Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

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



**APPROVAL FOR REMEDIAL USE**
Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

J & R Sales and Service
44 Commercial Street
Raynham, MA 02767

Trade name of technology and models:
Geoflow Subsurface Drip Wastewater Disposal System – Geoflow WASTEFLOW Classic WF16-4-24, WF16-4-12, WF – Special Order and Geoflow WASTEFLOW PC WFPC16-4-24, WFPC16-4-12.WFPC16-4-6, WFPC16-2-24, WFPC16-2-12, WFPC16-2-6 and WFPC-Special Order Subsurface Disposal System (hereinafter called the "System"). A schematic drawing of a typical System, Design Manual and inspection checklist are available from the manufacturer.

Transmittal Number: W032585
Date of Issuance: June 22, 2011, revised March 20, 2015
Modified November 8, 2018 (changed ownership)

**Authority for Issuance**

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Approval for Remedial Use to: J&R Sales and Service, 44 Commercial Street, Raynham, MA 02767 (hereinafter "the Company"), approving the System described herein for remedial use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

/signed/

November 8, 2018
Date

Marybeth Chubb, Section Chief
Bureau of Water Resources
Wastewater Management Program

## I. Purpose

1. The purpose of this Approval is to allow use of the System in Massachusetts to repair subsurface sewage disposal systems, on a Remedial Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Approval for Remedial Use authorizes the use and installation of the System in Massachusetts.
3. The System may only be installed on facilities that meet the criteria of 310 CMR 15.284(2). The System is used to dispose of wastewater from an alternative system approved in accordance with 310 CMR 15.280 through 15.289 with effluent discharge concentrations that meet or exceed secondary treatment standards of 30 mg/L biochemical oxygen demand (BOD5) and 30 mg/L total suspended solids (TSS).
4. This Approval for Remedial Use authorizes the use of the System where the local approving authority finds that the System is for upgrade of a failed, failing or nonconforming system and the design flow for the facility is less than 10,000 gallons per day (GPD).

## II. Design and Construction Standards Standards

1. The System, a subsurface drip distribution technology, is equivalent to a pressure distribution system designed in accordance with the Department's Pressure Distribution Guidance. In the event of conflict between the terms and conditions of this System's technology approval and Title 5, this approval shall control.

2. The System is a pressure distributed subsurface wastewater drip dispersal (disposal) system that replaces a soil absorption system (SAS) designed in accordance with 310 CMR 15.000. The System is designed to distribute effluent from an innovative treatment system and discharge it at a minimum depth of 6 inches below finished grade; it includes a pump, control panel, a filter module/hydraulic unit and drip dispersal zone(s). The dispersal zone includes small diameter flexible polyethylene tubing turbulent flow emitters regularly spaced inside the line. The System can be designed with either Classic turbulent flow emitters or with pressure compensating emitters typically located at one or two foot spacing within the tubing. The tubing is extruded with an inner lining of an anti-microbial agent to prevent bacterial growth. Dispersal field dosing is timed and controlled electronically to provide pre-programmed volumes of effluent for discharge to each dispersal zone. The System includes a return line that allows periodic flushing of the dispersal tubing. All drip zone supply and return pipes that are maintained filled with effluent after a pump cycle shall be buried below the frost line or properly insulated. All drip tubing and shallow manifolds shall be designed to drain into the soil or back to the pump chamber upon completion of the pump cycle. Each zone shall have air release valves at the high points of manifolds and check valves on each return manifold in multi-zone systems. The system shall be equipped with a totalizing flow meter.

3. The System may be installed in the A, B or C soil horizon or in fill material meeting the specifications at 310 CMR 15.255(3) at a minimum depth of 6 inches below the finished grade.

4. All access ports and manhole covers shall be installed and maintained at grade to allow for maintenance of the System.

5. The control panel including alarms and controls shall be mounted in a location always accessible to the System operator.

6. The System may be installed in soils with a percolation rate of up to 90 minutes per inch (MPI). The System shall not be installed in Class IV soils as defined in 310 CMR 15.243.

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

8. The System shall be designed and constructed with drip tubing with a spacing of 24 inches unless obstructions are encountered or in cases where more than the required tubing is provided and equally distributed within the approved appropriately sized subsurface disposal area in which case a minimum separation of 12 inches is allowed. As much as possible the System shall be designed to provide equal distribution across the designated disposal area.

