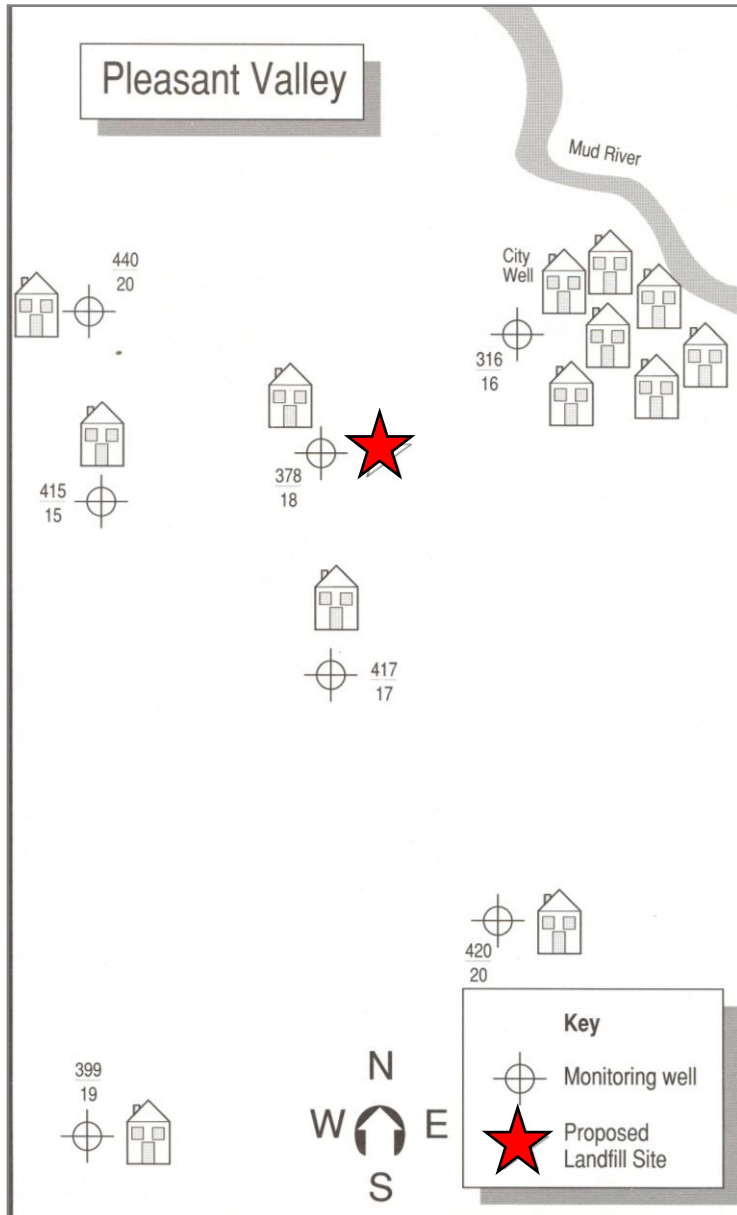


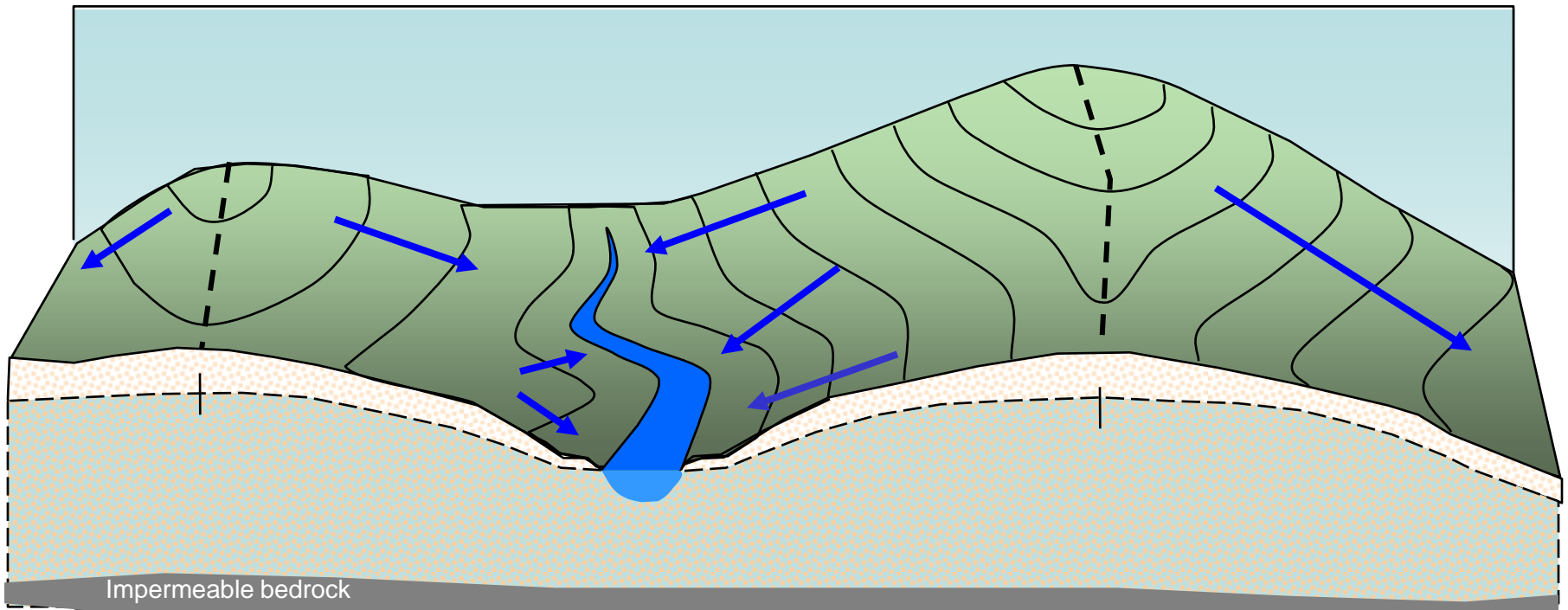
# It'll Go With the Flow

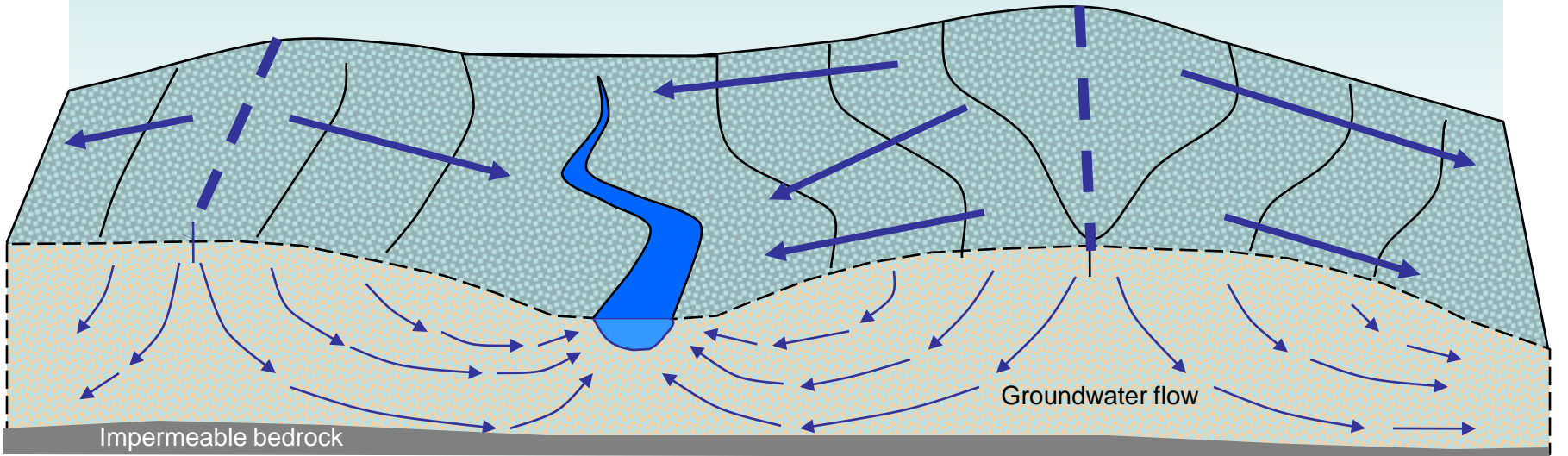
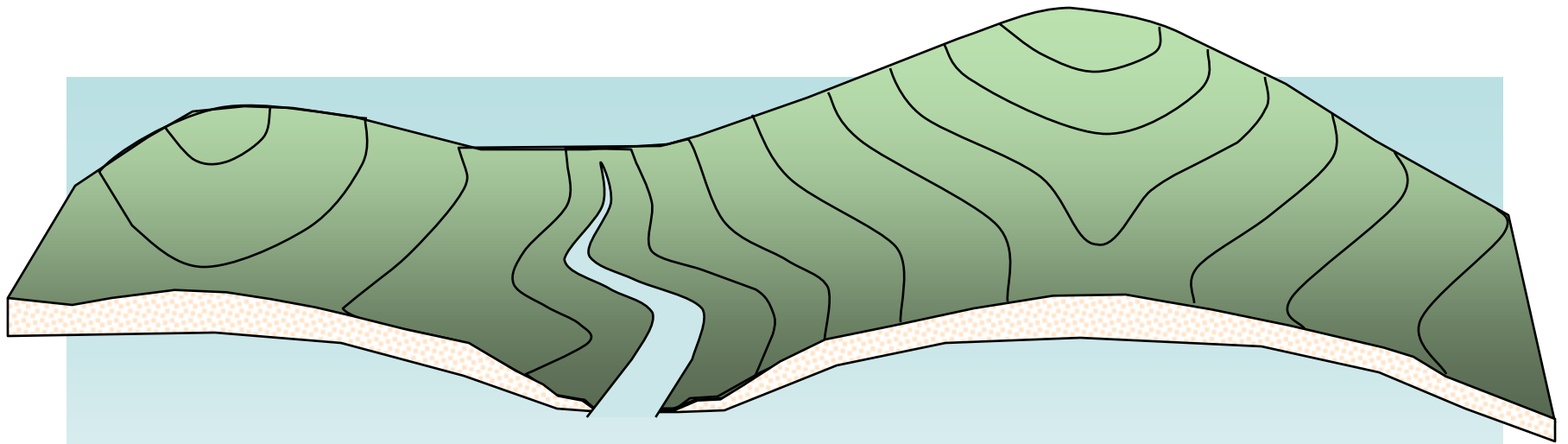
- **Goals:** To teach students how to construct a water table elevation contour map. To help students understand how such maps can be used to determine general groundwater flow patterns. To allow students to evaluate a hypothetical landfill site based on the direction of groundwater flow.
- **Subjects:** Environmental Ed., Science, Social Studies, Health Ed., Math,
- **Wisconsin Model Academic Standards:**
  - EE: A.8.2, A.8.4, B.8.17, B.8.18, D.8.1
  - SC: A.8.1, C.8.6, D.8.6, E.8.1, H.8.3
  - SS: A.8.1, C.8.7
  - HE: A.8.2, B.8.4, C.8.3
  - M: E.8.4
- **Grades:** 7 - 9

