Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

GENERAL USE CERTIFICATION
Pursuant to Title 5, 310 CMR 15.00

Name and Address of Applicant:

Geomatrix Systems, LLC
114 Mill Rock Road East
Old Saybrook, CT 06475

Trade name of technology and models: **GeoMat™ Leaching System** Models 200, 400, 600, 1200 and 3900 (hereinafter called the "System"). The Installation Instructions including schematic drawings of typical Systems, an inspection checklist, and a System Installation Form are part of this Certification.

Transmittal Number: X267826
Date of Issuance: January 11, 2017, Modified March 13, 2017, Last Modified July 14, 2017

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental, Protection hereby issues this Certification for General Use to: Geomatrix Systems, LLC, 114 Mill Rock Road East, Old Saybrook, CT 06475 (hereinafter "the Company"), certifying the System described herein for General Use in the Commonwealth of Massachusetts. The sale, design, installation, and use of the System are conditioned on compliance by the Company, the Designer, the Installer and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

Marybeth Chubb, Acting Section Chief
Groundwater/Title5/Reuse
Bureau of Water Resources

July 14, 2017
Date

Technology Description

The system is an alternative subsurface Soil Absorption System (SAS) that replaces a conventional SAS designed in accordance with 310 CMR 15.000. GeoMat™ is a low profile leaching system which consists of an approximately 1–inch thick core of fused, entangled plastic filaments fully wrapped in a hygroscopic membrane. A distribution pipe is placed inside the fabric on top of the core. The distribution laterals for gravity systems can either be 2 or 3 inch SCH40 pipe with minimum ½ inch perforations or 4 inch SDR35 perforated pipe. Pressure Distribution laterals are typically 1-2 inch SCH40 PVC. Size will vary depending on design and site conditions. Distribution laterals that are at different elevations should have flow equalization valves installed to provide equal head/flow of effluent to all rows. Orifice holes should be oriented in a downward (six o'clock) direction and can be spaced according to the dosing requirements of the system. The GeoMat system can be installed in trench and bed configurations and function in a gravity and pressure distribution system configuration. GeoMat with gravity distribution and 6" of ASTM C33 sand is NSF standard 40 certified treatment systems. Pressure distribution is required when the GeoMat is installed directly into native soil; gravity or pressure distribution is possible when GeoMat™ is installed in Title 5 fill. In a pressure distribution configuration, diffusers are installed over the orifices.

Both gravity and pressure distribution configurations utilize a transmissive core and a hygroscopic membrane that is in contact with the native soil or imported sand/soil medium to further distribute the water. Water is sent to the GeoMat™, emitted from perforations or the diffusers by the pressure differential, into the transmissive core where it contacts the hygroscopic membrane. Water is subsequently moved by hygroscopic and capillary force between the diffusers and around the membrane surface of the GeoMat™. Once the hygroscopic and capillary forces are overcome by head, the dose is released into the surrounding soil. The capillary force of the soil then draws the water away from the GeoMat™.

Conditions of Approval

The term "System" refers to the Alternative Soil Absorption System in combination with the other components of an on-site treatment and disposal system that may be required to serve a facility in accordance with 310 CMR 15.000.

The term "Approval" refers to the technology-specific Special Conditions, the Standard Conditions for General Use Certification of Alternative Soil Absorption Systems, and the General Conditions of 310 CMR 15.287, and any Attachments.

For Alternative Soil Absorption Systems that have been issued General Use Certification for the installation of Systems to serve facilities where the site meets the requirements for new construction, the Department authorizes reductions in the effective leaching area (310 CMR 15.242), subject to the Standard Conditions that apply to all Alternative Soil Absorption Systems with General Use Certification and subject to the Special Conditions below applicable to this Technology.

Special Conditions

1. The System is an approved Patented Sand Filter System for use as an Alternative Soil Absorption System. In addition to the Special Conditions contained in this Approval, the System shall comply with all Standard Conditions for Alternative Soil Absorption Systems, except where stated otherwise in these Special Conditions.

2. The System is approved for facilities where a conventional system with a reserve area exists or can be built on-site in full compliance with the new construction requirements of 310 CMR 15.000 and has been approved by the local approving authority.

3. This Certification shall not be used for the installation of a System to upgrade or replace an existing failed or nonconforming system, unless the facility meets the siting requirements for new construction, including a reserve area.

4. The separation distance to the estimated seasonal high groundwater elevation shall be measured from the bottom of the System sand below the GeoMat Wastewater Treatment System.