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

10. The System includes the following:

    a. Pumps capable of providing pressure of 10-45 psi throughout the dispersal zone(s). Each drip dispersal zone shall be dosed a minimum of six times per day, or as recommended by the Company. Duplex pumping shall be provided for facilities with design flows of 2000 gpd or greater. The pump chamber, combined with available storage in the pretreatment units, shall provide at least one-day storage as required by 310 CMR 15.231.

    b. Timed dosing for the drip system with a timer controller capable of operating the system during peak flow events without high-level alarms.

    c. A self cleaning filter capable of screening particles larger than 100 microns prior to discharge of the effluent to the drip tubing. Filter(s) backwash shall be conveyed back to the pump tank, a separate settling tank or to the septic tank.

    d. Air vents in a zone shall be placed at a higher elevation than the drip tubing in that zone but below the ground surface. Air vents shall be accessible from finished grade and insulated to prevent freezing.

    e. Drip tubing lines installed as level as possible on contour and a minimum of 6 inches below finished grade. Drip line spacing is typically 24 inches with drip tubing emitters spaced 24 inches on center. More than the minimum length of tubing may be utilized within a properly sized soil absorption system. When the drip lines spacing is greater than 24 inches by 24 inches, the size of the dispersal field shall be increased to provide equal distribution with adequate tubing separation. All drip line flushwater shall be conveyed back to the pump tank, a separate settling tank or to septic tank.

    f. The effective effluent dispersal area is calculated using the total area of the drip tubing system including a one-foot addition on each side or two square feet per foot of drip tube when tubing is spaced two feet apart. No sidewall credit shall be given for this System.

    g. The dispersal area shall not be installed under a paved surface, or in areas 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 drip disposal area after its installation. The system

may be designed to allow for installation of drip tubing up to five feet from a building cellar wall.

h. No change in existing surface slope over the dispersal field is required to comply with 310 CMR 15.240(10).

11. All System control units, valve boxes, drip dispersal lines, conveyance lines and other System appurtenances shall be designed and installed to prevent freezing per the Company's recommendations.

12. The System designer shall provide plans and specifications prepared in accordance with 310 CMR 15.220 for all proposed System installations to the approving authority with required standard details and installation instructions.

13. Drip tubing may be installed with a vibratory plow, a static plow, a narrow trencher (<6" width), by hand trenching, or by scarifying the surface and bedding the drip tubing in clean sand meeting the requirements for fill material in Title 5 at 310 CMR 15.255(3) with cover consisting of sand and topsoil meeting the 6 inch minimum depth requirement. Vegetative cover must be replaced for installations where it is removed or buried during installation.

14. Drip tubing shall not be installed when soils are frozen or saturated.

15. Prior to System start up, a clean water test of the System shall be performed in the presence of the Company's representative and the approving authority to check for leaks and to ascertain and verify system design flush and dose rates.

16. System unit malfunction and high water alarms shall each be connected to an independent power source from the operating pump(s) run from the main power source of the facility.

17. For Systems with a design flow of 2,000 gpd or greater, the System shall be equipped to provide a flow meter and automatic remote telemetric notification to the operation and maintenance (O&M) provider.

18. Installation of inspection ports is not required for this System.

## III. Allowable Soil Absorption System Design

1. Any reduction in System design sizing or setbacks shall be based on the MassDEP approved reduction allowed for the alternative treatment system that precedes the System or by variance or local upgrade approval in accordance with Title 5.

## IV. General Conditions

1. All provisions of 310 CMR 15.000 are applicable to the use of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Approval.

2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan.

3. The facility served by the System and the System itself shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.

4. In accordance with applicable law, the Department and the local approving authority may require the System owner to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare and the environment.

5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer system. No System shall be installed, upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004. When a sanitary sewer connection becomes feasible, the facility served by the System shall be connected to the sewer, within 60 days of such feasibility, and the System shall be abandoned in compliance with 310 CMR 15.354, unless a later time is allowed, in writing, by the approving authority.

6. Design, installation and operation shall be in strict conformance with the Company's DEP approved plans and specifications, 310 CMR 15.000 and this Approval.