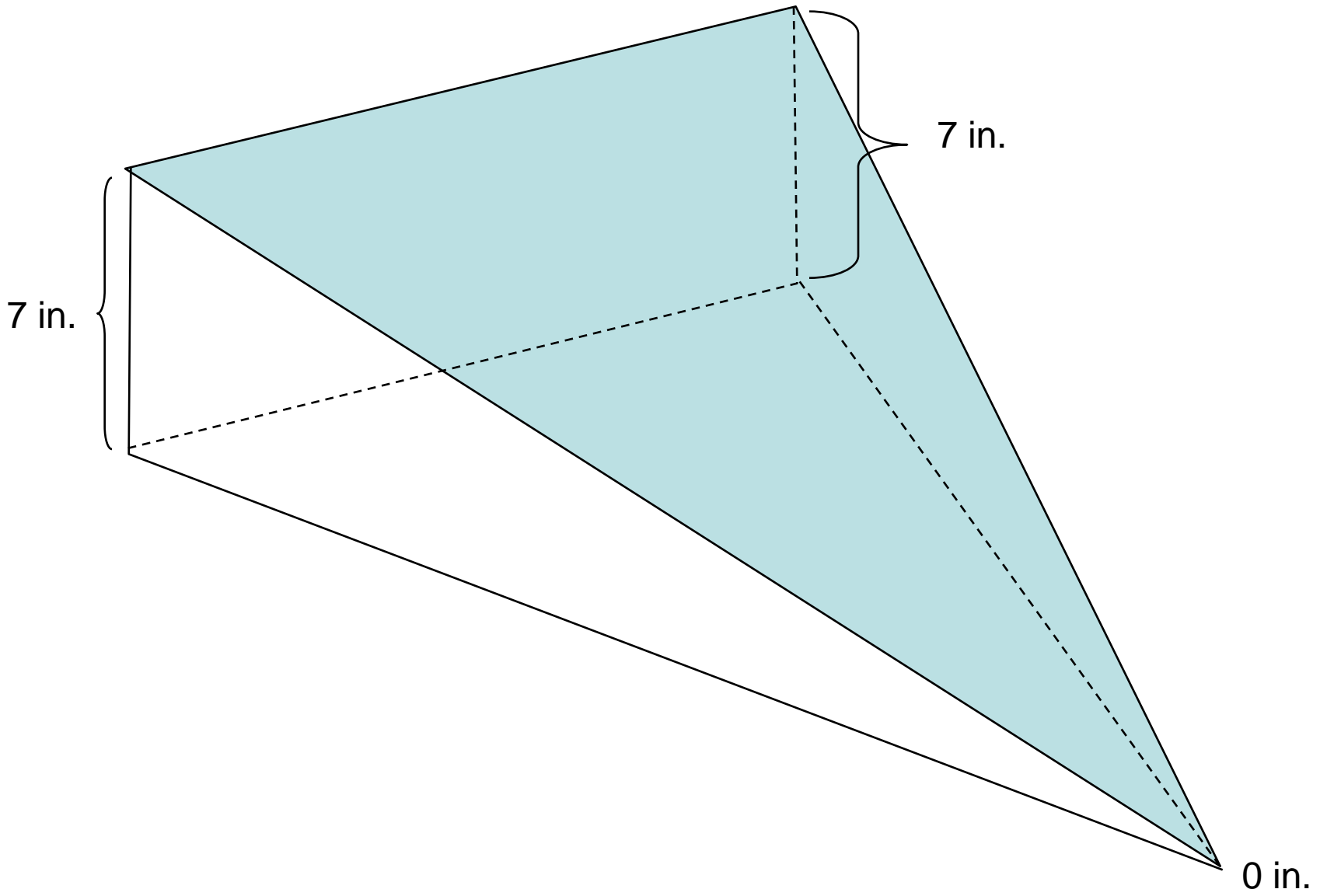
# It'll Go With the Flow....

