

**NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES  
DIVISION OF PUBLIC HEALTH  
ENVIRONMENTAL HEALTH SECTION  
ON-SITE WATER PROTECTION BRANCH**

**PROVISIONAL WASTEWATER  
SYSTEM APPROVAL**

PROVISIONAL NO: PWWS-2022-01

Issued To: Cur-Tech LLC D.B.A. Good Flow Solutions  
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For: GoodFlow Solutions CTL 12 and CTL 18 Models

Approval Date: December 7, 2022

In accordance with General Statute 130A-343, 15A NCAC 18A .1969 and .1970, a proposal by GoodFlow Solutions for approval of their wastewater system has been reviewed and found to meet the standards of a Provisional System when all the following conditions have been met.

I. General

A. Scope of this Provisional Approval

1. Use, design, and construction requirements for CTL 12 and CTL 18 systems to meet TS-I effluent standards in accordance with Rule .1970(a) Table VII.
2. Operation, maintenance, and monitoring requirements for CTL 12 and CTL 18 systems to ensure compliance with effluent standards.
3. Proposal for evaluation of this Provisional System.

B. This Provisional Approval is only applicable to CTL 12 and CTL 18 systems receiving domestic strength (non-industrial process wastewater) influent or pretreated influent, not exceeding the parameters in Rule .1970(b), and with a design daily flow less than or equal to 1,500 gallons per day (gpd).

C. CTL 12 and CTL 18 systems may be proposed for facilities with an influent waste strength that exceeds the parameters in Rule .1970(b) by GoodFlow Solutions and a licensed Professional Engineer (PE). The State shall review and approve proposals on a case-by-case basis prior to permitting by the local health department (LHD). The design must include the proposed raw

wastewater strength (e.g., BOD<sub>5</sub>, COD, TN, TSS, fats, oils and grease, etc.), expected organic loading rate (in pounds of BOD per day), and hydraulic loading rate (in gallons per day) on the advanced pretreatment system, calculations, references, and any other needed information to support the proposed design.

- D. Any site utilizing these systems shall have wastewater with sufficient alkalinity to facilitate biological treatment processes. The influent shall not have a pH or toxins that significantly inhibit microbial growth.
- E. This Provisional Approval is limited to 200 systems. The intent of this Provisional Approval is to gain sufficient field experience to qualify this system for Innovative Approval as a TS-I system pursuant to Rule .1969(g).
- F. Use of CTL 12 and CTL 18 systems with a design flow exceeding 1,500 gpd may be permitted after review and approval by the State on a case-by-case basis in accordance with the Large Systems State Review/Approval Process and Rule .1938.

## II. System Description

The GoodFlow Solutions system consists of the following components: a State approved septic tank and a subsurface final treatment and bed dispersal system utilizing the CTL 12 or CTL 18. The effluent can flow by gravity or be pumped to the CTL 12 or CTL 18 system. Distribution methods can include pressure dispersal and timed dosing. Some GoodFlow Solutions systems may include advanced pretreatment meeting TS-II prior to discharge to the bed dispersal system.

- A. The State approved septic tank shall be sized in accordance with 15A NCAC 18A. 1952. All tanks shall be leak tested in accordance with Section VI of this approval.
- B. The GoodFlow Solutions systems consist of the following:
  - 1. Concrete chamber systems CTL 12 or CTL 18 consisting of precast chambers designed for H-10 loadings. The standard chamber dimensions are eight feet long and four feet wide. All concrete components will be precast in a NPCA certified facility.
  - 2. The GoodFlow Solutions concrete chamber systems are attached to high strength ABS fins which are designed to withstand an H-10 loading with six inches of cover.
  - 3. The fins have an open bottom and perforations on the side walls. They are also upholstered with un-woven geotextile.
  - 4. Chambers are installed on six inches of ASTM C-33 sand which is also filled in-between the fins.
  - 5. The completed chamber assembly for both systems is 76 inches by 96 inches, and units have an inspection port with an opening of 18 inches.
  - 6. Minimum required number of chambers for any system is two (16 linear feet).
  - 7. The sampling devices shall be either be provided by or constructed in accordance with designs specified by the Massachusetts Alternative Septic System Test Center.
  - 8. Chambers may be installed with a trench bottom depth between six inches to 36 inches. Venting is optional.

