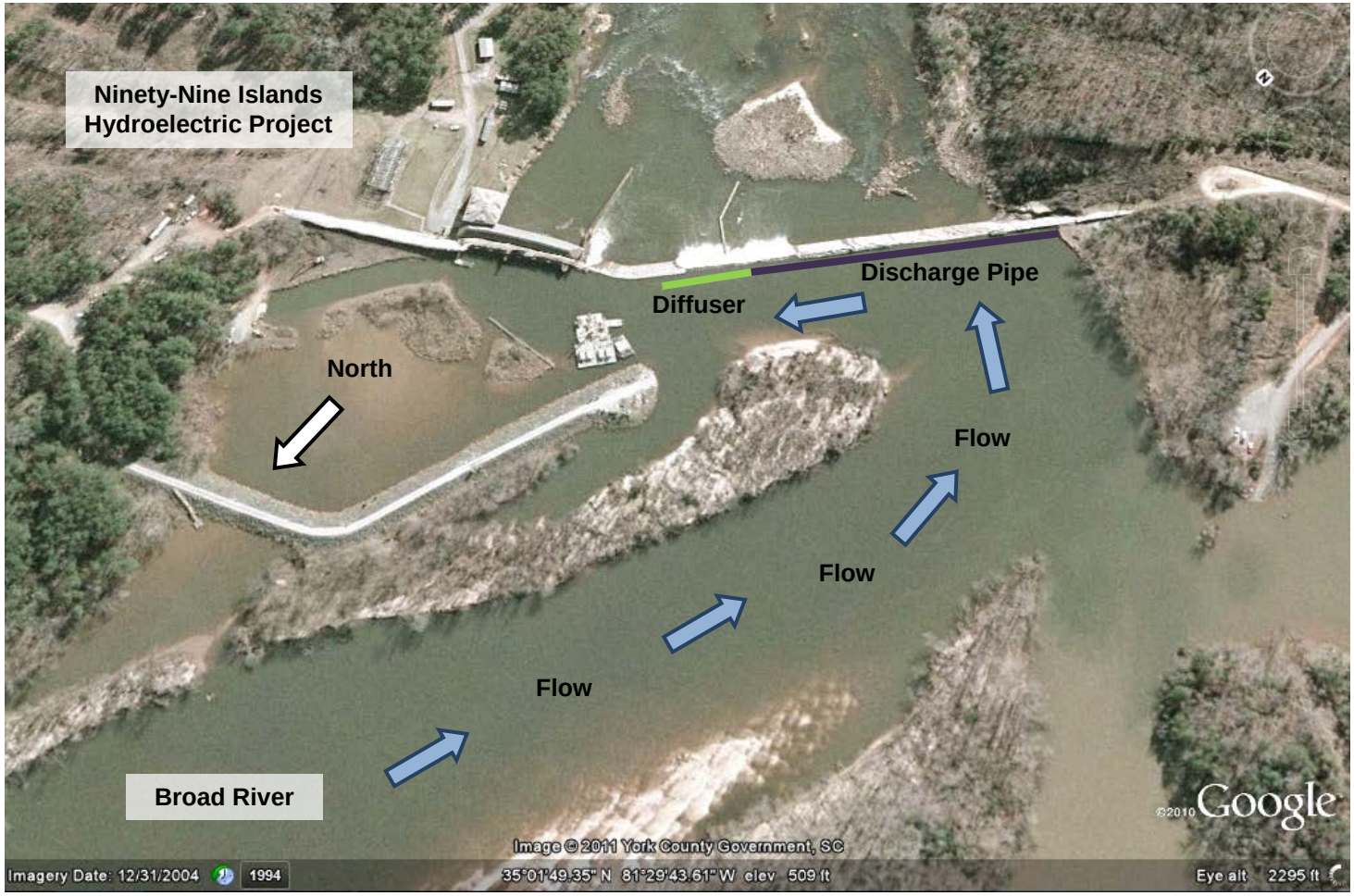


Figure 1 – Location of Lee Nuclear Station Multi-port Discharge Diffuser

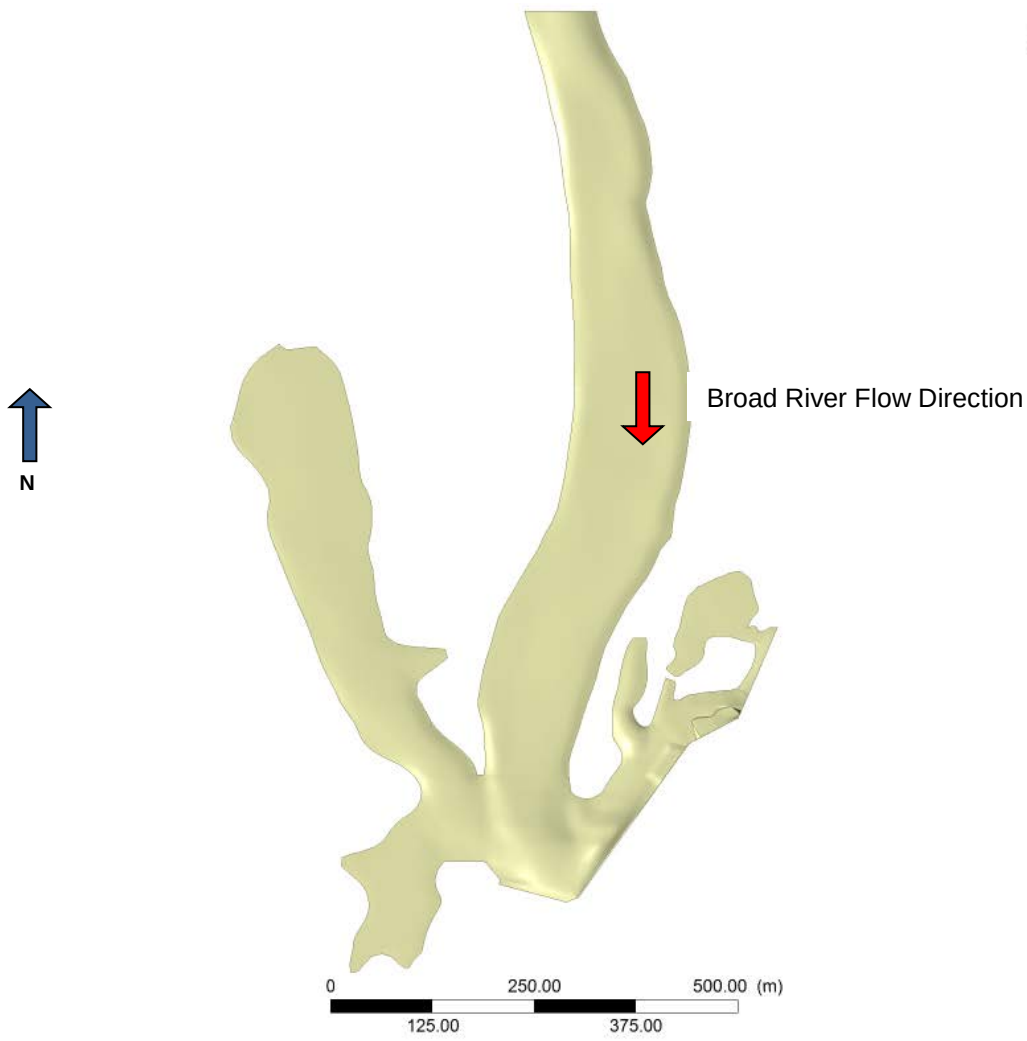


Figure 2 – Plan view of the geometry used in the CFD model

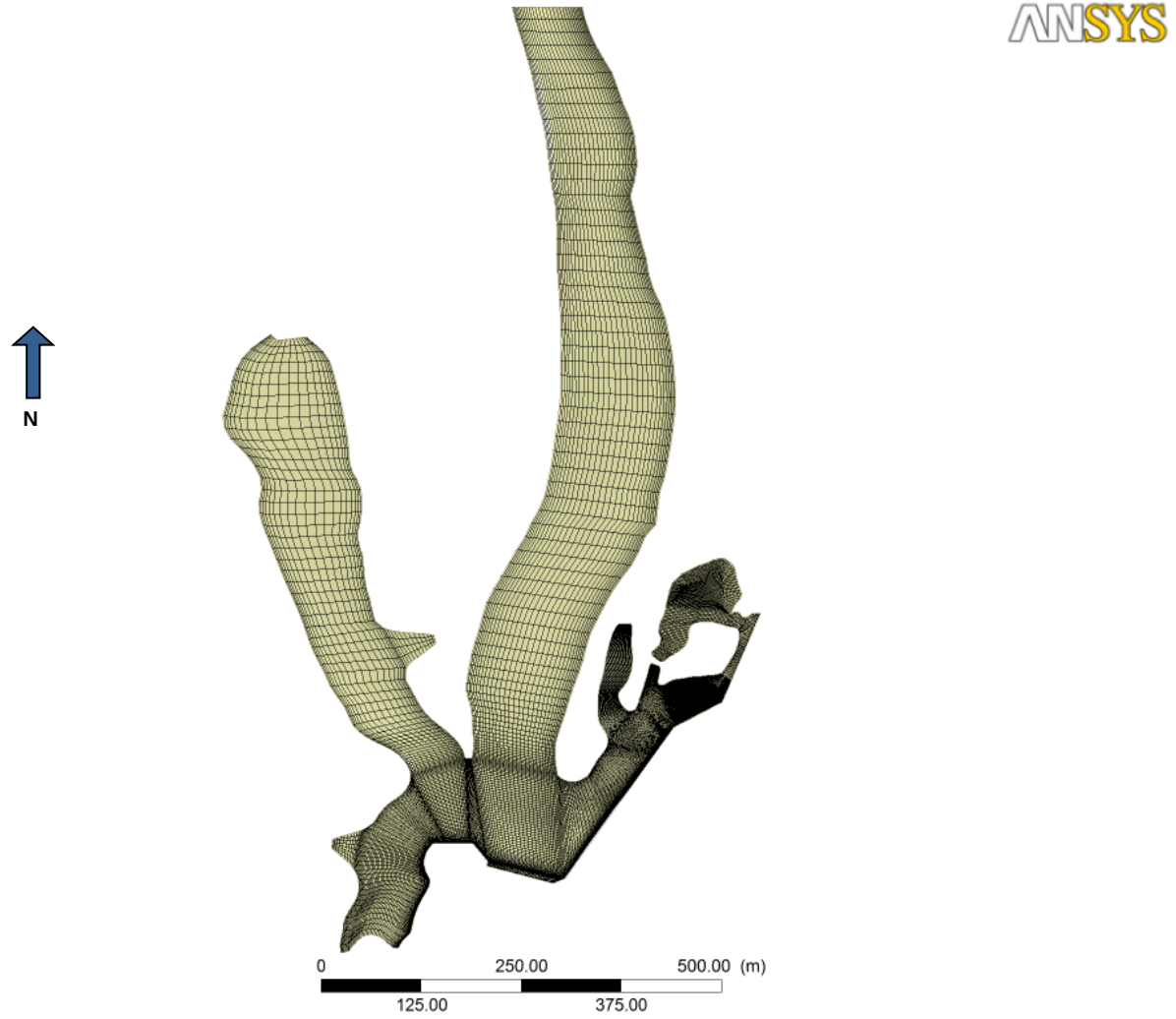


Figure 3 – Computational Mesh

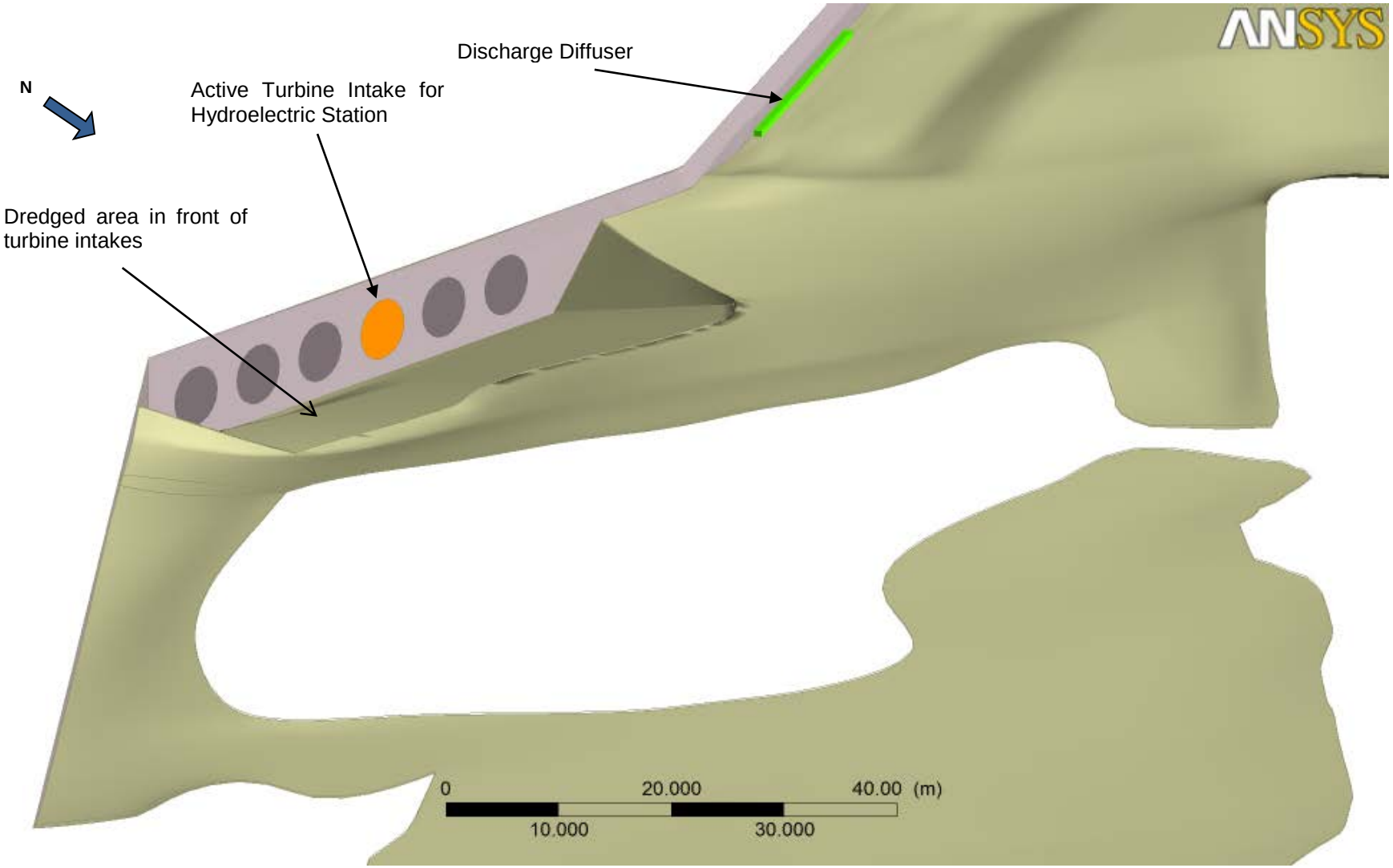


Figure 4 – Close view of geometry, showing forebay, dam, turbine openings
(Turbine 4 is colored orange) and volume representing the discharge diffuser (green).

