

Kannika Chuntalam 2015: Analysis of the Relationship between Air Pollutants Concentration and Meteorological Conditions in Khet Din Daeng and Lat Phrao Area. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Associate Professor Nipon Tungkananuruk, Ph.D. 95 pages.

Ambient air pollution in Bangkok is increasing a consequence of the inefficient combustion of fuels for transport and traffic jam problem. Air pollutants of major public health concern include particulate matter ( $PM_{10}$ ), carbonmonoxide (CO), ozone ( $O_3$ ), nitrogen dioxide ( $NO_2$ ) and sulfurdioxide ( $SO_2$ ). Therefore this research was to investigate the variation of the concentration of the pollutants in two sample areas such as Khet Din Daeng and Lat Phrao in year 2010-2013 from air quality monitoring station at these two areas. In addition, the factor affectings were season (summer and rainy season) and meteorology condition (such as wind speed, temperature, relhum, pressure and rain). The results revealed that the average concentration pollutants of  $PM_{10}$ , CO,  $O_3$ ,  $NO_2$  and  $SO_2$  were  $58.33 \mu\text{g}/\text{m}^3$ , 1.22 ppm, 7.32 ppb, 31.01 ppb and 1.96 ppb respectively in Khet Din Daeng and  $26.13 \mu\text{g}/\text{m}^3$ , 0.94 ppb, 14.47 ppb, 26.28 ppb and 2.66 ppb respectively in Khet Lat Phrao. In the studied years the concentration of all pollutants in rainy season were lower than in summer because of the occurring of precipitation and dilution process in rainy season. In summer season, the concentration of  $PM_{10}$  and  $NO_2$  were  $58.33 \mu\text{g}/\text{m}^3$  and 31.01 ppb respectively which exceeded the acceptable value of air quality standard at  $50 \mu\text{g}/\text{m}^3$  and 30 ppb respectively. From Pearson's correlation studying indicated that the meteorological factors had affect to all pollutants but gave highest influence to the amount of  $NO_2$  because of  $NO_2$  was the precursor to occur ozone gas.

---

Student's signature

---

Thesis Advisor's signature

\_\_\_\_ / \_\_\_\_ / \_\_\_\_