Milk House Wastewater Treatment

Dosing System

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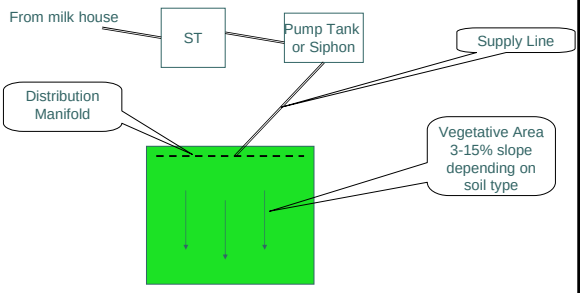
Dosing System

- Design Guide is from NRCS in Maryland MD#4
- New to Minnesota
- New to milk house wastewater
- Dosing refers to the method of applying waste to vegetative treatment area

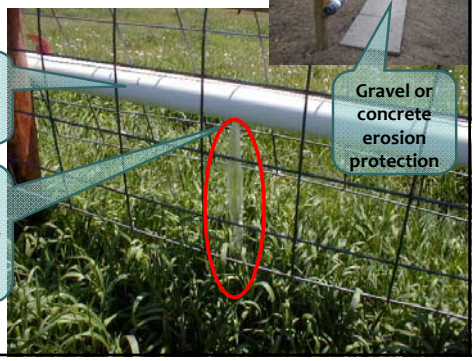
Schematic from MD #4



Dosing System

- Size based on amount of wastewater, soil type, and buffer slope
- Wastewater and nutrients infiltrate primarily at the top of the buffer

Dosing System



Design specs

- 3-day HRT in septic tank
- 3-day HRT dosing tank
- Design based on hydraulic loading
- Should infiltrate all effluent (no runoff)
- <0.5 inches depth of flow
- 15 minute flow time to end of filter
- 24 inch to water table or bedrock

Design specs

- Dose filter every 3 days
- Maximum 1-inch per week
- Pump or siphon used for dosing
- Dose rate (gpm) should exceed soil infiltration rate so flow moves down filter
- Short dosing period ~ 15-20 minutes max
- Maximum application depth based on soil type

Example from Maryland

- 300 gpd farm site
- 200 x 115 area available
- Well drained
- 15% slope
- Max application depth is 0.15 inch

Example Results

- 1 septic tank 1250 gallons
  - 350 septic, 900 dosing
- 200 ft wide x 115 feet long filter
- 14 ¾ inch holes at 14.3' spacing
- 3 feet head at distribution manifold
- 185 gpm
- *Approximate distribution area = 380 ft^2/cow*