Jintanan Watcharasing 2014: Potential of Thachin River Water and Bottom Sediment from Nakhon Chai Si to It's Estuary on Heavy Metals Absorption. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science.
Thesis Advisor: Mr. Narouchit Dampin, Ph.D. 156 pages.

Studies on potential of Thachin river water and bottom sediment from Nakhon Chai Si to it's estuary on heavy metals absorption, were carried out in April and Novenber, 2012 for representative sample in dry season and wet season. Water samples were collected from 21 stations in Thachin river and its three inflow canals; Khlong Maha Sawat, Khlong Phasi Charoen and Khlong Maha Chai, 5 stations per canal included totality 36 stations. The results of heavy metals content showed that lead(Pb), cadmium(Cd), arsenic(As), mercury(Hg) and nickel(Ni) in the water of Thachin river ranged between not detected to 0.002, not detected, 0.003 – 0.013, not detected to 0.002 and not detected to 0.005 mg/l respectively and in the water of its three inflow canals; (1)Khlong Maha Sawat ranged between 0.001 – 0.001, not detected, 0.004 – 0.005 , 0.002 – 0.002 and 0.002 – 0.004 mg/l, (2)Khlong Phasi Charoen ranged between 0.001 – 0.001, not detected, 0.001 – 0.006, not detected and 0.003 – 0.021 mg/l and (3)Khlong Maha Chai ranged between 0.001 – 0.003, not detected, 0.004 – 0.009, 0.001 – 0.001 and 0.002 – 0.072 mg/l, respectively. However, most of these heavy metals were still within the range of standard values, except for some stations that arsenic concentrations was higher than standard values that were observed during dry season. Meanwhile, heavy metals in the sediments of Thachin river ranged between 14.298–41.409, 0.020 – 0.548, 1.498 – 15.004, not detected to 0.463 and 5.536 – 39.521 mg/kg –dry weight. All of these heavy metals were still within the range of standard values. In addition, heavy metals in water and sediment were different among season and the concentrations of five each heavy metals in the water were relationship with the heavy metals in the sediment in the opposite direction. The result of potential of Thachin river on heavy metals absorption analysis show that Thachin river from Nakhon Chai Si down to Its Estuary still have the potential absorption for lead, cadmium, arsenic, mercury and nickel in the water range between 96.00 – 100.00, 100.00 – 100.00, -30.00 – 73.00 , 0.00 – 100.00 and 95.30 – 100.00 percent, respectively and in sediment range between 62.36 – 87.00 , 93.91 – 99.78 , 82.35 – 98.24 , 64.38 – 100.00 and 20.96 – 88.93 percent, respectively. There are some stations that no potential to capacity the concentrations of arsenic and mercury.

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