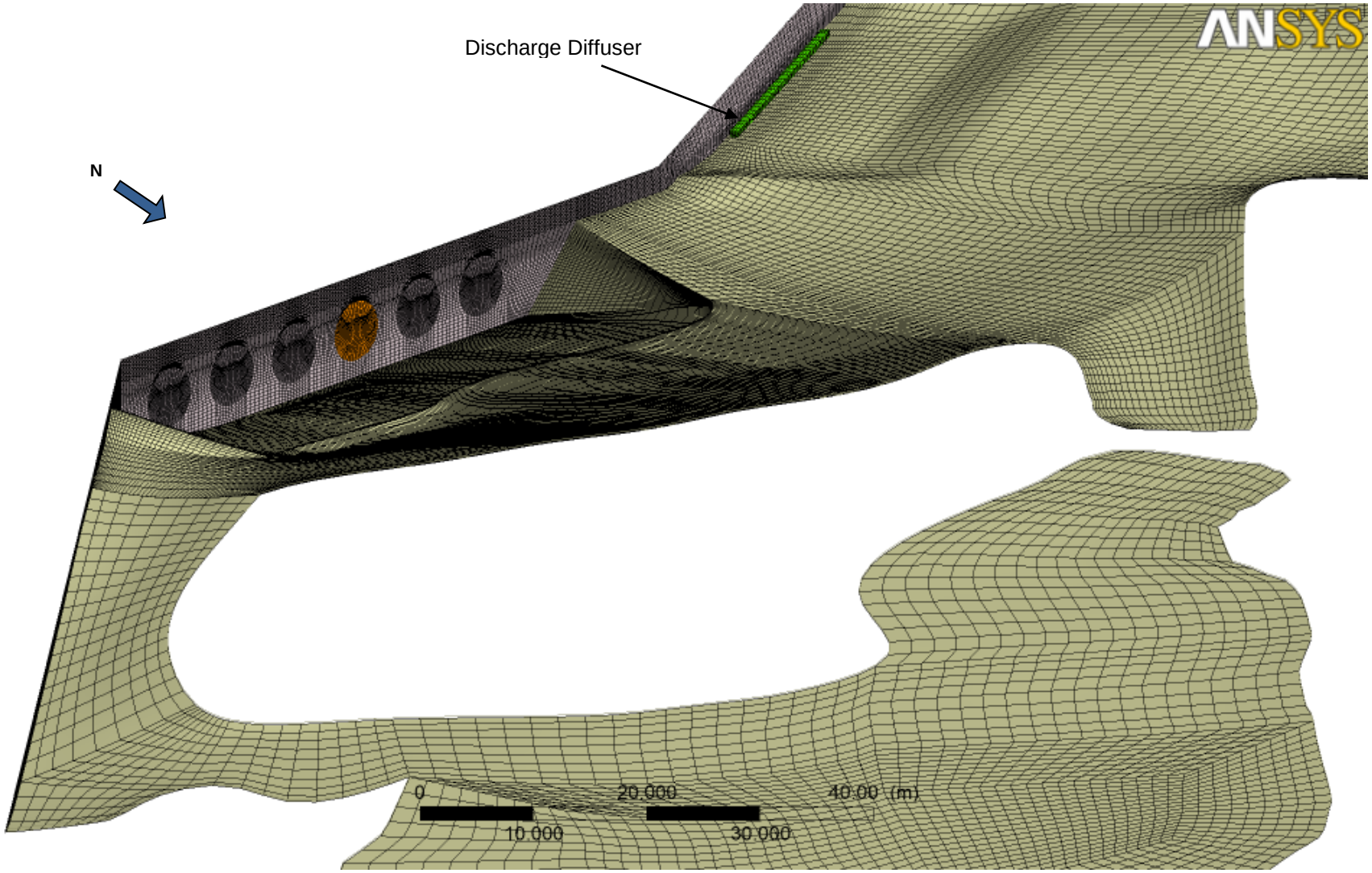


Figure 5 – Close view of the computational surface mesh in the forebay.

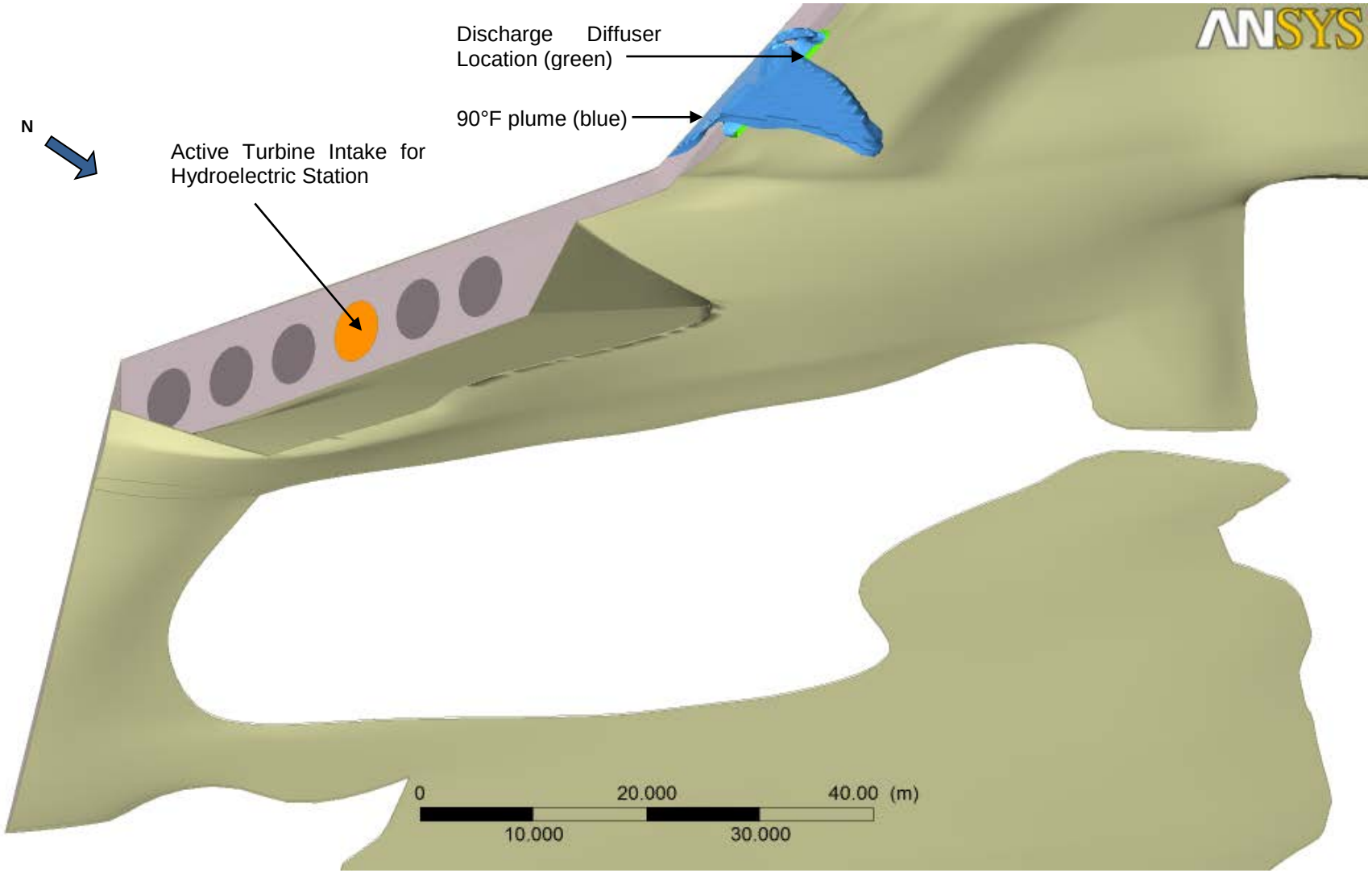


Figure 6 – Blue iso-surface showing 90°F plume for Scenario 1, 20 minutes into cycle 1.
(The blue iso-surface connects all locations having 90°F and forms a closed surface. All water within this surface has temperature between 90°F and the discharge temperature (95°F); all water outside of this surface has temperature between 90°F and the ambient river temperature (88.2 °F).

