

Dump site in Kieu ky, Gia Lam

Location : It is located 20km from Hanoi.

Total Area: 14ha

Pond 1 :6.6ha

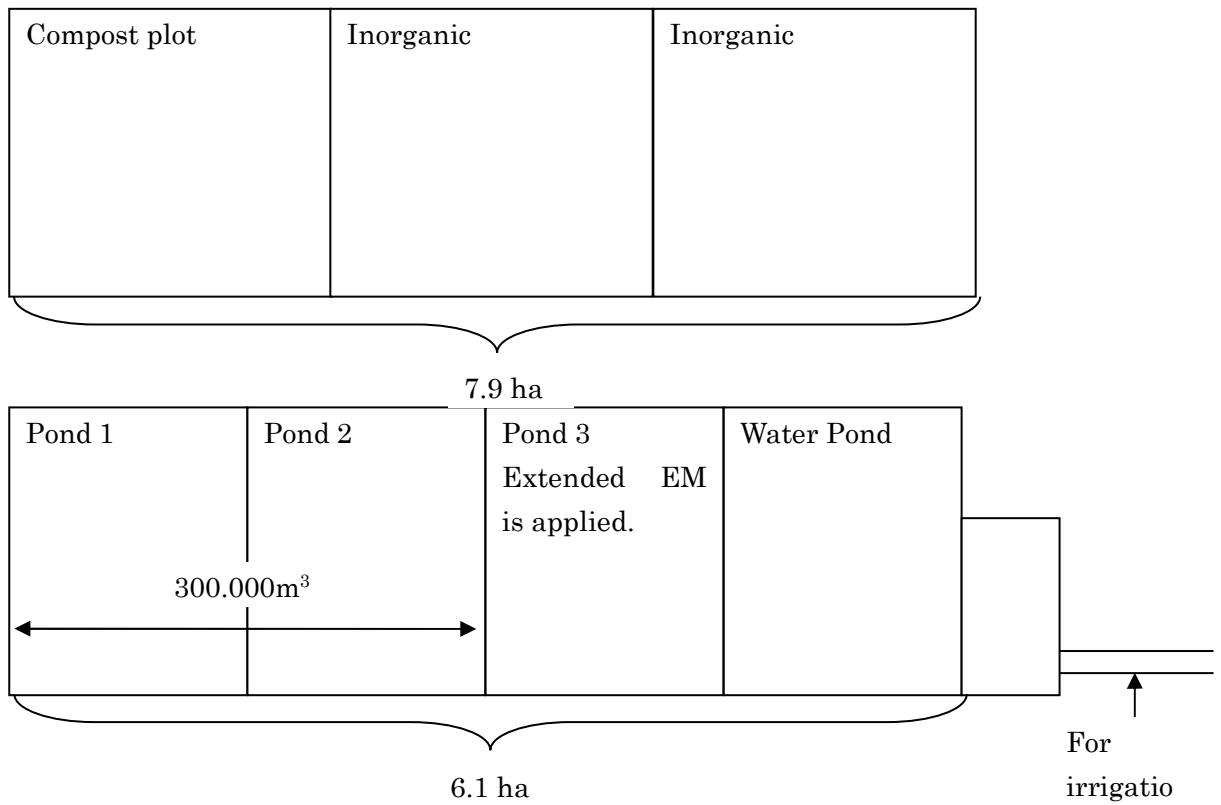
Pond 2: 3.7ha ( It is constructing now)

Pond 3: this pond is used for water treatment from garbage dump site.

Total capacity: 500,000m<sup>3</sup> (300,000m<sup>3</sup> has been dumped already.)

Depth from bottom is 9m.

EM is used from 1997.



(How to apply EM)



Apply Extended EM Solution: 0.6l/ha (Dilution rate is changed by season, moisture of garbage and temperature.)

Apply Bokashi: 0.1–0.2 kg/m<sup>2</sup>



Applying Ex EM for waste treatment : EM : Water=1:100  
Spraying dilution of extend EM.



They said that the color of waste water changed from dark color to light color. The smell of waste was no odor.  
Waste water is pumped up from dumpsite



This is waste water from dumpsite. No odor!



Diluted Extended EM( 1:1000) is dropped into the waste water before the waster entry to the pond.



Waste water pond. Plant is water hyacinth.  
Aeration  
is done in this pond.  
This water is used by farmer. Brown color means  
lignin.



Near banana tree is treated by waste water.



The water hyacinth from the pond is used for the  
mulching.

Contain of water before and after treatment

Sample	pH	COD(mg/l)	BOD5(mg/l)	TotalN(mg/l)	Total P(mg/l)	SS(mg/l)	Coliform MPN (mg/l)
Before (22/Feb)	8,55	1060	750	1771	10	897	160*10 <sup>3</sup>
After (14/March)	8.0	170	82	680	11,62	232	102.*10 <sup>3</sup>

Contain of H<sub>2</sub>S wast water before and after treatment (mg/l)

No.	Sample	H <sub>2</sub> S (mg/l)	
		Date 4/1	Date 9/1
1	M1	3,75	3.70
2	M3	6.80	6.80
M1: Secundaly EM 5% with rate 1/1000. the date of starting EM treatment. 31/12 M3: Control without EM			