## V. Conditions Applicable to the System Owner

1. The System is approved for the treatment and disposal of sanitary sewage only. Any wastes that are non-sanitary sewage generated or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed.

2. Effluent discharge concentrations from the treatment unit that discharges to the System shall meet or exceed secondary treatment standards of 30 mg/l BOD5 and 30 mg/l TSS. The effluent pH shall not be less than 6.0 or more than 9.0 unless approved by the Department.

3. Any effluent discharge samples shall be taken at a flowing discharge point, i.e. distribution box, pump chamber or other Department approved location downstream of the treatment unit. The System designer, subject to written approval by the Department, shall determine sampling locations.

4. The System owner shall have the Company or its designee conduct a design review for any proposed non-residential System or any residential System with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit’s capabilities.

5. Operation and Maintenance Agreement:

   A. Throughout its life, the owner shall operate and maintain the System in accordance with the Company and designer's operation and maintenance requirements and this Approval. To ensure proper operation and maintenance (O&M), the owner shall enter into an O&M agreement. No O&M agreement shall be for less than one year.

   B. No System shall be used until an O&M agreement is submitted to the approving authority which:

      i. Provides for the contracting of a person or firm trained by the Company as provided in Section VI (5) and competent in providing services consistent with the System's

specifications, with the operation and maintenance requirements specified by the Company and the designer, and with any specified by the Department;

ii. Contains procedures for notification to the Department and the local board of health within five days of a System failure or alarm event and for corrective measures to be taken immediately;

iii. Provides the name of an operator, which must be a Massachusetts certified operator if one is required by 257 CMR 2.00, that will operate and monitor the System;

iv. For residential Systems installed with a reduced SAS the operator must inspect, field test and maintain the System at least every six months and anytime there is an alarm event. For residential Systems with standard sized SAS inspection and field testing shall be conducted once per year. For all other Systems the operator must inspect, field test and maintain the System at least every three months and anytime there is an alarm event. The System owner shall notify the Department and the local approving authority in writing within seven days of any cancellation, expiration or any other change in the terms and/or conditions of their O&M agreement.

6. Prior to transferring any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the System owner shall provide written notice of all conditions contained in this Approval to the transferee(s). Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part thereof a copy of this Approval for the System.

7. By January 31st of each year for the previous year, the System owner shall submit to the local approving authority all data collected in accordance with item 5, above, including all Department Title 5 IA O&M checklists and System technology checklists completed during the previous calendar year by the System operator for each inspection performed.

8. After final inspection of the System by the Approving Authority but prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing both the existence of the alternative septic system subject to this Approval on the property and the Department's approval of the System. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the Department and the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.

## VI. Conditions Applicable to the Company

1. The Company shall notify the Director of the Wastewater Management Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Approval issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Approval applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.

2. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; and a recommended schedule for maintenance of the System essential to consistent successful performance of the installed Systems.
3. The Company shall make available, in print and electronic format, the referenced procedures and protocol in Sections V (5) and VI (3) to owners, operators, designers and installers of the System.
4. The Company shall institute and maintain a program of operator training and continuing education, as approved by the Department. The company shall update the list of qualified operators and make the list known to users of the technology.
5. The Company or its designee shall conduct a design review for any proposed non-residential System or any residential System with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit's capabilities.
6. The Company shall furnish the Department any information that the Department requests regarding the System within 21 days of the receipt of that request.
7. The Company shall include copies of this Approval and the procedures and protocol described in Sections V (5) and VI (3) for each System that is sold. Also, in any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Approval and the procedures and protocol described in Sections V (5) and VI (3).
8. The Company shall comply with 310 CMR 15.000 and all the Department policies and guidance that apply and as they may be amended from time to time.

## VII. Reporting

1. All notices and documents required to be submitted to the Department by this Approval shall be submitted to:

   Director
   Wastewater Management Program
   Department of Environmental Protection
   One Winter Street - 5th floor
   Boston, Massachusetts 02108

## VIII. Rights of the Department

1. The Department may suspend, modify or revoke this Approval for cause, including, but not limited to, non-compliance with the terms of this Approval, non-payment of the annual compliance assurance fee, for obtaining the Approval by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Approval, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Approval and/or the System against the owner, or operator of the System and/or the Company.