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CHOMSUDA SOMKUL : THE PREDICTION MOVEMENT OF TRICHLOROETHYLENE (TCE) ON THE EFFECT WITH ENVIRONMENT BY FUGACITY APPROACH METHOD. AN INDEPENDENT STUDY ADVISOR : ASS0C.PROF. PONGSAK NOOPHUN, Ph.D. 99 pp.

Accumulation of Trichloroethylene (TCE) into soil, water, air and biota was predicted by using Fugacity Approach at area of Project Study Knowledge for Development Assistance to Endure Follow Tendency of Fair the King Economy, Silpakorn University, Sanamchundra Palace Campus. In this study, Trichloroethylene was assumed to dump by accident to the site study. The total area and volume of this site were  $197.7 \text{ m}^2$  and  $120.6 \text{ m}^3$  respectively. The total volume of air above this site study was  $4.62 \times 10^6 \text{ m}^3$ . *Canna generalis* and *Oreochromis niloticus* were the most populous of plant (the amount of fat=0.68%) and fish (the amount of fat=0.80%) respectively. The most type of soil in the area of project was clay and clay loam.

The initial Trichloroethylene concentration in this case study was assumed at  $5.57 \times 10^3$  mole. After Fugacity Model was used to predict Trichloroethylene concentration into soil phase, water phase, air phase and biota phase the greatest Trichloroethylene concentration 5,319.60 mole was in air phase. The reason of Trichloroethylene concentration in air phase was highest concentration comparison with other phases because Trichloroethylene was able to evaporate in room temperature. Trichloroethylene concentrations in sediment, soil phase, water phase, Vegetation phase, Biota phase and suspended solids phase 101.67, 101.67, 24.56, 0.20,  $2.92 \times 10^{-3}$  and  $3.63 \times 10^{-4}$  mole, respectively.

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