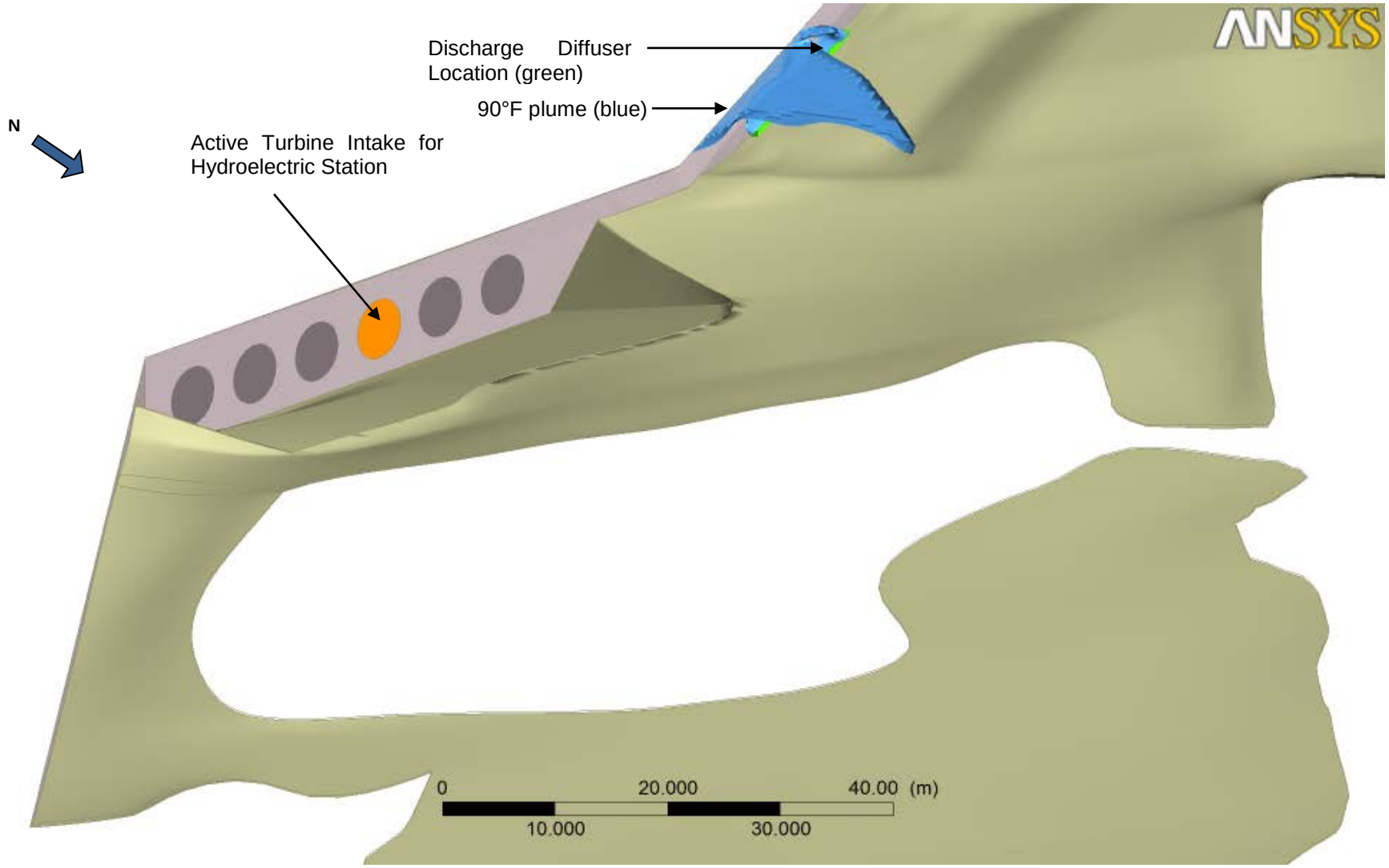


Figure 7 – Blue iso-surface showing 90°F plume for Scenario 1, end of cycle 1.
(The blue iso-surface connects all locations having 90°F and forms a closed surface. All water within this surface has temperature between 90°F and the discharge temperature (95°F); all water outside of this surface has temperature between 90°F and the ambient river temperature (88.2 °F).

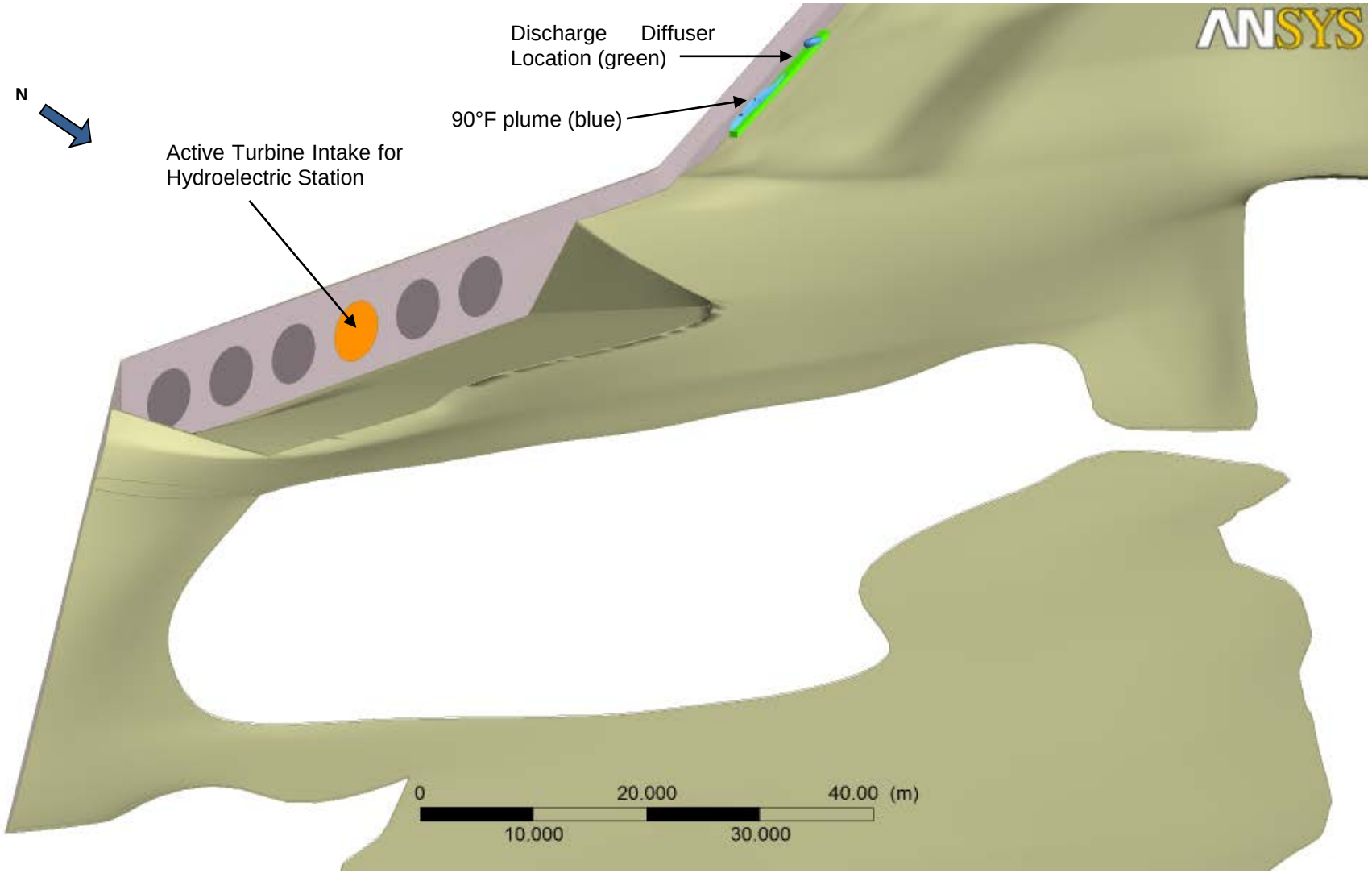


Figure 8 – Blue iso-surface showing 90°F plume for Scenario 2, 20 minutes into cycle 1.
(The blue iso-surface connects all locations having 90°F and forms a closed surface. All water within this surface has temperature between 90°F and the discharge temperature (91°F); all water outside of this surface has temperature between 90°F and the ambient river temperature (88.2 °F).

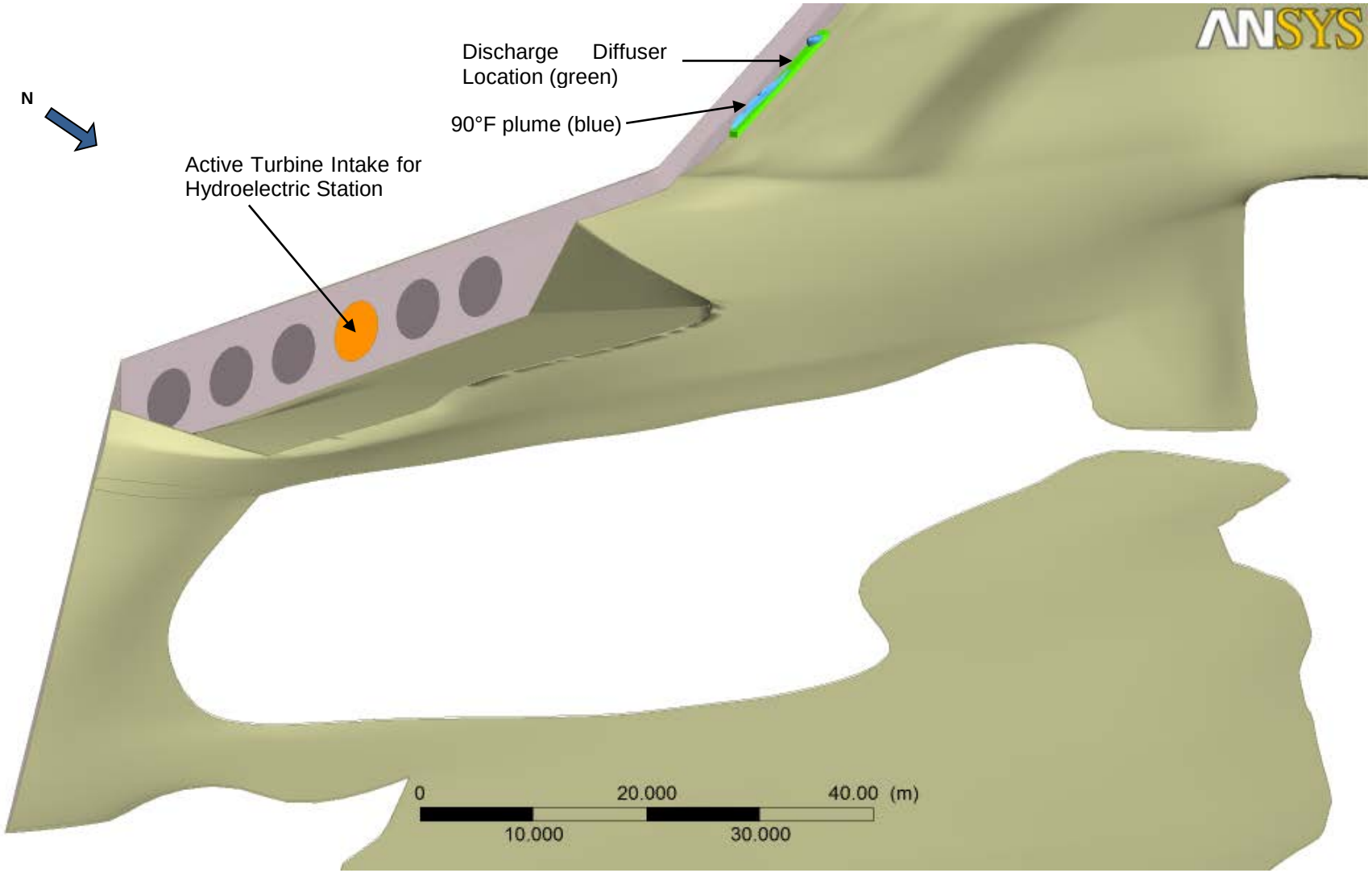


Figure 9 – Blue iso-surface showing 90°F plume for Scenario 2, end of cycle 1.
(The blue iso-surface connects all locations having 90°F and forms a closed surface. All water within this surface has temperature between 90°F and the discharge temperature (91°F); all water outside of this surface has temperature between 90°F and the ambient river temperature (88.2 °F).

