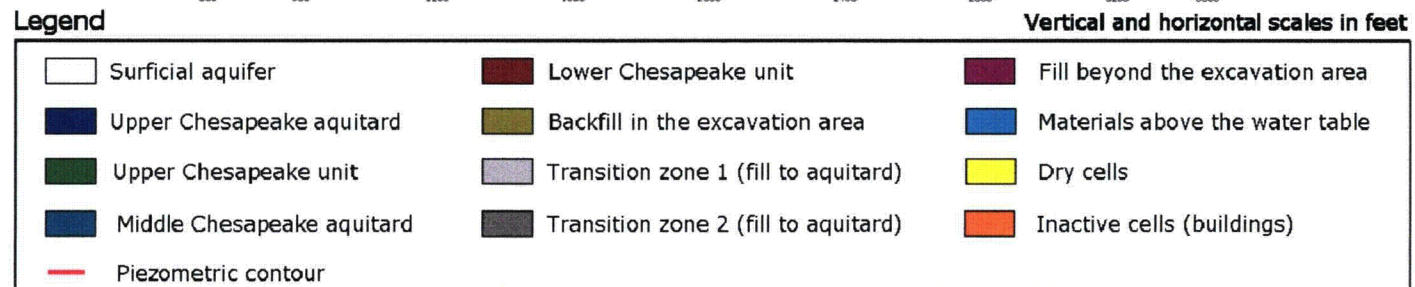
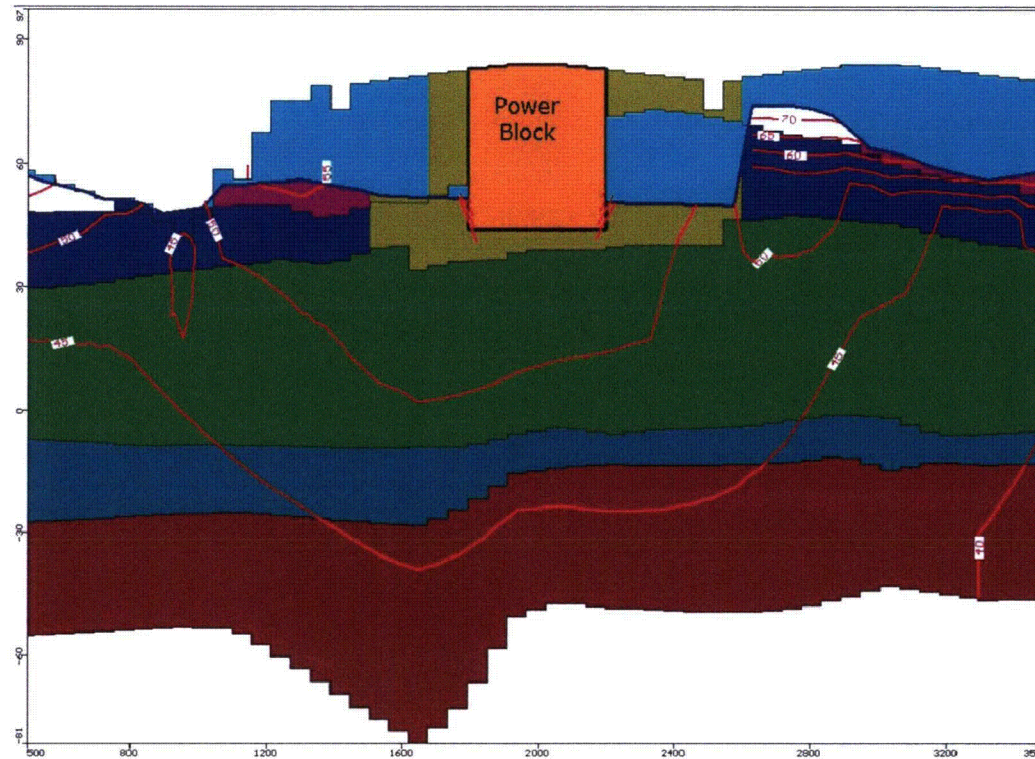
Figure-60 Sensitivity analysis for the hydraulic conductivity of the fill for Run 4. Water table, equipotential lines, and pathlines along a portion of section A-A' (column 35 in the model).



Note: Particles are released below the NAB in layers 2 and 3. Pathlines throughout the model domain are projected onto the column shown.



Figure-61 Sensitivity analysis for the hydraulic conductivity of the fill for Run 4. Water table and equipotential lines along a portion of section B-B' (column 41 in the model).



UN#10-122

**Enclosure 6**

**DVD Containing the Groundwater Model Input Files**

**Calvert Cliffs Nuclear Power Plant, Unit 3**