

Assignment 10:

1. Use the provided MATLAB code `hunt_3D_movie.m` to solve the 3D analytical instantaneous release equation of Hunt [1978]. As demonstrated in class, the code includes a 'well' vector that contains vertically averaged concentrations. Use it to plot the breakthrough curve.
2. Use MT3D (under Groundwater Vistas) to simulate the complete form of the CDE. Use MODFLOW to simulate the head field and use the default parameters for the aquifer properties. Run the simulation for 7000 days. Place a constant head/constant concentration boundary on the right hand side of the domain. Set the constant concentration of the boundary to 1. Place a pumping well ($Q = -10,000$) at row 25, column 10. Compute the heads. Print your result.
3. Use 'Add', 'Well' to include an analytical monitoring well on top of the pumping well. Set the pumping rate to 0 and check the 'Monitor Head/Concentration vs. Time' box. Solve the transport problem with MT3D. Use 'Plot', 'Hydrograph', 'Monitoring Well', 'Concentrations'. Plot the breakthrough curve at the well and compare to your results from Assignment 9.