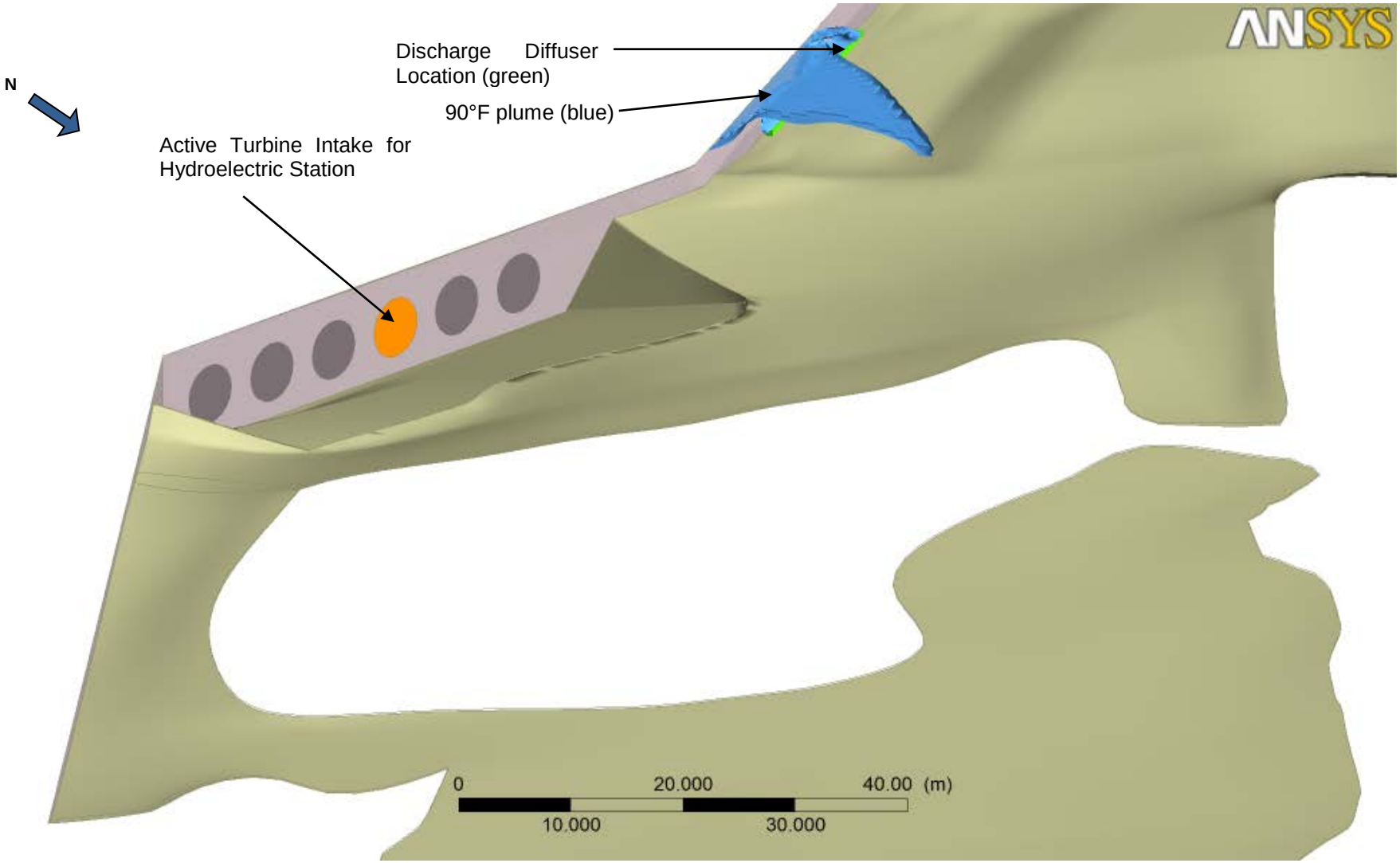


Figure 10 – Blue iso-surface showing steady-state 90°F plume for Scenario 1.

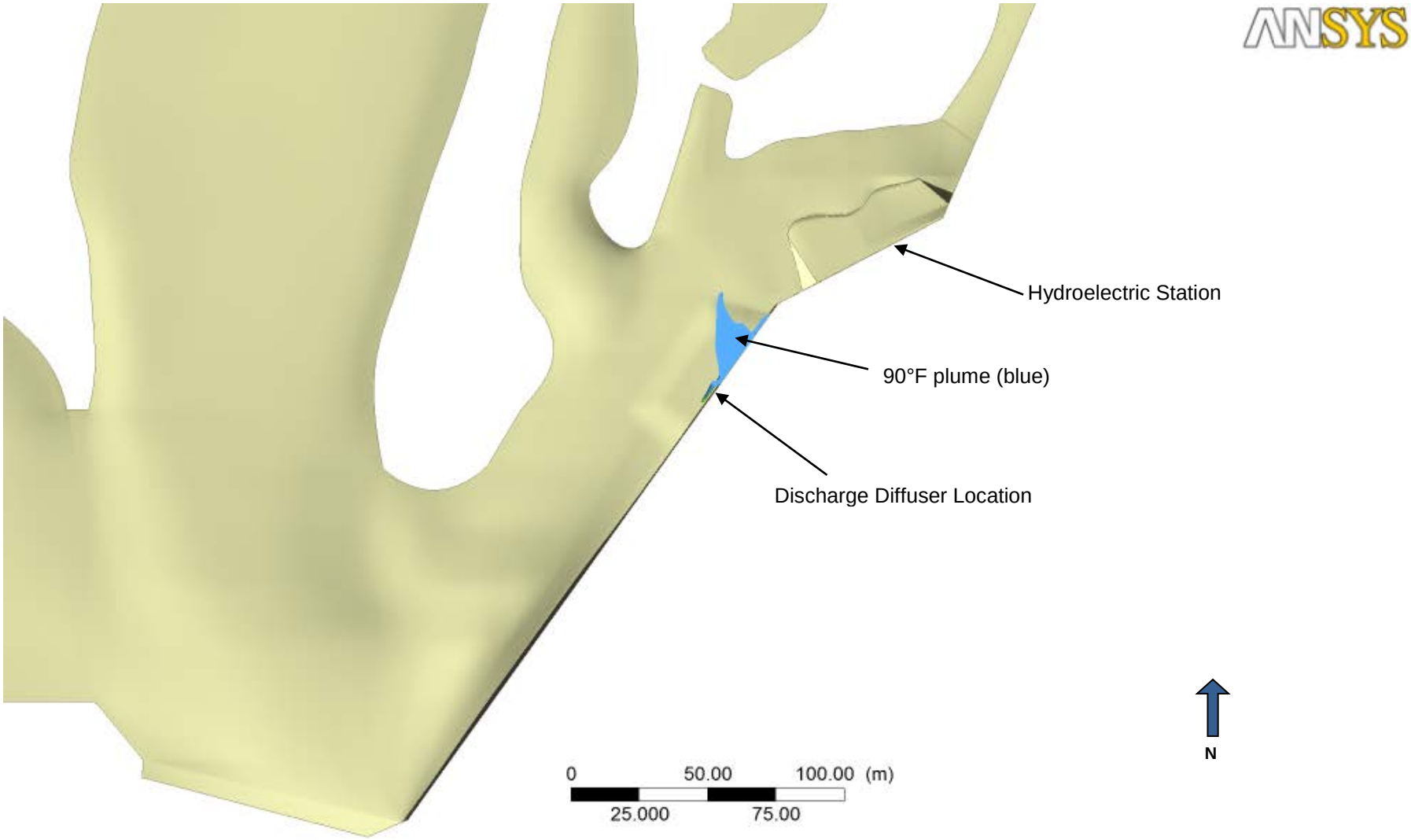


Figure 11 – Blue iso-surface showing steady-state 90°F plume for Scenario 1, plan view.

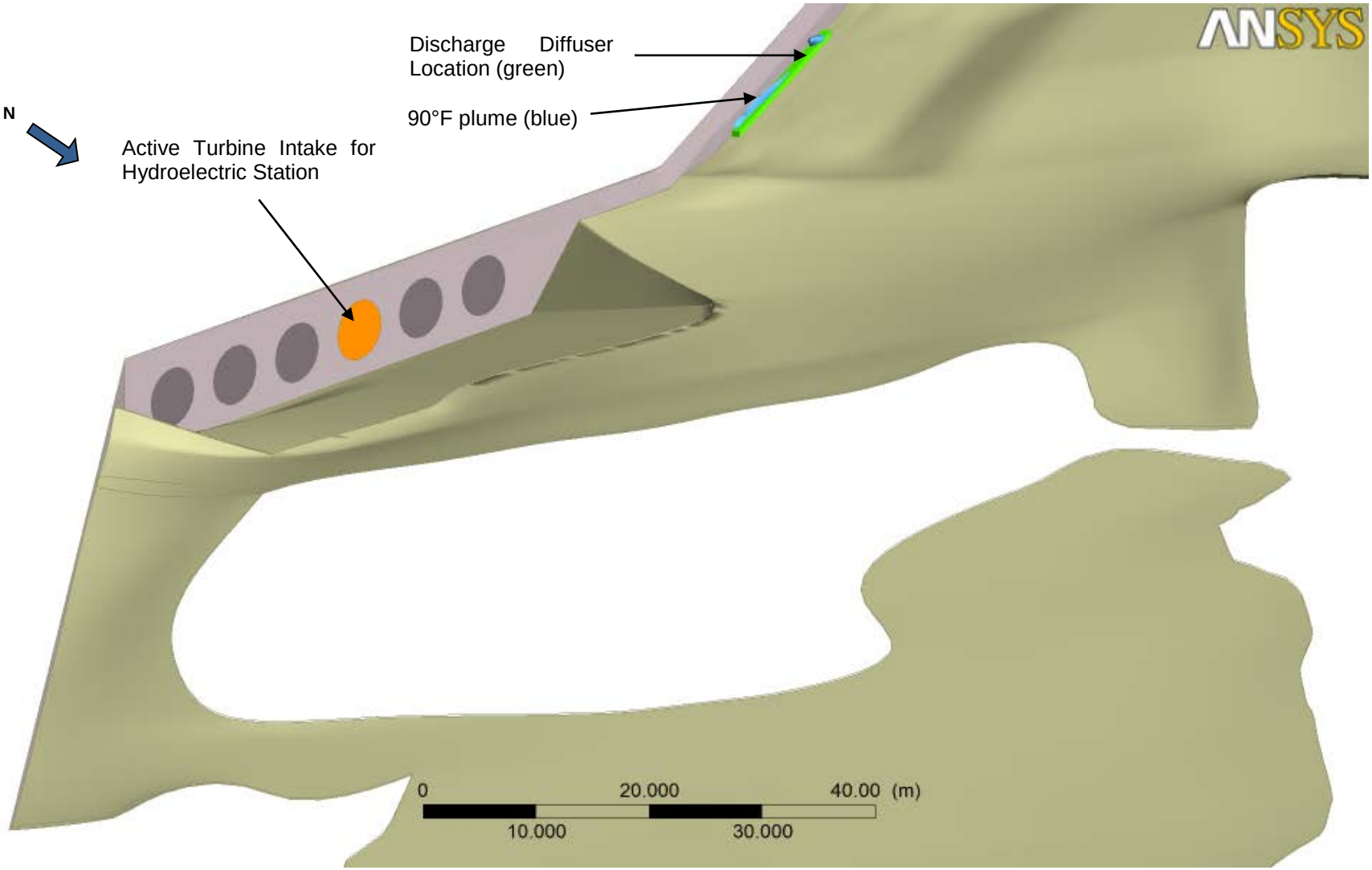


Figure 12 – Blue iso-surface showing steady-state 90°F plume for Scenario 2.

