

Justin Headley HW5 Figures HWRS 582 2/22/22

1. Challenge 1:
 - Equipotentials and flow lines for confined and unconfined simulations

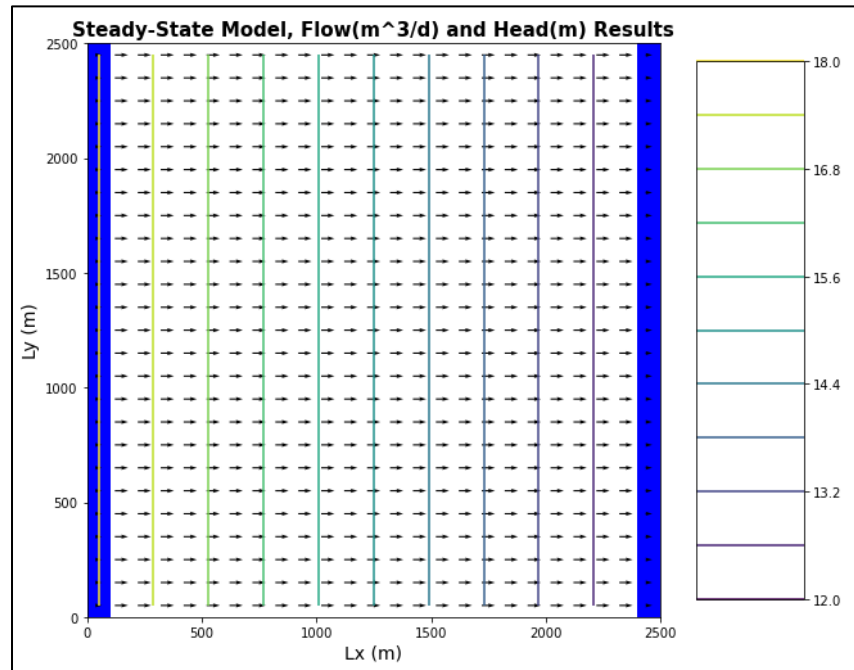


Figure 1: Confined - L Head 18m, R Head 12m Equipotentials and Flow Lines

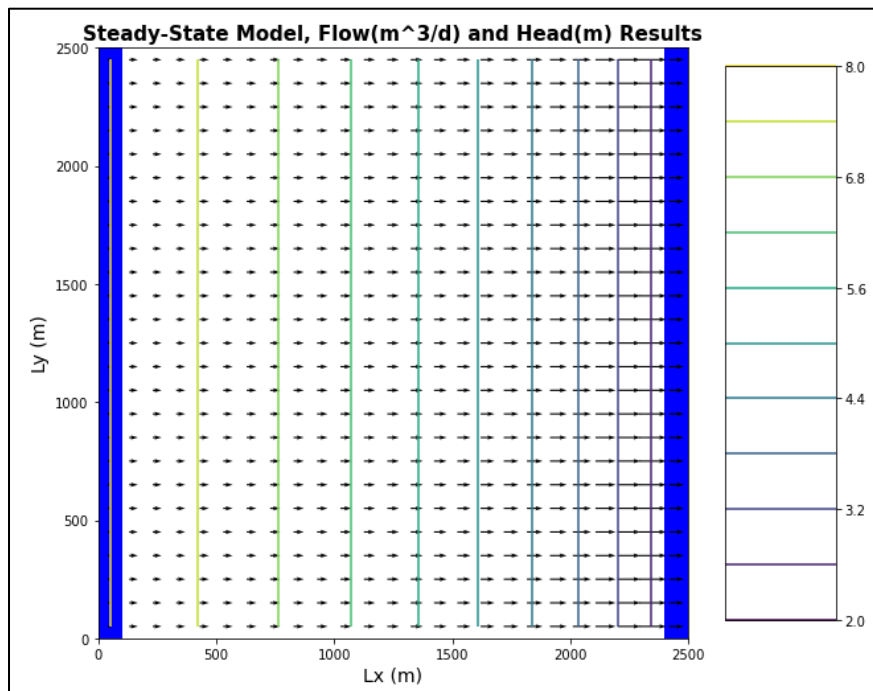


Figure 2: Unconfined - L Head 8m, Right Head 2m Equipotentials and Flow Lines

