

CASE STUDY DESCRIPTION



Institute name: Asian Institute of Technology

Unit of relevance: Sub-course (Unit 4.3 Drying Beds)

Link on Vimeo: <https://youtu.be/pMrmu9ldZ98>

TITLE: Anaerobic Digestion and Sand Beds
DURATION: 10 minutes
PROBLEM STATEMENT: Treatment methods for treatment of faecal sludge depend mainly on economical and natural resources. In Thailand most of the faecal sludge treatment plants are base in the combination of anaerobic digestion and sand beds, due the low operational cost and the availability of sun light for drying process. Although the combination of methods for faecal sludge has high removal efficiency, lack of monitoring and maintenance lead to poor treatment performance.
DESCRIPTION: During this video you will see the synergy between the sand beds and anaerobic digestion mechanisms for the treatment of faecal sludge in Nonthaburi City. We will go through Its location, technology description, components, operation and performance. Nonthaburi Faecal Sludge Treatment Plant has four steps: 1. Anaerobic tanks 2. Sand beds 3. Storage pond and 4. Fertilizer storage. Nonthaburi treatment plant is an example of Faecal Sludge Management due the success on the Faecal Sludge treatment system having a valuable enduse product (fertilizer). Moreover the governmental commitment towards better sanitation is remarkable; enhancing community awareness through campaigns and educational programs.
PRESENTATION STYLE: The video is based on slides and describing the treatment process : <ol style="list-style-type: none">1. Introduction to the case study (location)2. Introduction to treatment plant3. Description of treatment plant components and operation<ol style="list-style-type: none">a. Anaerobic tanksb. Sand bedsc. Storage pond andd. Fertilizer storage4. Performance of treatment system5. Take home message
TAKE HOME MESSAGE:

The technology combination used in Nonthaburi is highly efficient for treatment of faecal sludge, removing potential pathogens, organic matter and creation of a valuable product using mostly natural forces. The key factors of success of this treatment plant are:

- Active participation of the local government (budget support and advocacy campaigns)
- Appropriate operation and maintenance
- Low energy consumption
- Only domestic faecal sludge is treated, to ensure the low concentration of heavy metals in the fertilizer

Nonthaburi faecal sludge treatment plant is contributing to reduce the digestive system related diseases in the municipality, which ultimately bring safe hygiene to the community.

ASSIGNMENT:

1. Describe the treatment mechanisms related to unit 2.2 used in the study case of Nonthaburi City
2. If only 1% of the raw faecal sludge is converted to fertilizer, how much fertilizer is produced in one year (265 working days) in Nonthaburi FS Treatment Plant?

Hint: the maximum capacity is 40m³ per day and it currently operates at 75% of its maximum capacity.