5. The System can be installed in bed/field (310 CMR 15.252) or trench configuration (310 CMR 15.251). When the System is installed in bed or field configuration no sidewall area shall be considered in the total effective leaching area. The effective leaching area shall be the bottom area only (length times width) of the sand bed for the bed/field configuration. Sidewall area should be considered in the effective leaching area for trench configuration. The total effective leaching area for the trench configuration then becomes the bottom area plus twice the area of one of the sides.

6. Systems shall be installed with inspection access at end of each run of pipe, section or serial bed and whenever the System is installed under impervious surfaces.

7. System component material specifications for the pipe, plastic components, fabric and sand shall comply with the specifications identified in the initial I/A technology approval. Prior approval from the Department for any change from these specifications shall be requested in writing.

8. The System does not require a five foot over dig as indicated at 310 CMR 15.255(5).

9. The dispersal area shall not be installed under a paved surface or in an area of routine traffic parking or storage of heavy equipment. In addition no planting or soil excavation shall be done in or within 5 feet of the alternative subsurface Soil Absorption System area after its installation. The system may be designed to allow for installation of distribution pipe up to five feet from a building cellar wall.

10. The System can be installed in soils with percolation rate of up to 60 minutes per inch (MPI) in Class I, II, III, or IV soils, subject to the restrictions of the Approval. The System shall only be installed in in class IV soils, as defined in 310 CMR 15.243, when the design has been reviewed and certified by the Company.

11. Effluent loading rates shall be as specified in 310 CMR 15.242(1)(a) and (b) with the exception of Class IV soils.

12. Prior to the submission of an application for a DSCP, for all nonresidential Systems, all Systems to be installed in Class IV soils, and all Systems with design flows of 2,000 gpd or greater, the Company or its authorized agent shall submit to the Designer and the System Owner, a certification by the Company or its authorized agent that the design conforms to the Approval and all Company requirements and that the proposed use of the System is consistent with the System's capabilities. The authorized agent of the Company responsible for the design review shall have received technical training in the Company's products.

13. If the Company requires trained Service Contractors, the Company will maintain programs of training and continuing education for Service Contractors and will provide any required training at least annually. If the Company requires trained Designers and Installers, the Company or its authorized agent shall institute programs of training and continuing education that is separate from or combined with the training for Service Contractors. If training is provided, the Company or its authorized agent shall maintain, annually update, and make available by February 15th of each year, lists of all trained Service Contractors, certified Installers and Designers. The Company or its authorized agent shall certify that the Service Contractors Designers and Installers on the list have taken the appropriate training and passed the Company's training qualifications. The Company or its authorized agent shall further certify that the Service Contractors on the list have submitted to the Company all the reports required in items 9, 10 and 11.

14. In the case of a System that has been determined to be failing to protect public health and safety and the environment, an equipment failure, alarm event, components not functioning as designed, components not functioning in accordance with manufacturers' specifications, or violations of the Approval, the Service Contractor shall provide written notification within five days, describing corrective measures to the System Owner, the local board of health, and the Company and may only propose or take corrective measures provided that:

    a) all emergency repairs, including pumping, shall be in accordance with the limitations and permitting requirements of 310 CMR 15.353;
    b) the design of any repairs or upgrades are consistent with the System Approval;
    c) the design of any repairs or upgrades requiring a DSCP shall be performed by a Designer who is a Massachusetts Registered Professional Engineer or a Massachusetts Registered Sanitarian, provided that such Sanitarian shall not design a system with a discharge greater than 2,000 gallons per day.

d) the installation shall be done by an Installer with a currently valid Disposal System Installers Permit and the Installer shall be certified by the Company as qualified to install the System.

The System Owner shall also be responsible for ensuring written notification is provided within five days to the local board of health.

15. The System Owner and the Service Contractor shall provide written notification to the local Approving Authority within seven days of any cancellation, expiration or other change in the terms of and /or conditions of a required O&M Agreement with a Service Contractor. The Service Contractor shall provide written notification to the Company within seven days of any cancellation, expiration or other change in the terms and/or conditions of a required O&M Agreement.

16. By February 15th of each year, the Service Contractor shall be responsible for submitting to the local Approving Authority all O&M reports and inspections checklists completed by the Service Contractor during the previous 12 months.

17. Any changes to the approved plans must receive prior Local Approving Authority (LAA) approval. Before a Certificate of Compliance can be issued by the LAA the System Designer must include any changes to the approved plan into the as-built plans.