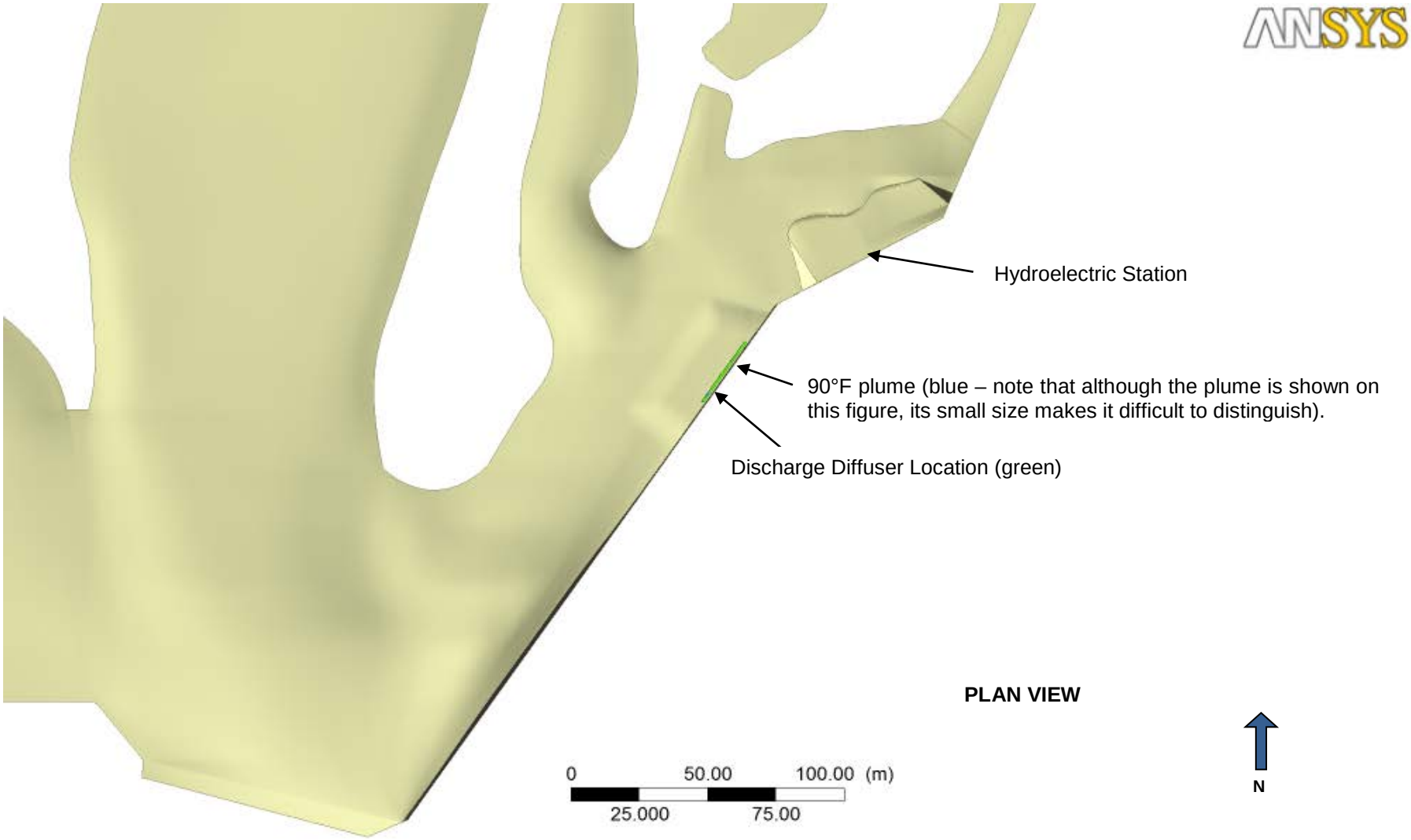


Figure 13 – Blue iso-surface showing steady-state 90°F plume for Scenario 2, plan view.

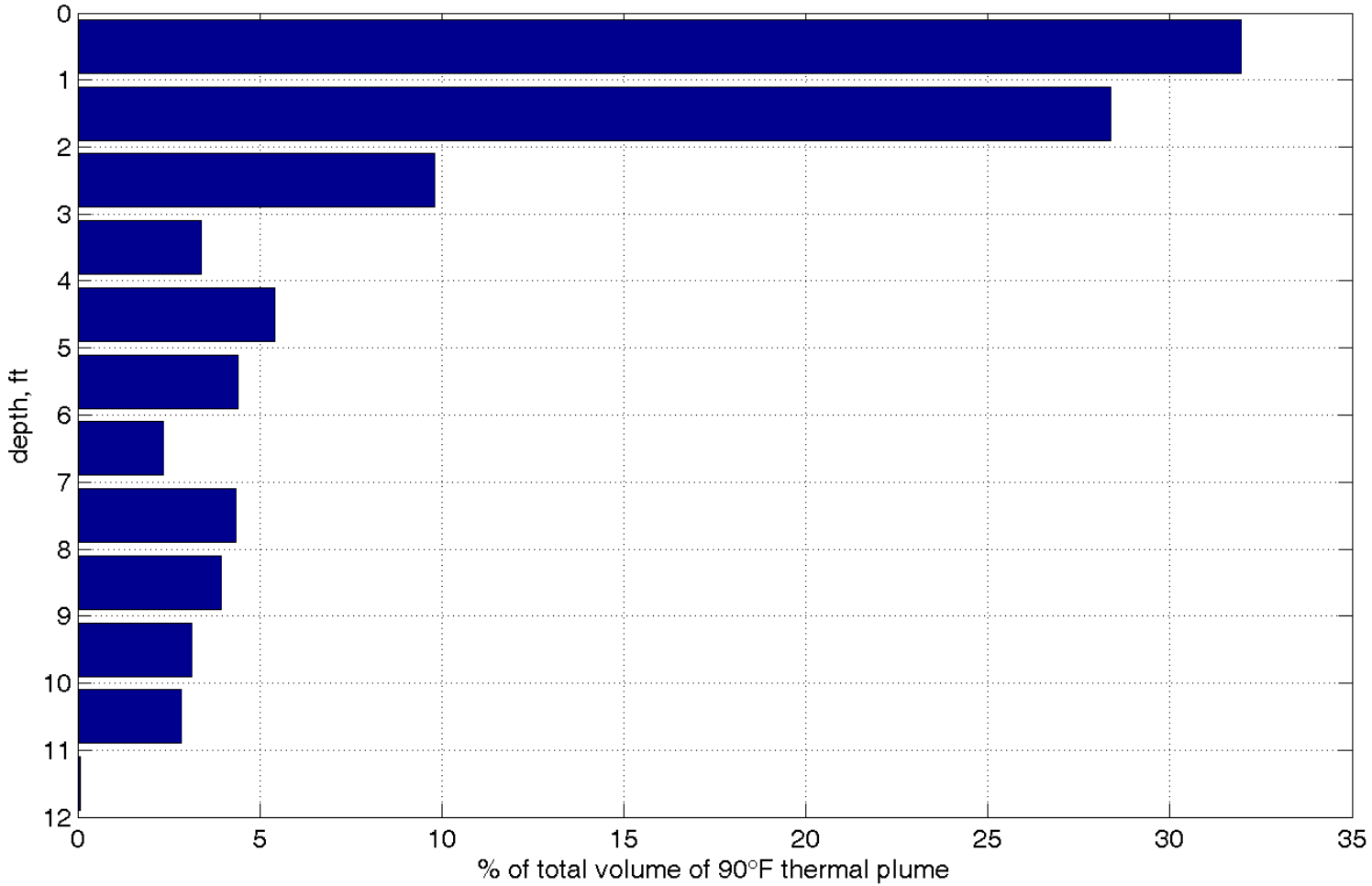


Figure 14 – Bar chart showing percent plume volume against depth for Scenario 1.

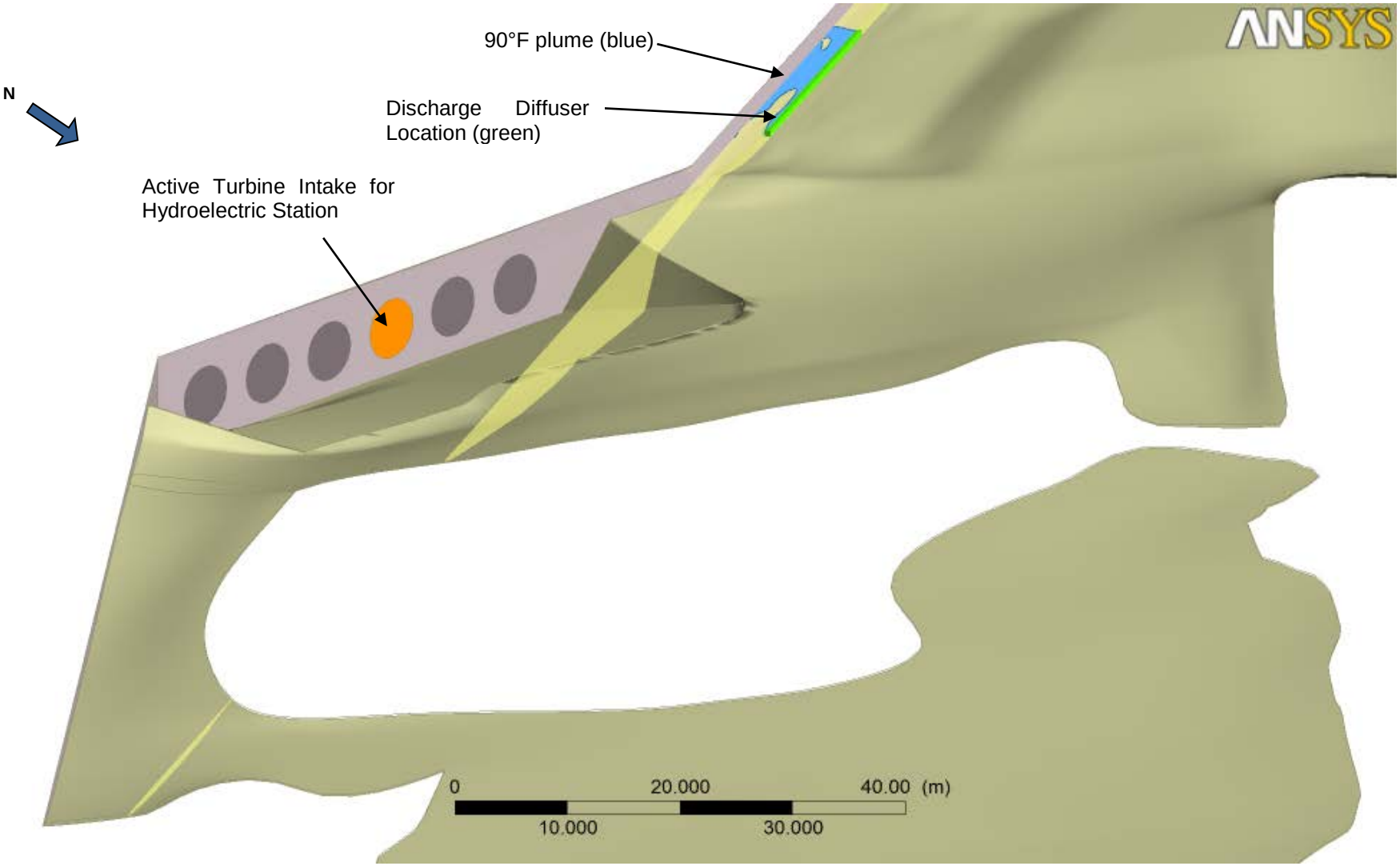


Figure 15 – Blue area showing cross-section of steady-state 90°F plume for Scenario 1.

