



DEVELOPMENT OF ON-SITE SEPTAGE TREATMENT PRODUCTS

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Status of Sanitation in Urban India



Source:

* Census of India 2011; # CPCB, Inventorization of STPs (2015)

Picture : Self Explanatory



Existing Barriers in FSSM Business

- Profit of the truck operators depends on the distance between the emptying site and disposal point
- Transportation of septage – which is mostly of liquid part
- Absence of treatment, indiscriminate disposal of septage which contaminate the environment
- Cost of desludging restrict the households to go for scheduled desludging
- Old and leak trucks
- Lack of private operators in small towns due to low business opportunities



Our Innovation - # ONE

Pit /Septic Tank Life Extender



Our Innovation

Mobile on-site Septage Treatment Unit “The Annam”



Pit/Septic Tank Life Extender : How it Works?



- Treatment in two stages
 - Solid liquid Separation
 - Liquid treatment
- Solid Liquid Separation
 - Through fabric filtration and
 - Lifting of liquid to treatment unit
- Liquid Treatment
 - Micron filtration
 - Activated carbon
 - Ultra-Filtration



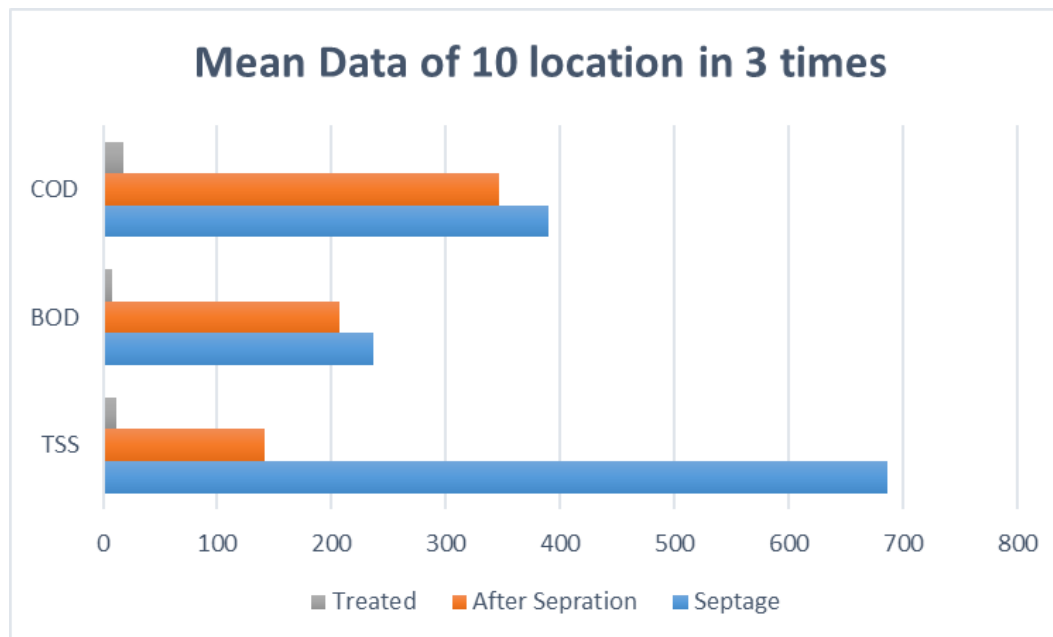
The Annam : How it works?

- Septage pumping Unit – lifts septage to solid-liquid separation tank
- Solid and liquid separation
- Sludge thickening
- Liquid treatment through membrane filtration process
- Disposal of treated liquid and collection of solids



Test Results of “Pit / Septic Tank Life Extender

Data (Mean) of 10 houses - 3 time (30 tests)			
Parameters	TSS	BOD	COD
Septage	686	236	390
After Sepration	142	207	346
Treated	12	8	18



Quantitative (Mean)

Test Results of “The Annam”

Parameter	Raw	Treated	TNPCB Standards
TSS (mg/l)	712	2	30
BOD (mg/l)	270	9	20
Coliform #s/100 ml	Too numerous to count	110	1000



How Annam Addresses the FSSM Barriers

- Effluent is treated and discharged onsite. Hence chances of leakage of septage will be nil.
- Allows the operators to undertake multiple desludging in a single trip, thereby saving operational cost.
- Private operators will be able to offer their services in small towns because of increase in business opportunities
- This will bring down the desludging cost and encourage the households to go for scheduled desludging.
- Reduces load of Treatment facilities/plants
- Cost of this mobile treatment unit is much lower than the desludging trucks used by Operators



WAY FORWARD

- *Evaluating the efficiency of each stages of the treatment unit (with DUKE University Support)*
- *Analysis of economics through the commercial operators*
- *Obtaining certification from a reputed body*
- *Product design – beatification*



Thank You

