CASE STUDY

PROJECT NAME
Lapeer County, MI Residential System

SYSTEM SPECIFICATIONS
450 GPD passive combined treatment and dispersal system for 3-bedroom residence installed in a 1500 square foot bed

PRODUCTS USED
210 feet of Advanced Enviro-Septic® (AES) combined treatment and dispersal system

INSTALLATION DATE
Summer 2021

CONTRACTOR
D&D Excavating
Lapeer, MI

DISTRIBUTOR
Diamond Precast
Burton, MI

OWNER
Timbergate Construction LLC
Lapeer, MI

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First Permitted Advanced Enviro-Septic (AES) System Installed in Lapeer County, Michigan Solves New Residential Construction Space and Treatment Challenges

OVERVIEW

Builders of a three-bedroom home in Lapeer County, Michigan needed a wastewater treatment solution that could be installed on a sloping site and leave the maximum possible land available for the owner's horses. The 450 GPD system designed is the first Advanced Enviro-Septic® (AES) combined treatment and dispersal system to be permitted and installed in Lapeer County.

CHALLENGE

In Michigan, local county or district health departments determine wastewater treatment system sizing and systems in Lapeer County typically utilize large above-grade mounds which compromise the use of available land and require large amounts of sand fill to be trucked to the sites.

SYSTEM DESIGN

Due to treatment capabilities of the AES combined treatment and dispersal system, the system was permitted at only 25 percent of a standard mound system typical for a three-bedroom size home. The clay loam limiting layer on the site was 12 inches below existing grade and the required distance to the limiting layer in Lapeer County is 18 inches. The topsoil was left in place and scarified across a 20-foot-wide x 72-foot-long area and six inches of sand fill was placed and stabilized on the existing grade. The 1500 square foot AES system features three 70-foot rows of AES installed on top of the sand at 24 inches on center. There is six inches of 2NS sand beneath the conduits which are backfilled with 2NS sand to 3 inches above the pipe. A sand extension on the downslope side extends to the edge of the scarified area to create a basal area large enough to hydraulically accept the treated effluent.

RESULTS

The installation provided an opportunity for the contractor and area health officials to learn about the AES product and how it is installed. The aesthetically pleasing system blends in naturally with the site grading, eliminating the large hump associated with traditional above grade wastewater treatment systems and provided ample room on site for the owner's horses. The contractor was able to install the AES system in one day without hauling in large quantities of sand and the owner benefited by significant cost savings over other solutions.