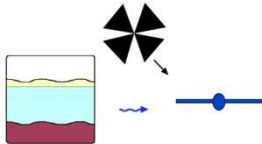


Category:



SHALLOW DISPERSAL WITH
INTERMITTENT AIR



GeoMat



GeoMat installation



SoilAir

Process:

Wastewater from a septic tank or pump tank is discharged to Geomat, which is a shallow dispersal system designed for widespread application, using plastic pipe with downflow emitters, housed in a wide mesh to facilitate aeration and wide dispersal. The system lies 6" to 12" below the ground surface. Air can be intermittently blown into the GeoMat dispersal field, and ultimately the soil, where it supports an aerobic environment in which nitrification can occur. Dosing creates a temporary anoxic condition, promoting denitrification. Additional treatment continues in the soil, where microorganisms help process the wastewater. Plants provide additional uptake of nutrients.

System:

A septic tank with a filter on the outflow is required ahead of the system. A dosing tank is frequently utilized. A SoilAir compressor and GeoMat leaching field comprise the treatment system, which replaces the dispersal field or leaching pits.

Flow Range: Adaptable to any size.

Tests:

A GeoMat in native soil was tested at MASSTC, obtaining over 60% reductions. The configuration with SoilAir will be tested as an experimental installation in the Suffolk County Pilot 2.

Cost:

For a 300 GPD system, the GeoMat would be \$2,000 and the pump \$2,500, so the system should cost roughly \$10,000 installed, with the septic tank not included

Energy:

The blower runs roughly 4 hours/day, (0.64 KWh/day) costing roughly \$3.5/month

Tanks:

Concrete, plastic or fiberglass (dosing), locally sourced

Geomatrix Systems, Inc.

114 Mill Rock Rd East
Old Saybrook, CT 06475

Telephone:

860 510 0730



Venting: None

Footprint: One SF for every 0.5 to 1.75 gallons of use per day, or a range from 171 to 600 SF for a typical home.

Depth: 3 feet, if a two-foot clearance to groundwater is maintained.

Life Cycle: Compressor, 5-7 years (Cost: \$300)

Warranty: One year

Maintenance: Maintenance is usually only needed every couple of years. Inspections can occur more frequently. Remote telemetry is available. Pump-outs as required.

Notes: Requires certified installer.
At the end of each line there is a clean out (flush to the ground). The SoilAir compressor can be located remotely.

Installations: New configuration, SoilAir has over 2,000 installations in the U.S.A.; GeoMat: 500.

Treatment: Expected levels of denitrification are 50-80%. The GeoMat in native soils has achieved denitrification levels of over 60%. SoilAir by itself has been used to rejuvenate hydraulically failed leach fields as well as improve nitrogen removal by –up to 75%.

Advantages:

- Solution for sites with shallow depths to groundwater
- Good treatment
- Low cost
- Replaces need for irrigation and fertilizer
- Maintains the viability of the leaching field for a longer period of time

- GeoMat alone, can be combined with any treatment type

Disadvantages:

- Needs a wide area for treatment
- Installation should avoid locations where root intrusion and vehicular loading can occur. Design options to address these site conditions are available.