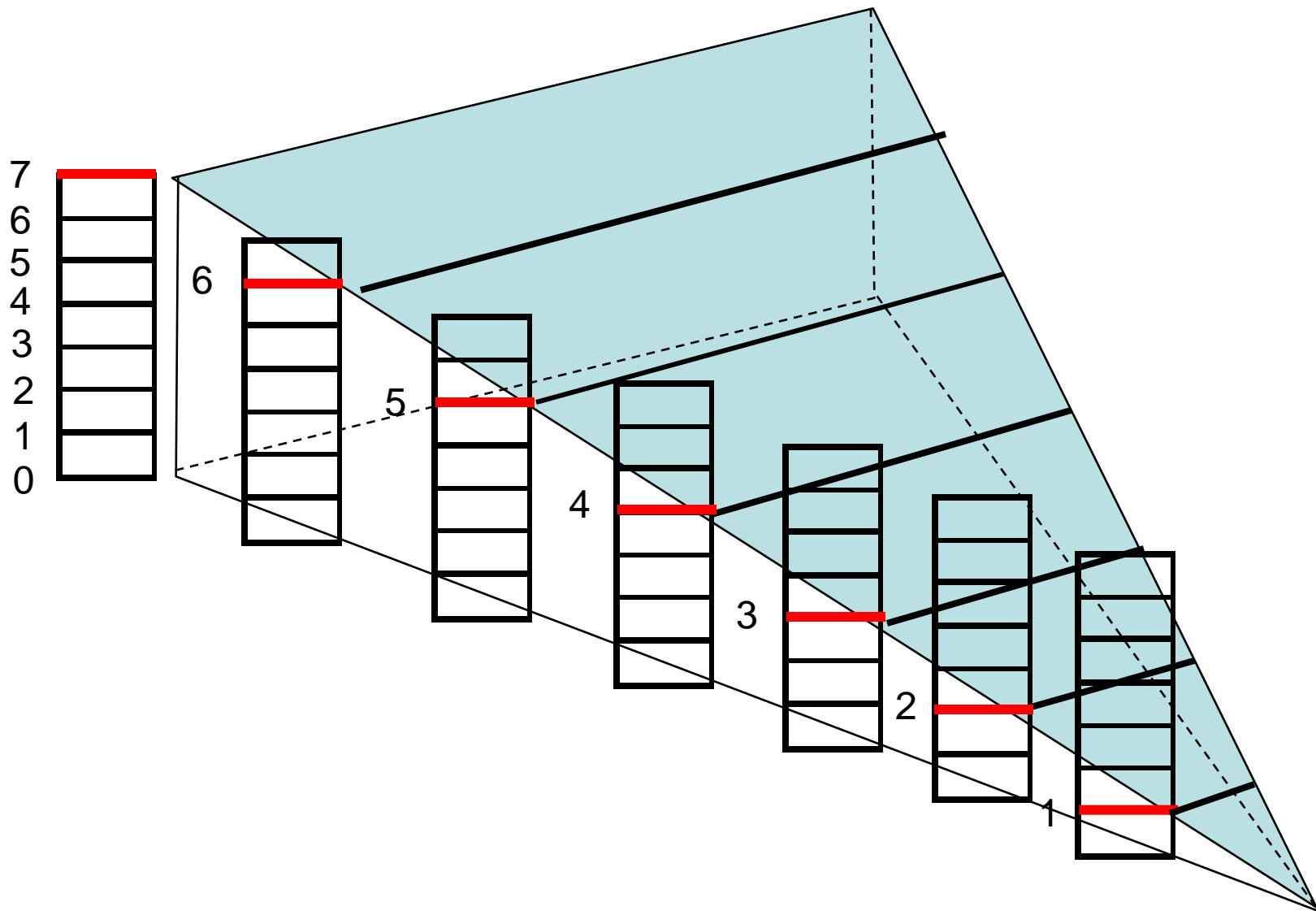


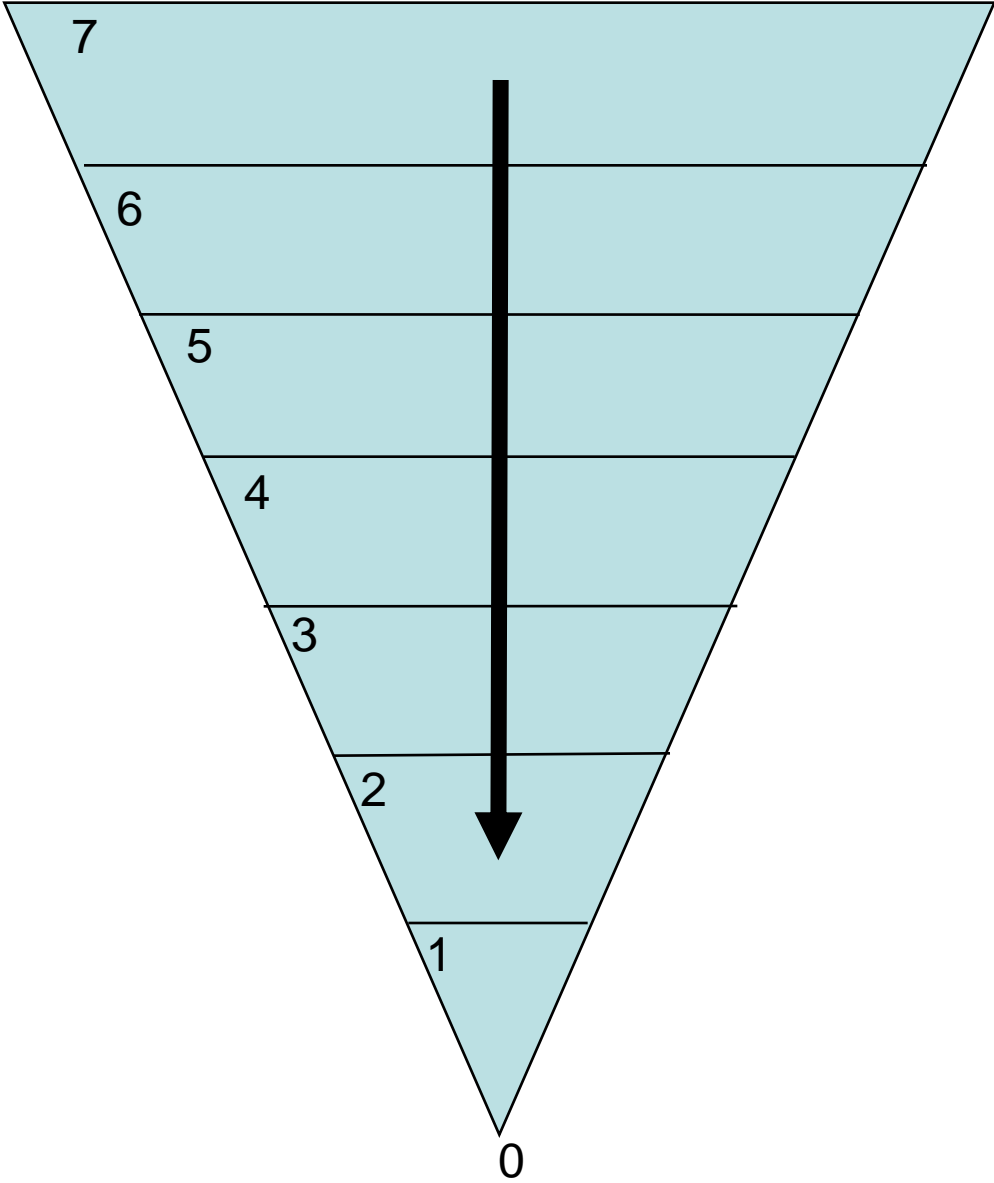
- Pleasant Valley is proposing to build a new landfill just outside of the city limits. You have just been hired by a local engineering firm to evaluate the proposed landfill site and give your recommendations to the local officials in Pleasant Valley.

