

YUSO 2017 HYDROGEOLOGY

EXAM AND ANSWER SHEET PART III

A well at a top of a hill, right next to a farm has been contaminated by contaminant X. As a result, the local government closed off the well for the safety of the neighboring town that lies several miles away at the bottom of the hill.

1. Should the town close their well as well? Why or why not? (5 points)

The town continues to use their own well, but after a while, the town begins to notice an increase in infant mortality. After several autopsies, it was determined that the babies died from methemoglobinemia (a decrease in the oxygen carrying capacity of haemoglobin).

2. What is the most likely contaminant? (5 points)
3. Would the contaminant have spread faster if the underlying material was gravel or sand? Why? (5 points)

4. There is a lake nearby that is fed by groundwater. What do you expect to happen to the lake? (5 points)

Remediation Technique	Definition (1 pt)	In-situ or ex-situ (0.5 pt)	Type (Physical, Biological, or Chemical) (0.5 pt)	Cost (low, medium, high) (0.5 pt)	Applicable to BTEX? (yes/no) (0.5 pt)
Phytoremediation					
Air Stripping					
Thermal Treatment					