- Head difference between the two simulations

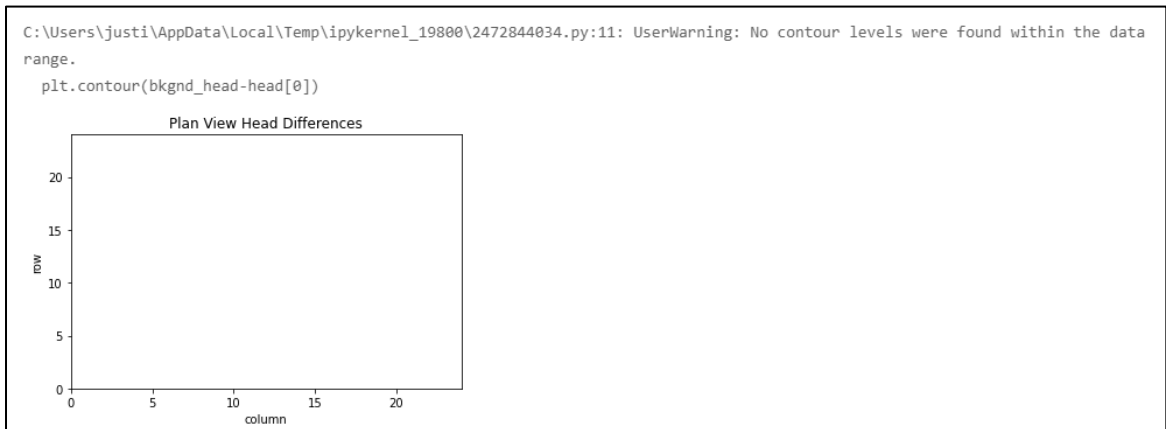


Figure 3: Confined Head Differences

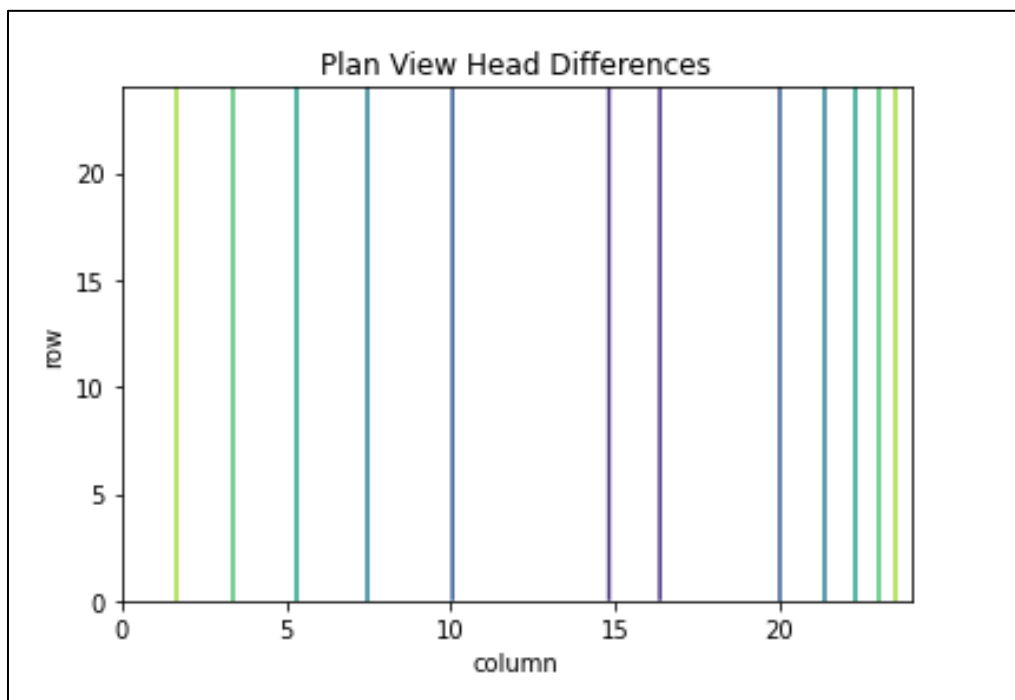


Figure 4: Unconfined Head Differences

Challenge 2:

- Report the total flux across the left and right boundaries for confined and unconfined simulations
- Plot the flux values for the left and right boundaries for both cases