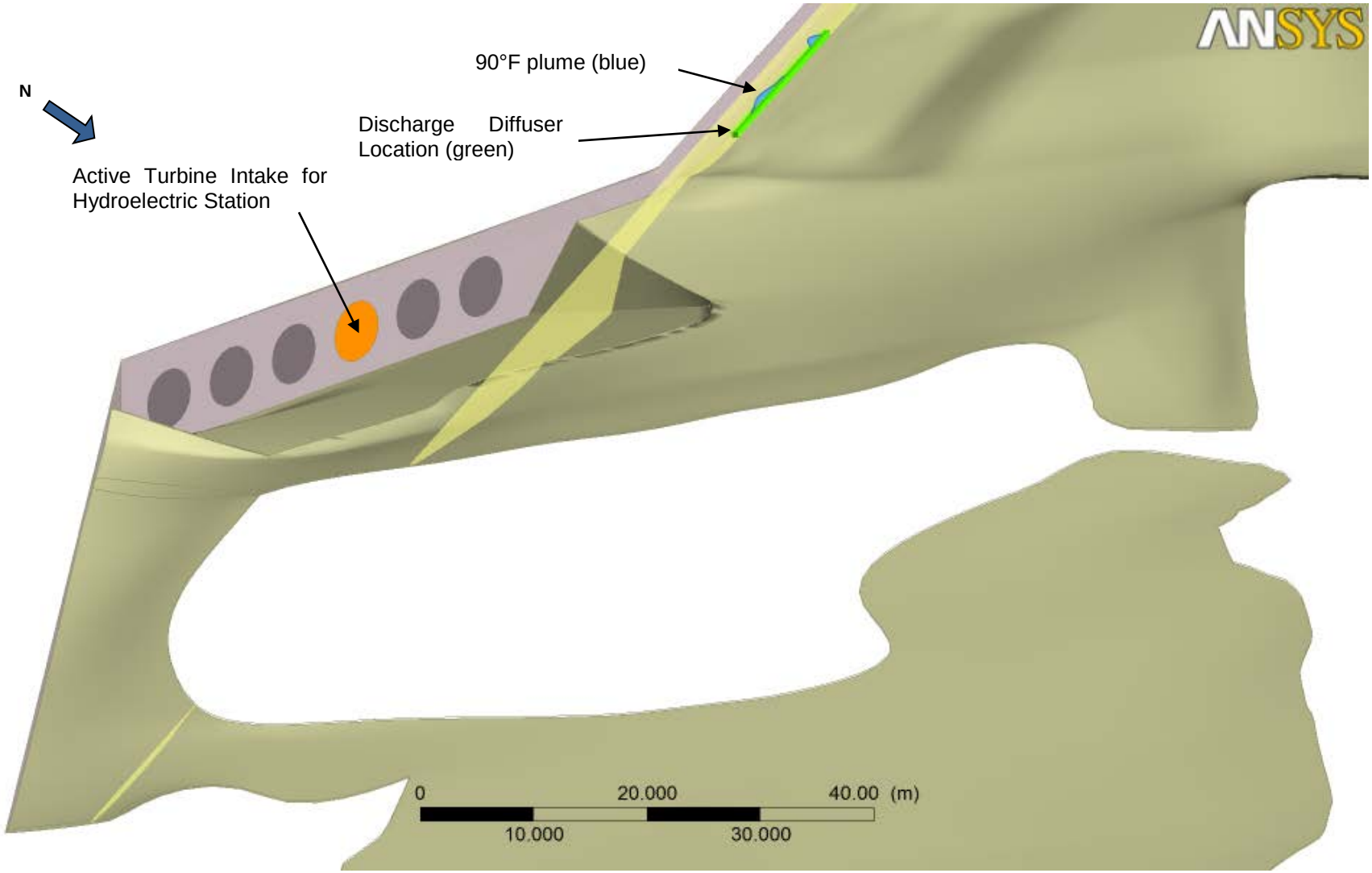


Figure 16 – Blue area showing cross-section of steady-state 90°F plume for Scenario 2.

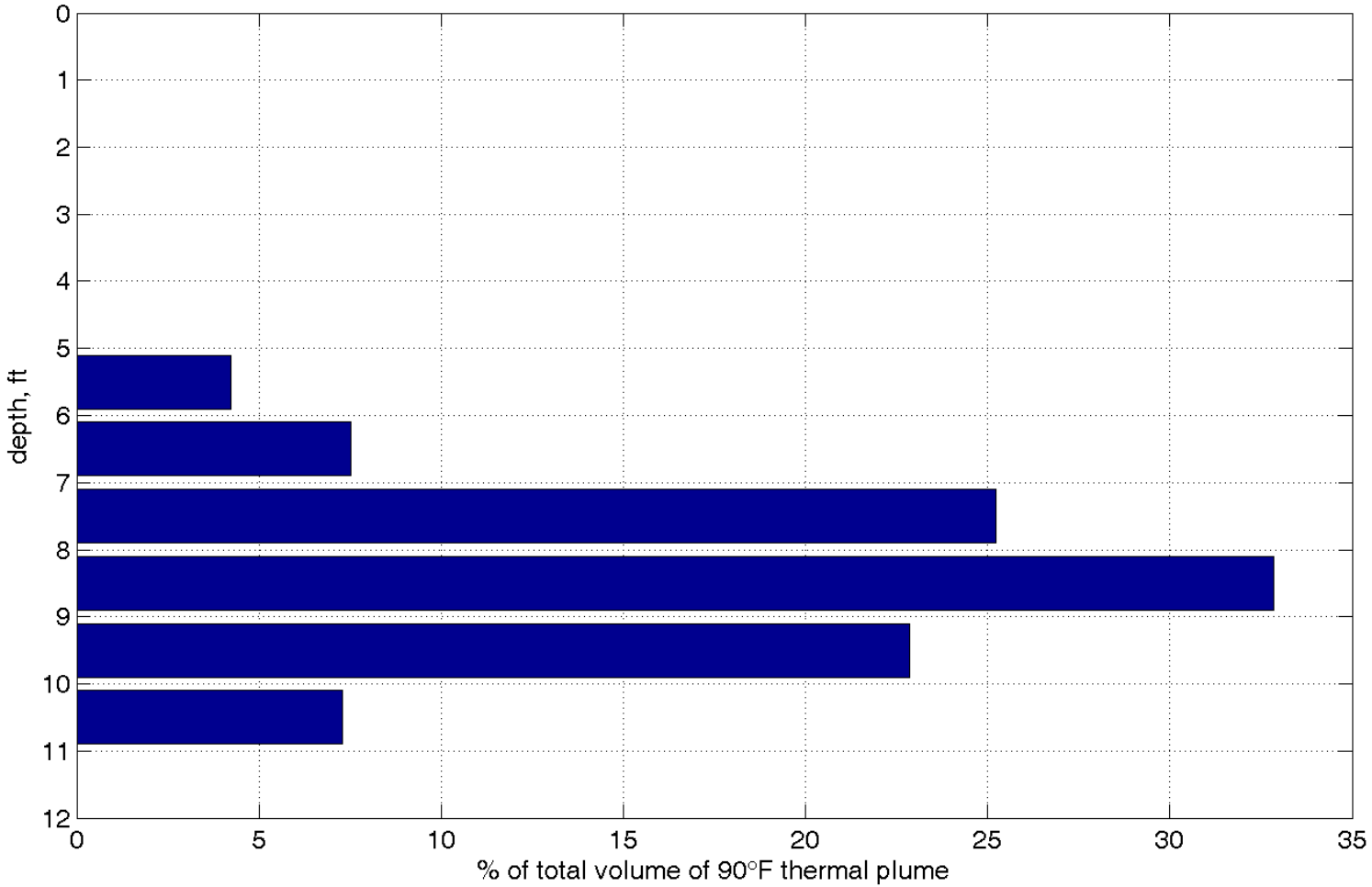


Figure 17 – Bar chart showing percent plume volume against depth for Scenario 2.

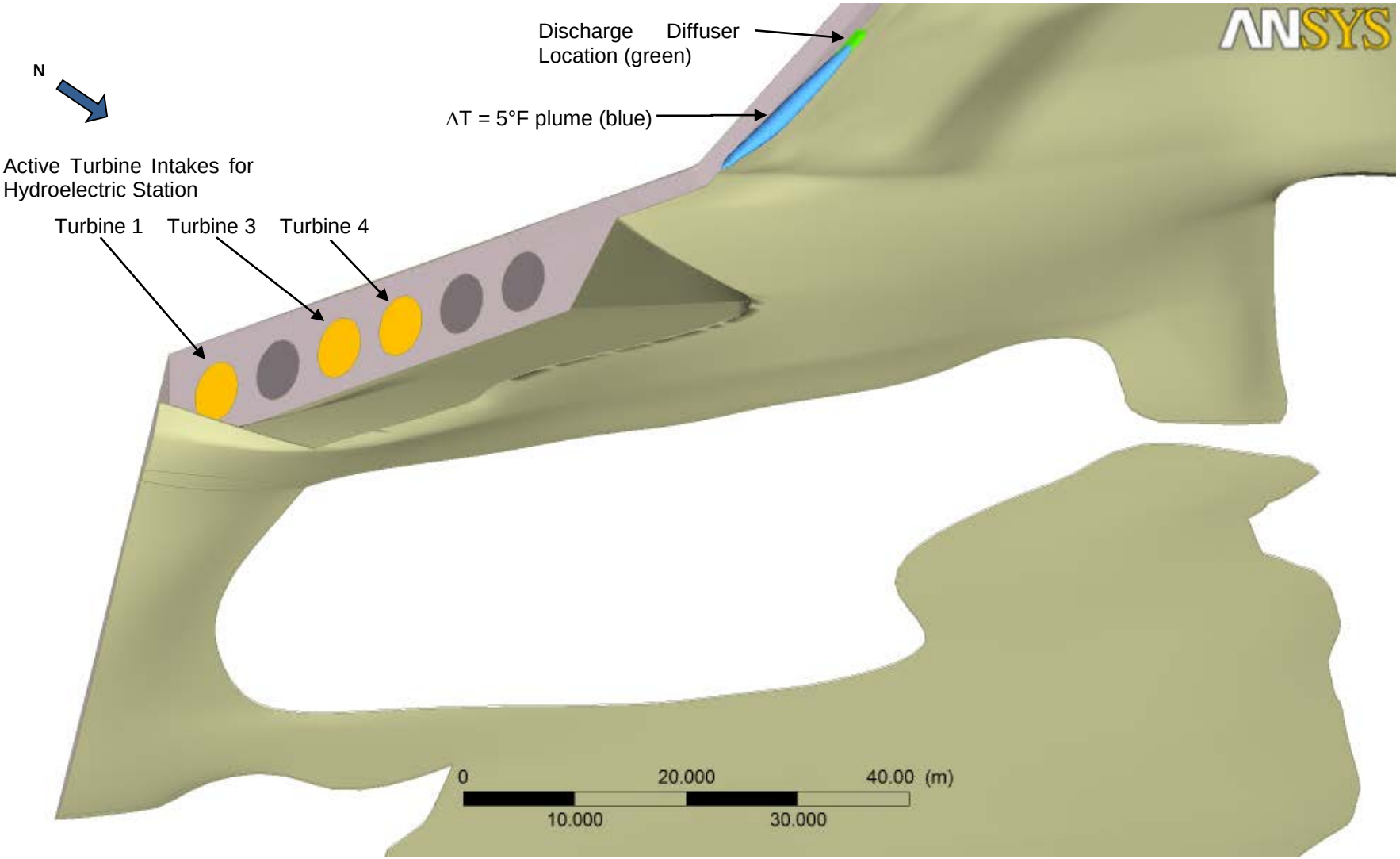


Figure 18 – Blue iso-surface showing steady-state ΔT = 5°F plume for Scenario 3.