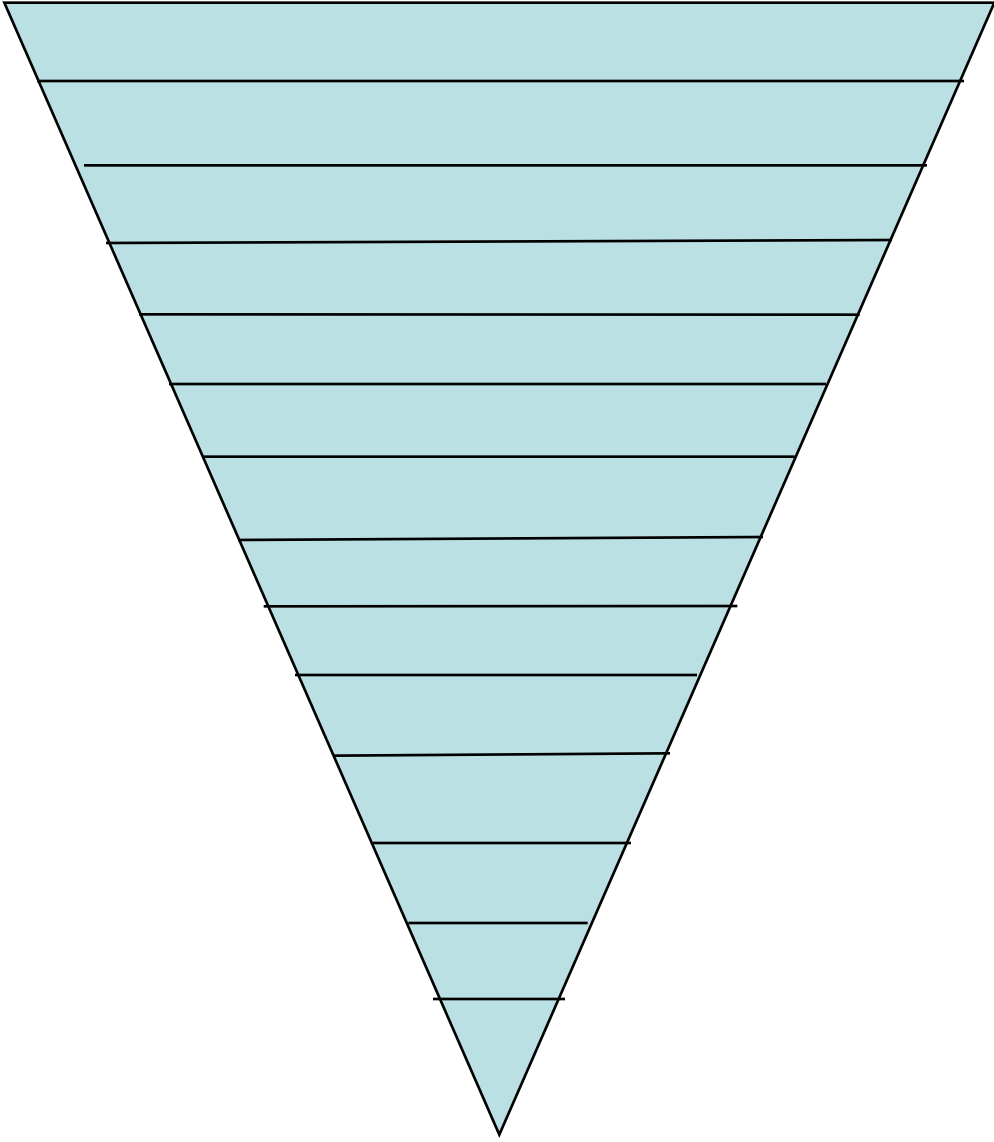






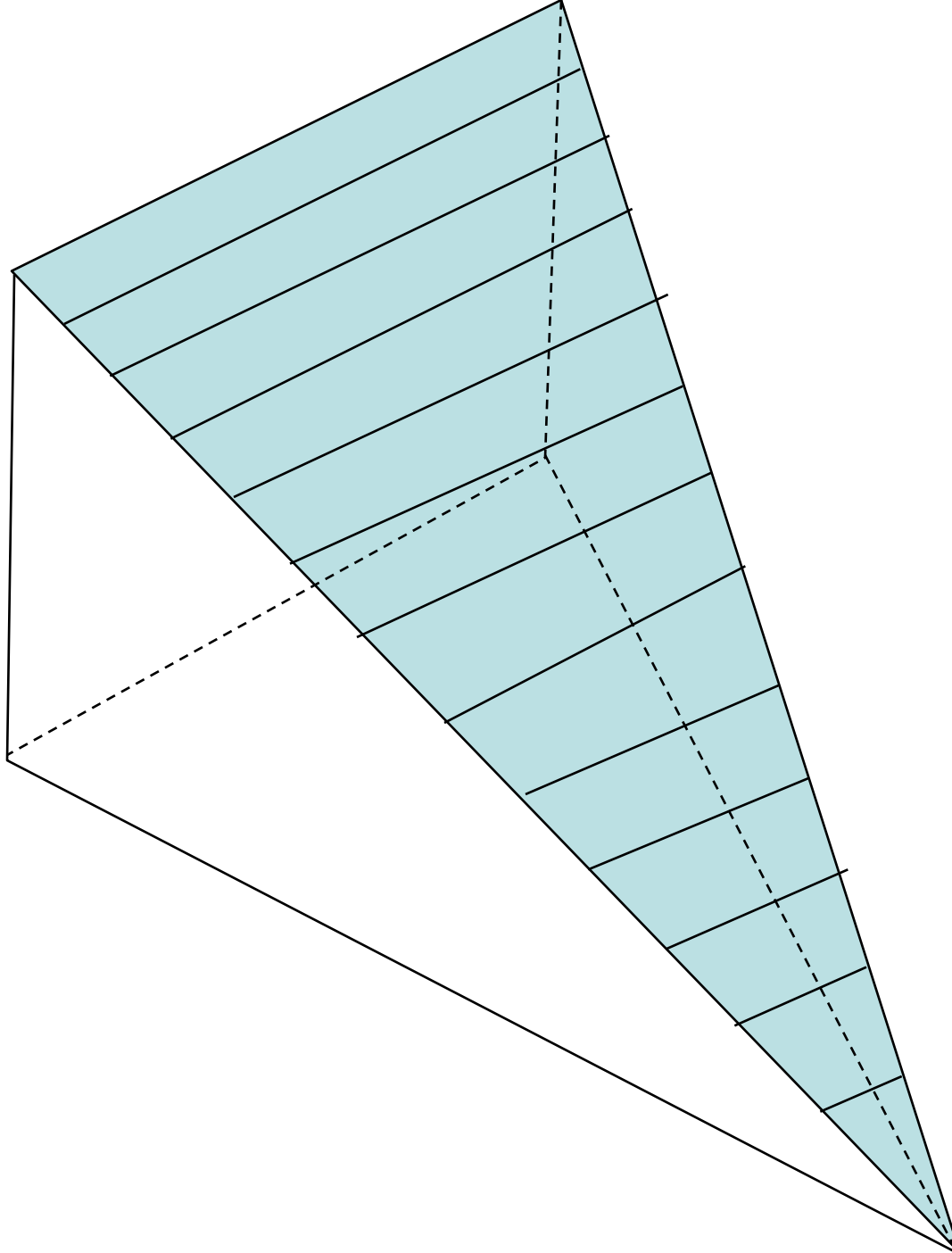