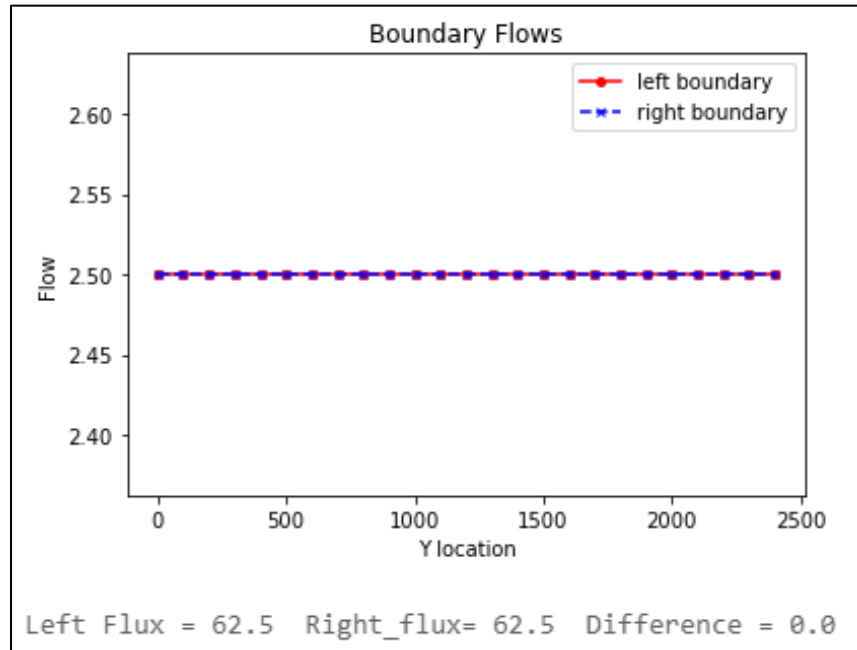


Figure 5: Confined Boundary Flows

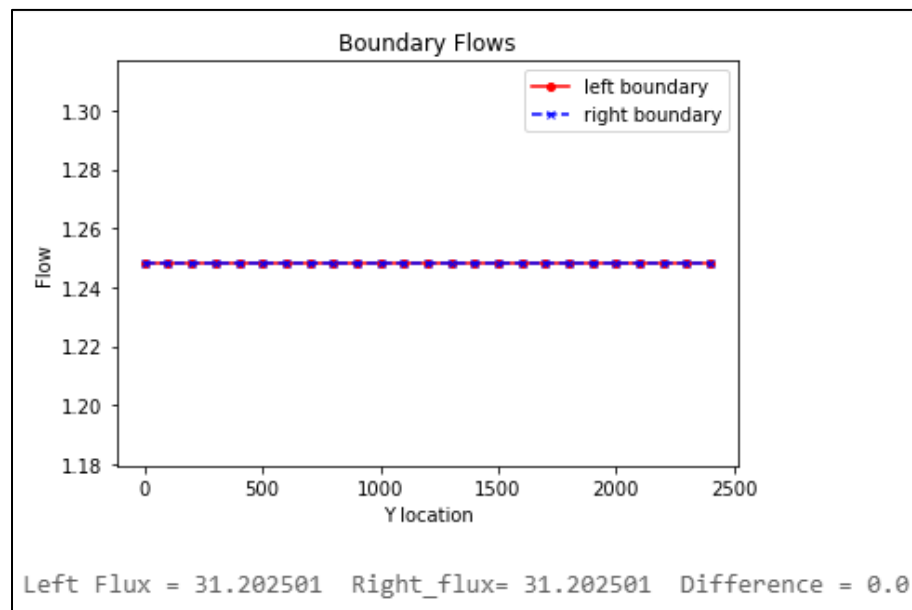


Figure 6: Unconfined Boundary Flow

Challenge 3:

- Head transect or equipotential lines for the recharge case

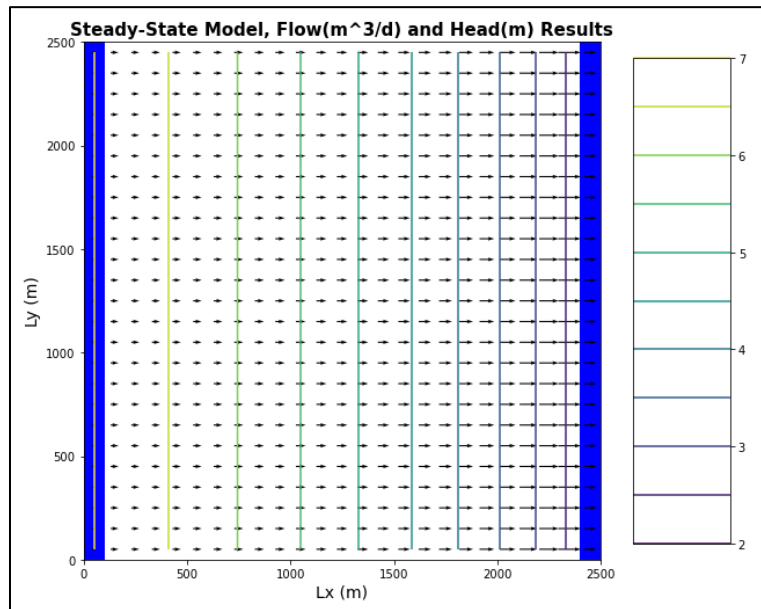


Figure 7: Uniform Recharge

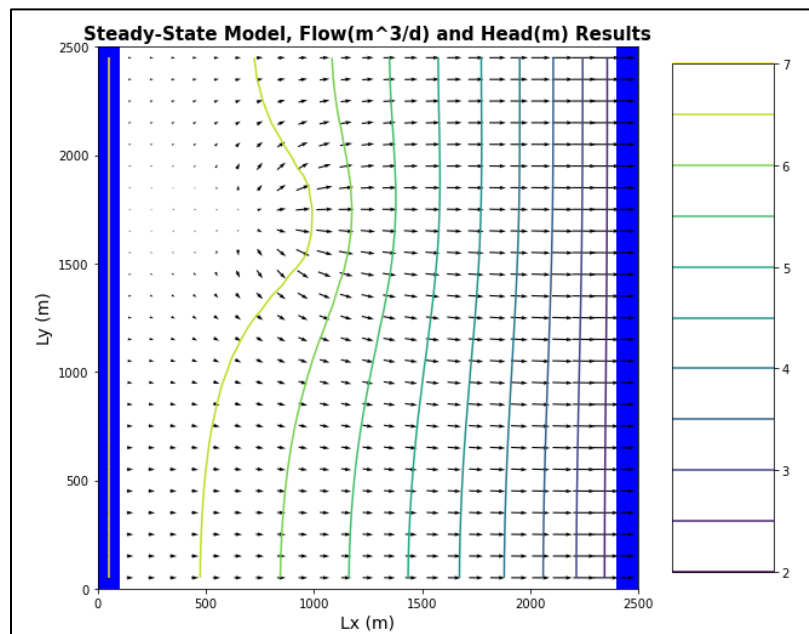


Figure 8: Recharge at [6,10]

