CE 5364 Groundwater Transport Phenomena July 28, 2020

Last Homework due August 3

1. The following data for concentration of TCE were taken at a single monitoring well. Use the Mann-Kendall test to determine whether the concentration has an upward or downward trend.

|  |  |
| --- | --- |
| Date | TCE (ppb) |
| 9/92 | 8 |
| 12/92 | 19 |
| 3/93 | 21 |
| 6/93 | 13 |
| 9/93 | 39 |
| 12/93 | 24 |
| 3/94 | 28 |
| 6/94 | 25 |

2. Problem 11-1.

3. Problem 11-2.

4. Problem 11-4.

5. A fuel mixture includes benzene, toluene, and ethylbenzene at mole fractions of 0.075, 0.065, and 0.035, respectively. The mixture is allowed to come to equilibrium with the atmosphere at 25ºC. Find the concentrations of these VOCs in the air in mg/L and μg/m3. Figure 4.13 and Table 7.1 will be helpful.