CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHUR STUDY

5.1 Conclusions

The following conclusions can be made based on the validation results presented.

1. The Silica Flour models are one dimensional models. The plot of log $_{tm}$ (50% reduction in concentration at middepth) and log N (model scale factor) gave the slope equal to minus two. This result supports the scaling laws ($t^* = 1/N^2$) derived.

2. The condition for 100% Snowcal 50 model is also one dimension. The tests are carried out at 50g and 100g centrifugal acceleration with adsorption and without adsorption. The results show that the adsorption retards the movement of the solute.

3. The condition for Monterey 0/30 sand model part1 is the one dimension model; the media is Monterey 0/30 sand with 25g centrifugal acceleration and vary with different velocities. The result show that the velocity increase, the spreading of the breakthrough curves also increase, including in the hydrodynamic dispersion. This result support the scaling laws.

4. The condition for Monterey 0/30 sand model part2 is the one dimension model; the media is Monterey 0/30sand with 1g centrifugal acceleration and vary with average interstitial velocities. As the velocity increases, hydrodynamic dispersion also increases. This result support the scaling laws.

5. The MODFLOW program compares to the experiment result, which is one dimension model and the media is Silica Flour with 100g acceleration, the result of the model and experiment result is likely the same, due to the assumed constitutive model parameters.

5.2 Recommendations for further study

1. There is a lack of experimental data to define the contaminant transport of groundwater for centrifuge model. Experiments should be performed to create these curves so simulations can be carried out for various contamination situations.
2. There is a limitation of MODFLOW program for simulate the contaminant transport. The MODFLOW program should be further modified to simulate not only miscible pollutant but also can simulate immiscible pollutant.