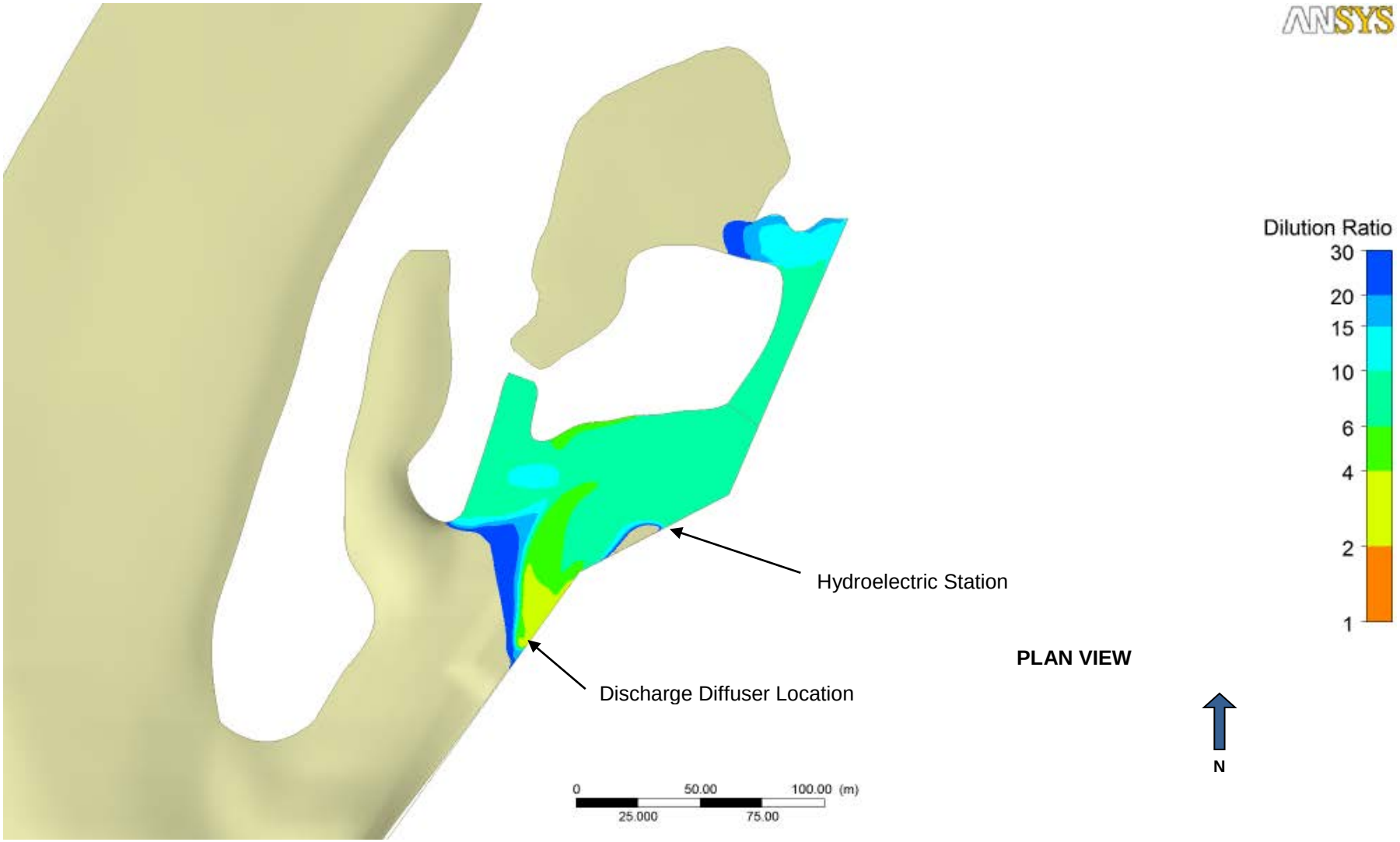


Figure 19 – Contours of dilution ratio for Scenario 1 (95° F discharge).

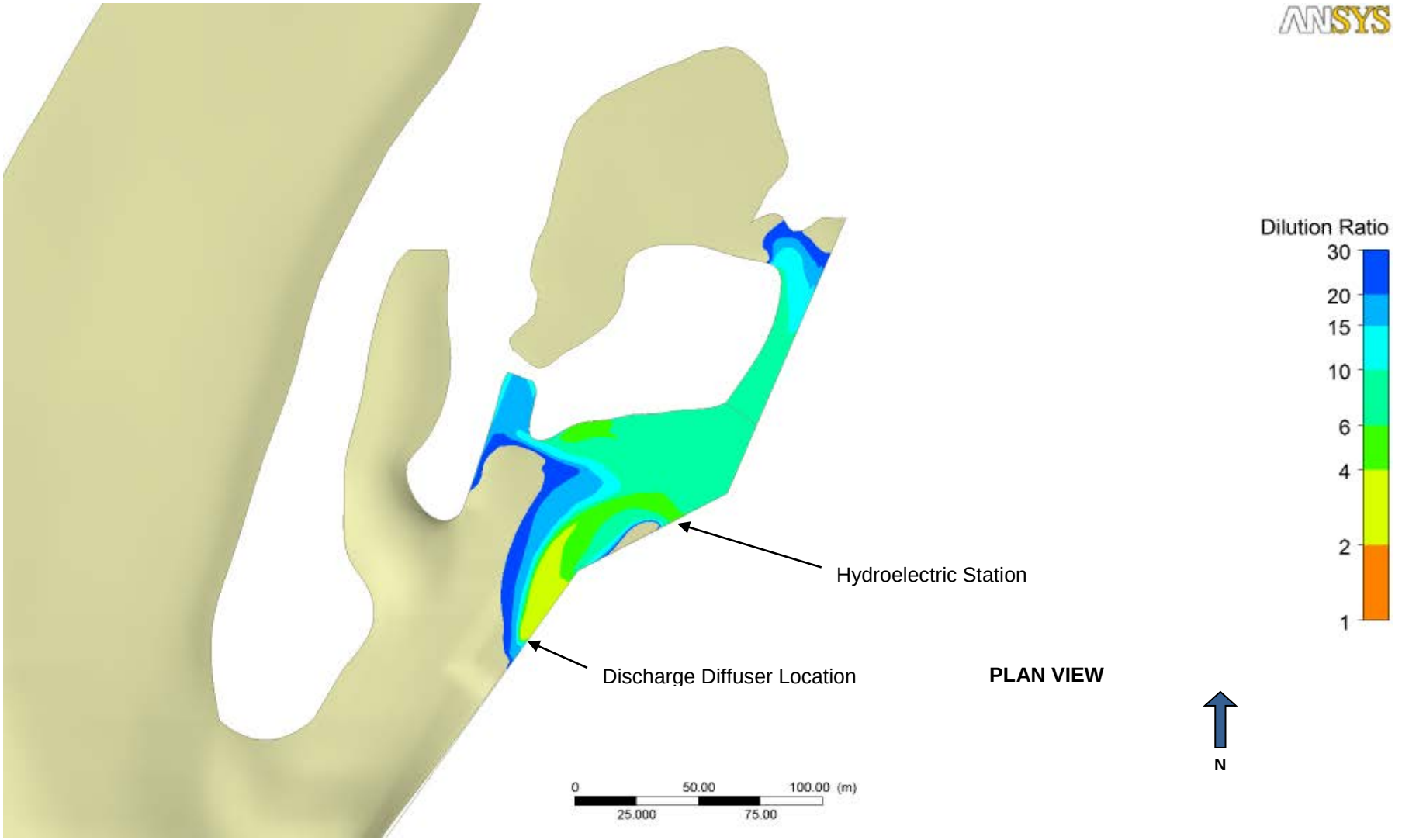


Figure 20 – Contours of dilution ratio for Scenario 2 (91° F discharge).

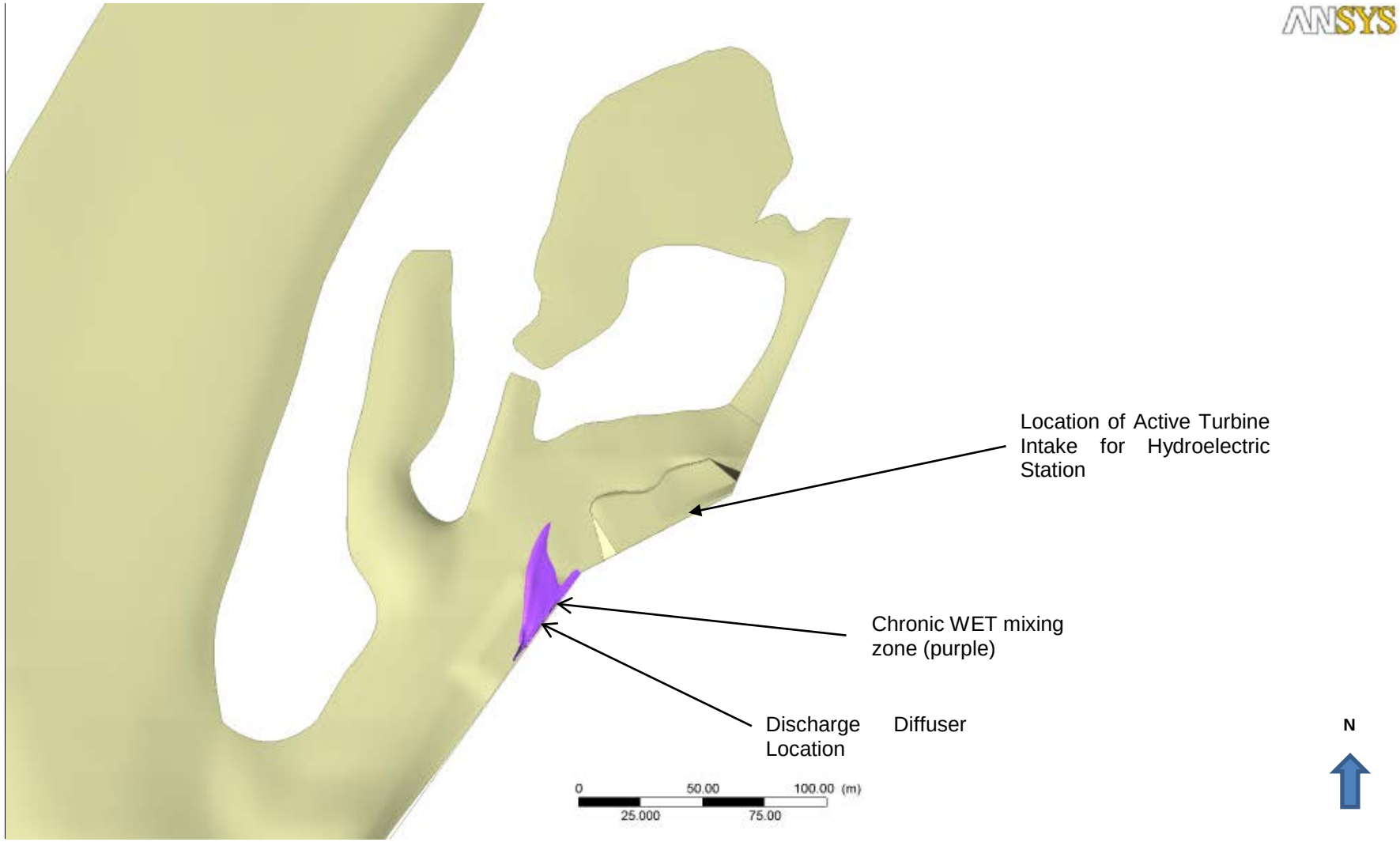


Figure 21 – Chronic mixing zone, 5:1 dilution ratio, for Scenario 1 (95° F discharge).