- Plot the flux values for the left and right boundaries for both cases

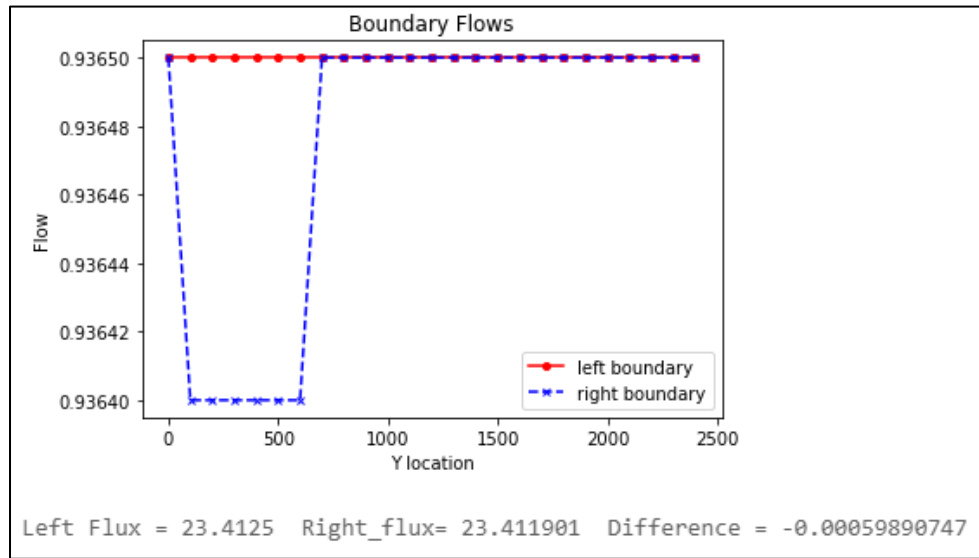


Figure 9: Uniform Recharge Flow

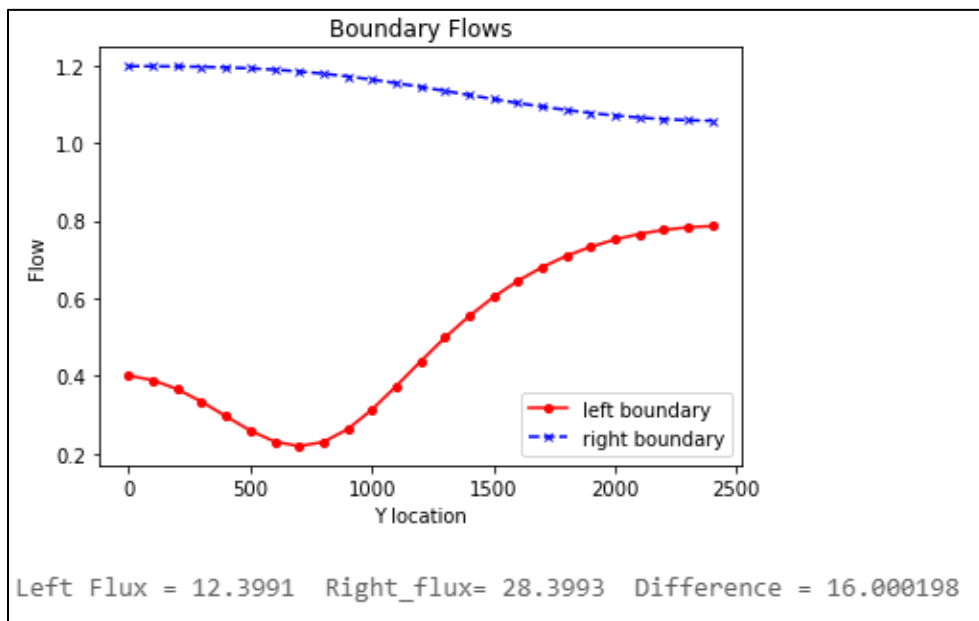


Figure 10: Flow with Recharge at [6,10]

Challenge 4:

- Report the total excess irrigation applied per year in m
- Report the total calculated irrigation per year and your assumed efficiency rate

Recharge Rate	0.0001	m/day
Excess Irrigation	0.0365	m/year
Cotton Requirement	0.28	in/day
Source: cottoninc.com	0.0071	m/day
Total Irrigation Rate		
Cotton Req + Excess	0.0072	m/day

- Plot the flux values and equipotential lines and annotate it with the potential contamination zone