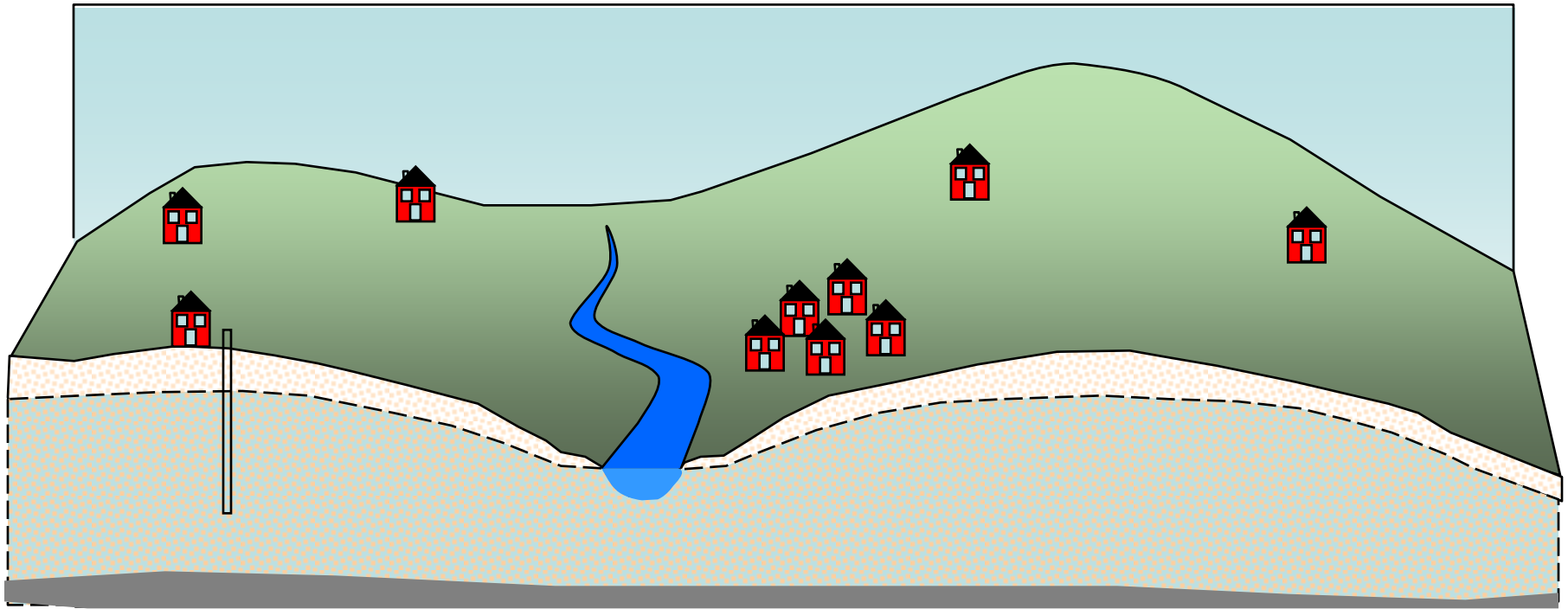




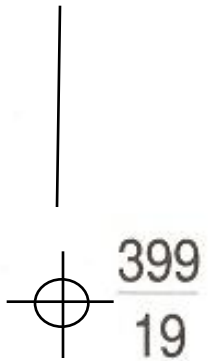


14 in.