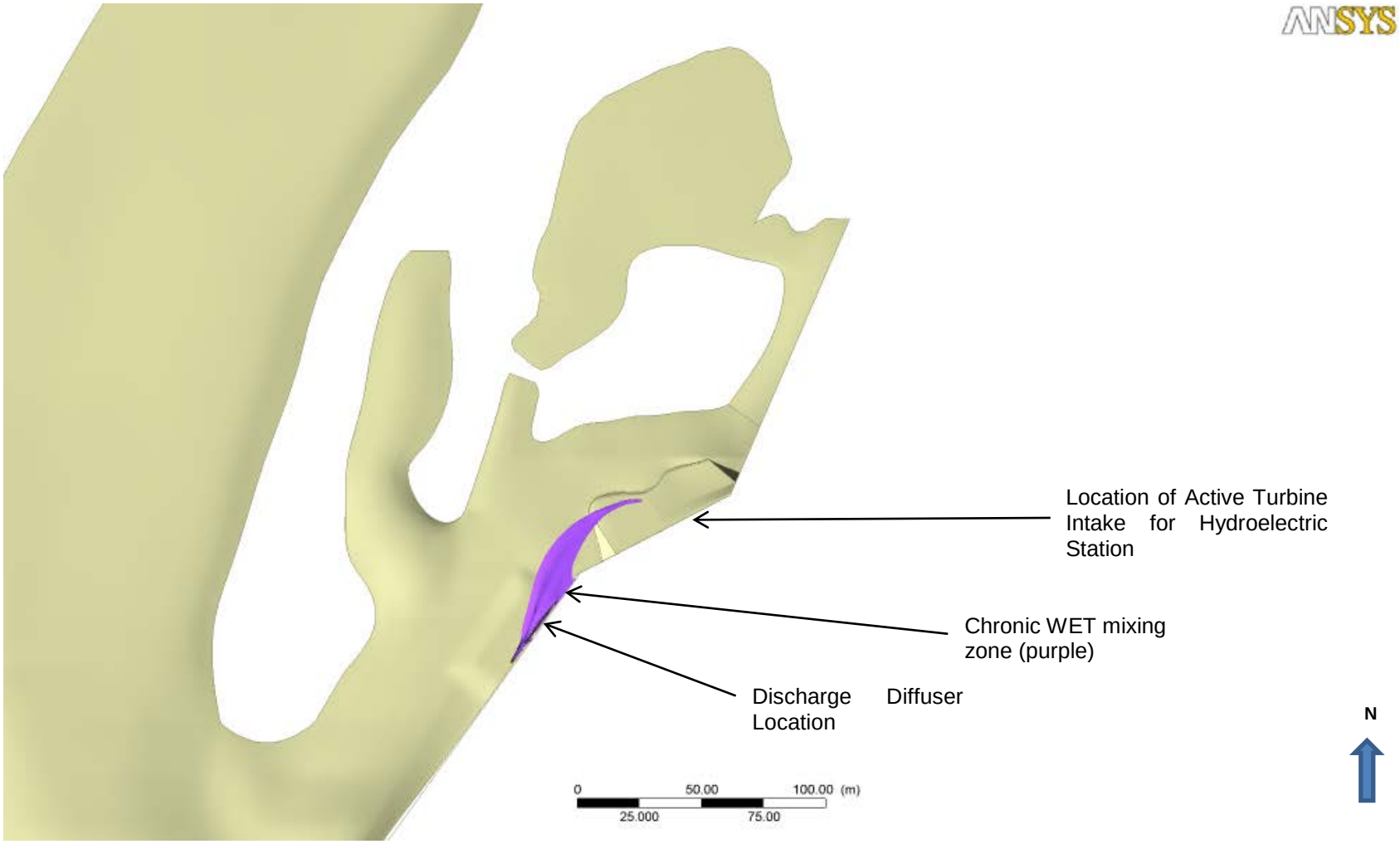


Figure 22 – Chronic mixing zone, 5:1 dilution ratio, for Scenario 2 (91° F discharge).

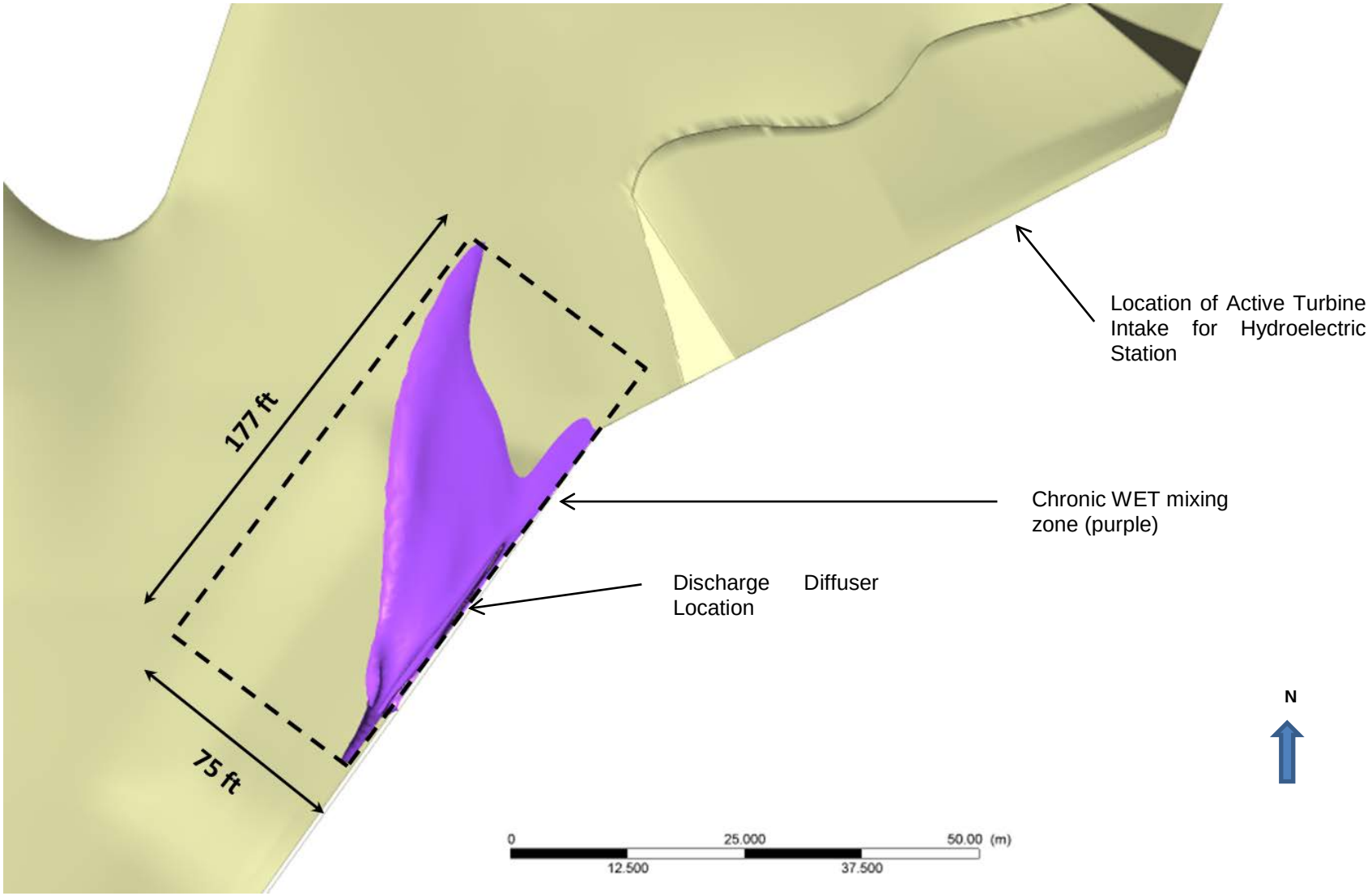


Figure 23 – Close up view of the chronic mixing zone local to the discharge diffuser and hydroelectric station, showing the plume dimensions for Scenario 1 (95° F discharge).

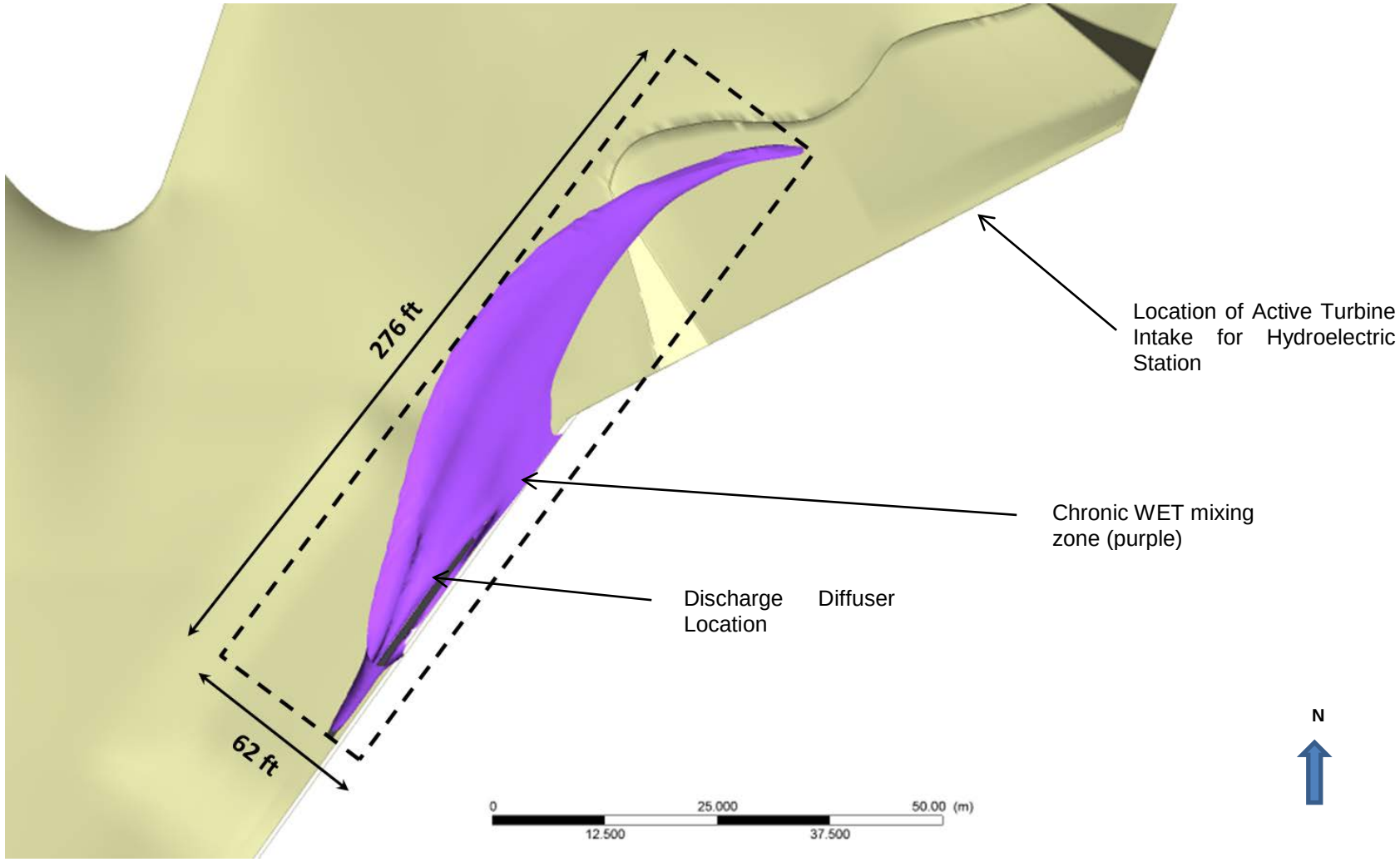


Figure 24 – Close up view of the chronic mixing zone local to the discharge diffuser and hydroelectric station, showing the plume dimensions for Scenario 2 (91° F discharge).