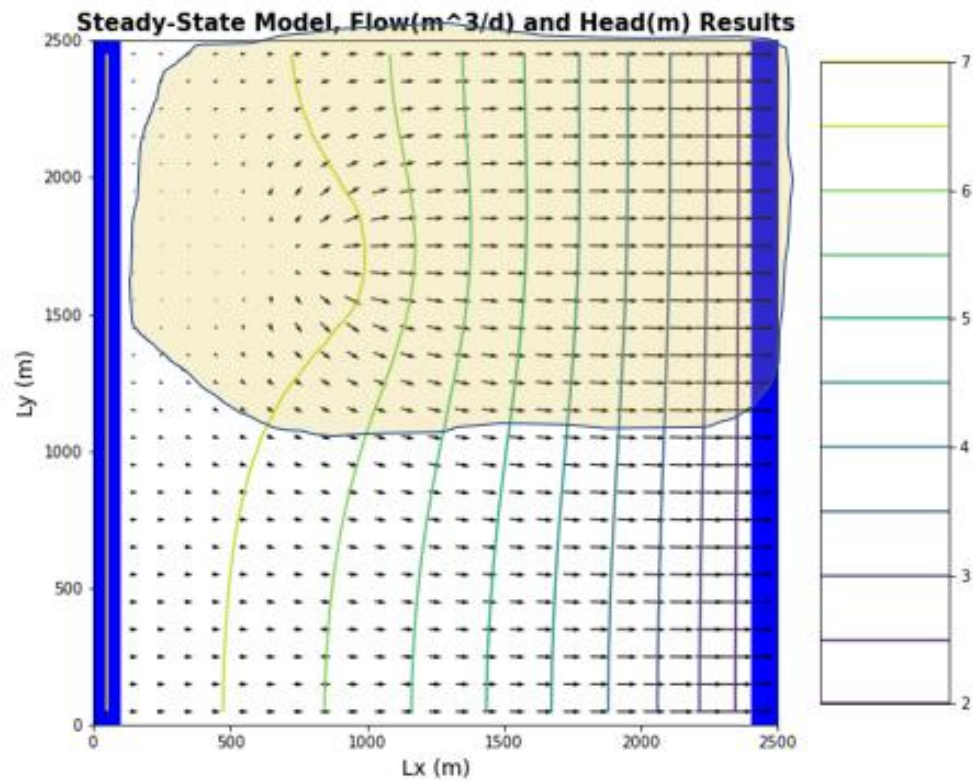


Figure 11: Amber is the contamination zone

Challenge 5:

- Plot the annotated flux plot showing contamination and capture zones in different colors

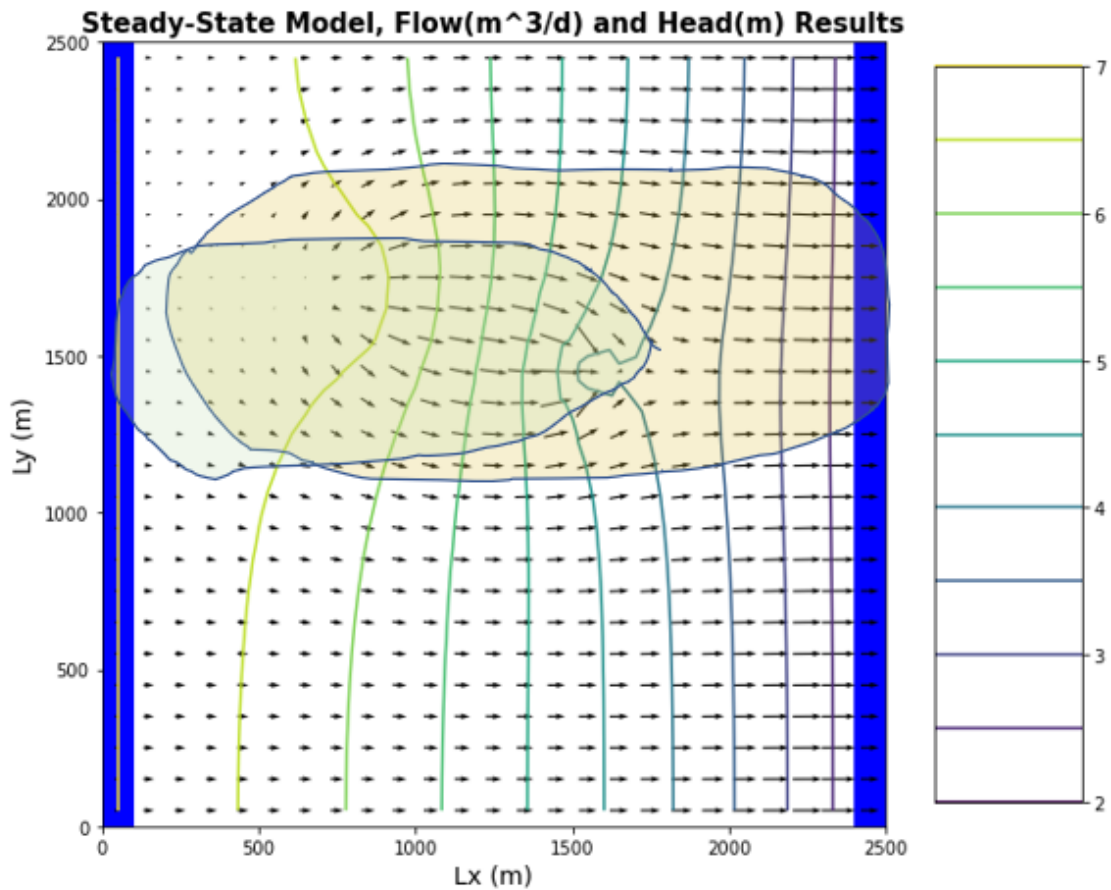


Figure 12: Amber is contamination zone, green is well capture zone