Symbol for a well



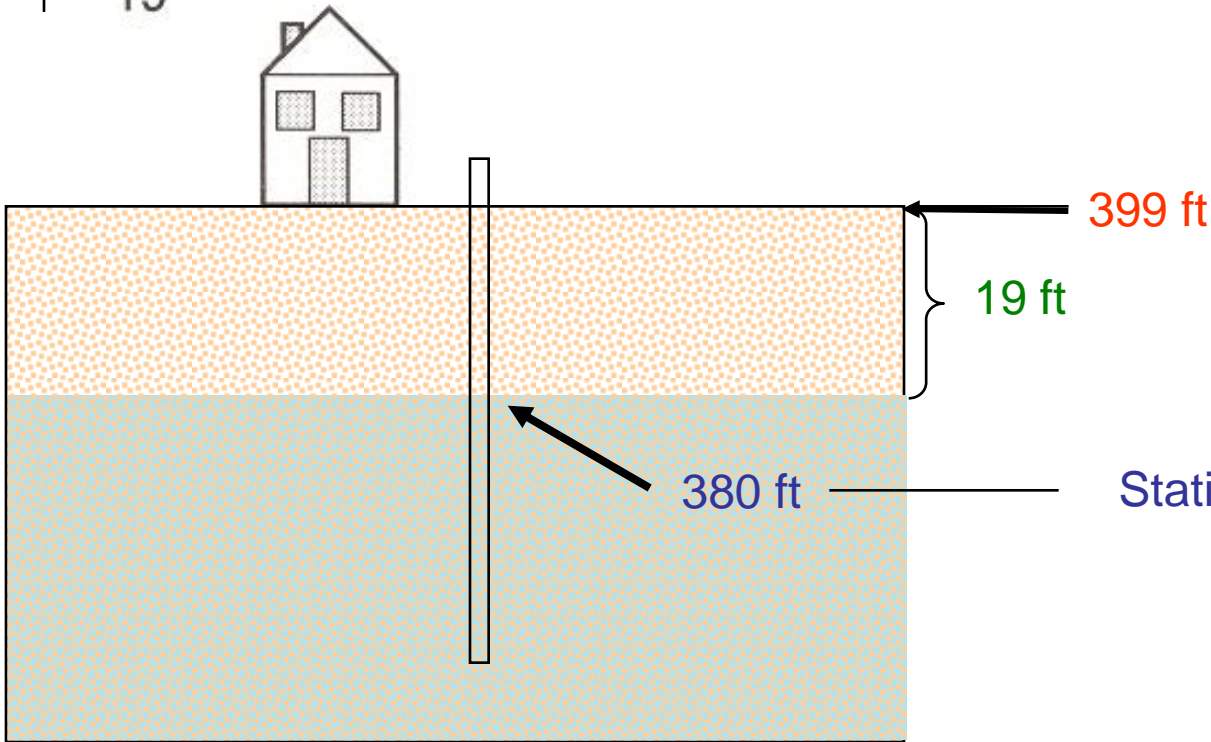
Elevation above sea level

399 ft

Depth to Water Table

-19 ft

380 ft



Static Water Level

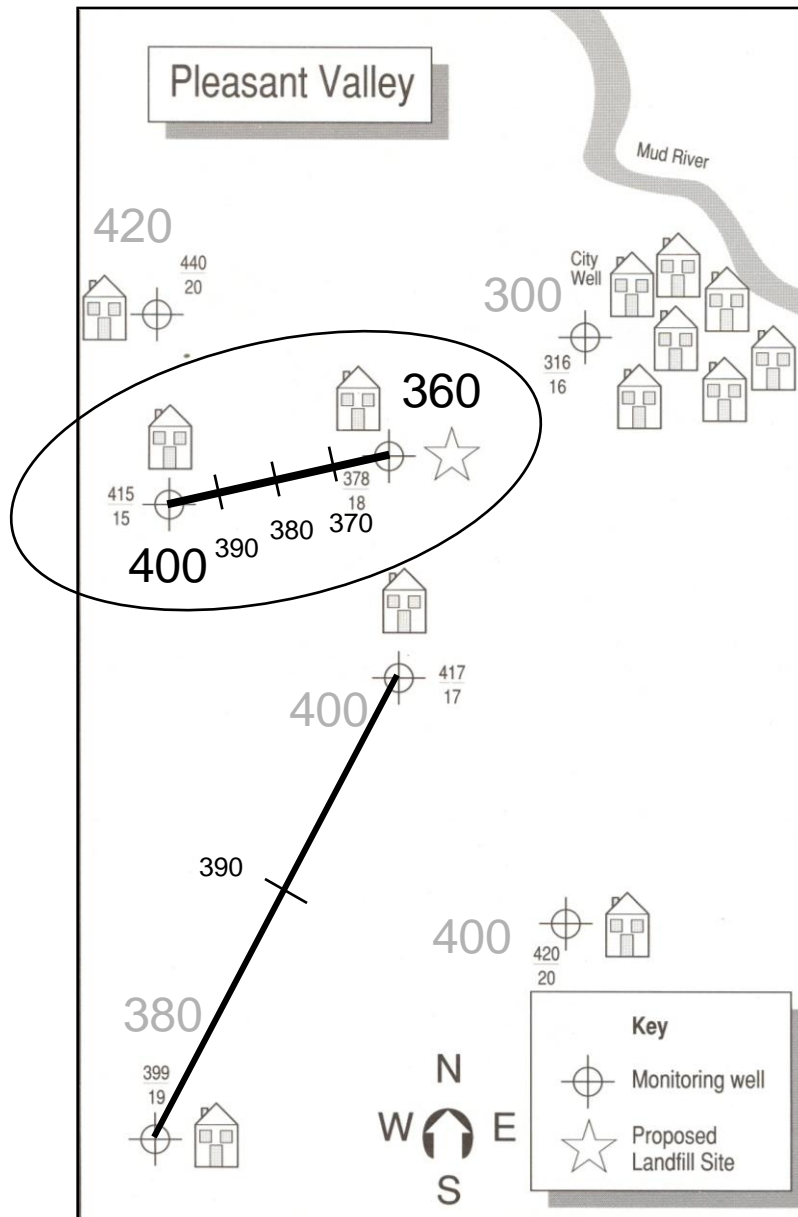
1. Calculate the number of 10 ft contour intervals between two adjacent wells.

$$400 \text{ ft} - 360 \text{ ft} = 40 \text{ ft.}$$

$$40 \text{ ft} / 10 \text{ ft} = 4 \text{ intervals}$$

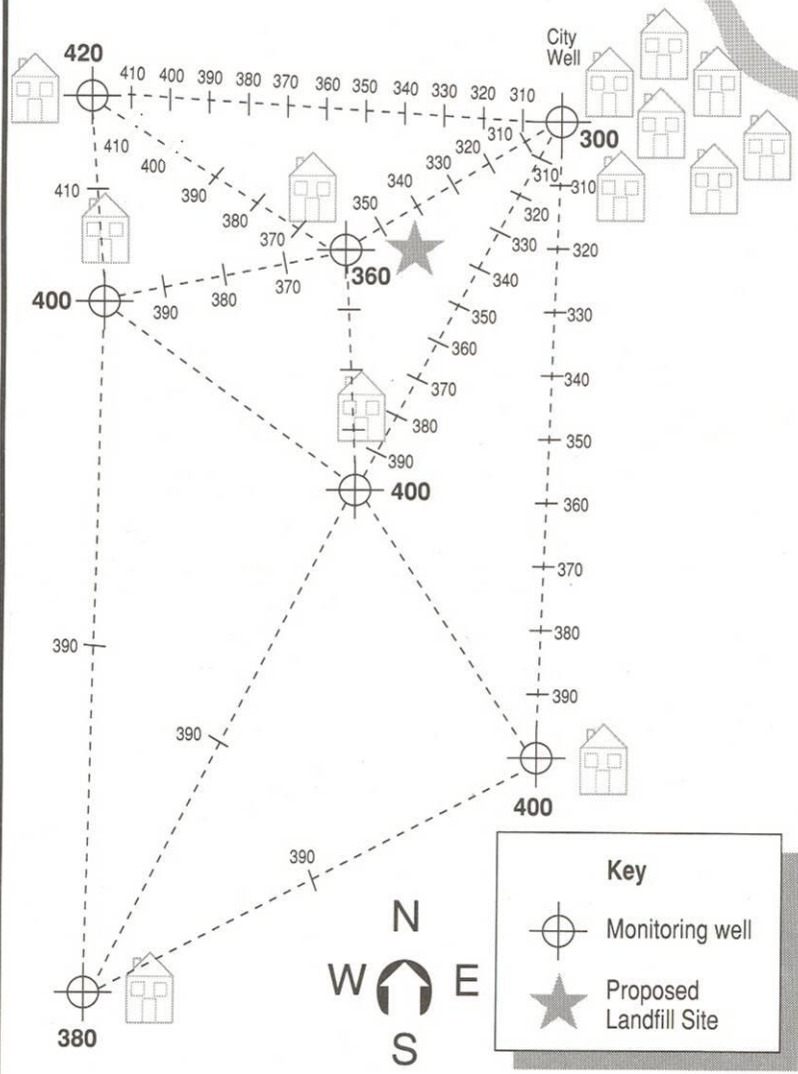
2. Calculate the distance between each interval by measuring the distance between the two wells and dividing by the number of intervals.

$$44 \text{ mm} / 4 \text{ intervals} = 11 \text{ mm/interval}$$



# Pleasant Valley

Mud River



# Discussion Questions

- In general what direction does groundwater flow in Pleasant Valley?
- Can we make assumptions about the speed of groundwater movement at certain locations?
- Would the contour lines change if you had SWL information from more wells? Fewer wells?
- Based on the information we have is X a good location for the landfill? Why or why not? If why, can you suggest a better site.
- What is the elevation of Mud River as it passes town?

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