

Thesis Title

MUNICIPAL SOLID WASTE MANAGEMENT IN

NONTHABURI PROVINCE

Name

Paisan Padungsirikul

Degree

Master of Science (Technology of Environmental
Management)

Thesis Supervisory Committee

Debhanom Muangman, M.D. Dr.P.H

Usanee Uyasatian, M.Eng.

Luepol Punnakanta, M.Sc.

Date of Graduation

3 August B.E. 2537 (1994)

ABSTRACT

The research on Municipal Solid Waste Management in Nonthaburi Province was the presentation of current solid waste characteristics and problem conditions. The results will lead to the analysing and planning of storages, collection, transportation and disposal of waste, including the estimation of waste management budget.

The results of the Nonthaburi Municipal solid waste characteristics analysis are : composition per cent by wet weight, garbage 48.40 %, plastic 24.00%, wood 6.40%, paper 5.60%, household hazardous waste 0.03%,

others 20.90%.; bulk density 330 kilogram/cubic metre and calorific value 2,006 kilocalory/kilogram. Solid waste quantity in BE. 2536 are 233 tons/day in Nonthaburi Municipality, 20 tons/day in Bangbuatong Municipality, 79 tons/day in Parkret Municipality and in BE. 2551 solid waste quantity will be up to 427, 39 and 193 tons/day respectively.

This study recommends each municipality should provide storage and collection service and 200 litres garbage containers capable to receive about 20 % of solid waste collected each day. Garbage truck usage should last not more than 10 years. In BE. 2536 Nonthaburi Municipality had 54 trucks which can be used until BE. 2545, Bangbuatong Municipality had 4 trucks which can be used until BE. 2550, Parkret Municipality had 24 trucks which can be used until BE. 2546. In BE. 2551 the garbage trucks in each municipality will be up to 67, 5 and 33 respectively.

For transportation system of solid waste to the disposal site, waste transfer station could reduce time consuming. Therefore reduced time in transportation will increase ability of each truck in collecting waste and reduce fuel and maintenance cost. Construction cost of transfer station was estimated about 34.5 million baht.

Sanitary landfill was the most appropriate system for Nontaburi municipal solid waste disposal. A disposal center for the three municipalities is recommended - it requires at least 307 rai of land and about 182 million baht of construction cost.