- C. Each chamber unit shall be properly and permanently marked with stenciled markings showing GoodFlow Solutions and either CTL 12 or CTL 18.
- D. Each chamber unit is designed to be installed in series longitudinally or side by side with vents at the distal end of any chamber trench line where vents are proposed to be installed.

### III. Siting Criteria

- A. The GoodFlow Solutions system shall be sited and sized in accordance with Rule .1970(i) and (j) for TS-I and TS-II bed systems. GoodFlow Solutions systems shall have a design flow less than or equal to 1,500 gpd or 480 gpd for an existing fill site and shall meet the following requirements:
  - 1. Bed configurations where the soil is classified based on texture as Soil Group I or II, shall not have a design flow exceeding 1,000 gpd, and shall meet the siting requirements in Rule .1970(i)(1) and (2).
  - 2. Bed configurations where the soil is classified based on texture as Soil group III shall not have a design daily flow exceeding 600 gpd and shall not receive any further siting concessions than those granted to NSF 40 systems in Rule .1970(d).
  - 3. Bed configurations where the soil is classified based on texture as Soil Group I with a design flow greater than 1,000 gpd and not exceeding 1,500 gpd, shall meet the siting requirements in Rule .1970(j)(1) and (2).
  - 4. Vertical separation requirements to a limiting condition are measured from the bottom of the sand layer.
- B. The slope shall not exceed 10 percent. A hydraulic assessment completed pursuant to Rule .1970(i)(1)(B) and (p) is required on sites with slopes greater than two percent.
- C. The system shall be considered to be a fill system if any part of the GoodFlow Solutions chambers are located above the naturally occurring soil surface.

### IV. System Sizing

- A. The GoodFlow Solutions system shall be sized in accordance with Rule .1970 for TS-I or TS-II bed systems.
- B. GoodFlow Solutions systems designed to produce or receive TS-I effluent with a design flow less than or equal to 1,000 gpd shall be sized in accordance with Rule .1970(i)(3)(A), with up to a maximum reduction of 50 percent in Group I or II soils when compared to the area required for a bed system receiving septic tank effluent with no additional pretreatment. The net result is a bed bottom area that is 75 percent of the bottom area required for a conventional trench system receiving septic tank effluent with no additional pretreatment.
- C. GoodFlow Solutions systems designed to receive TS-II effluent with a design flow less than or equal to 1,000 gpd in Group I soil shall be sized in accordance with Rule .1970(i)(3)(B), and to meet the design requirements specified in this Rule.

- D. GoodFlow Solutions systems designed to produce or received TS-I effluent with a design flow greater than 1,000 gpd and less than or equal to 1,500 gpd in Group I soils shall be sized pursuant to Rule .1970(j)(3)(A). Two or more equally sized beds shall be utilized, with a minimum separation between beds of 20 feet (10 feet when three or more beds are used). Furthermore, effluent shall be distributed to the beds by a pump and timer control system to distribute flow evenly over a 24-hour period.
- E. GoodFlow Solutions systems designed to received TS-II effluent with a design flow greater than 1,000 gpd and less than or equal to 1,500 gpd in Group I soils shall be sized pursuant to Rule .1970(j)(3)(B), and to meet the design requirements specified in this Rule.
- F. In Group III soils, there is no bed size reduction. The bed bottom area for the GoodFlow Solutions system shall be 50 percent greater than the bottom area required for a trench system.

V. Special Site Evaluation

A special site evaluation may be required based on the proposed dispersal field in accordance with Rule .1970(p).

VI. Design Criteria

- A. The GoodFlow Solutions system shall be designed in accordance with the following criteria.
  - 1. A septic tank sized as required in Rule .1952 shall be provided. The access riser provided over the effluent filter at the outlet end of the septic tank shall extend to finished grade at a minimum and be designed and maintained to prevent surface water inflow.
  - 2. A state-approved pump tank shall be provided, if needed. The pump tank shall be sized in accordance with Rule .1952. Dosing shall be demand or timed dosing.
  - 3. Components common to all GoodFlow Solutions systems:
    - a. septic tank;
    - b. distribution device, where applicable;
    - c. CTL 12 or CTL 18 units;
    - d. sampling device through the inspection ports;
    - e. ASTM C-33 sand; and
    - f. venting where required or optionally used.
  - 4. Distribution of the effluent shall be to the first CTL chamber unit in each row unless pressure dispersal is utilized.
  - 5. System design criteria:
    - a. The minimum sand depth below a chamber is six inches.
    - b. Chambers can be installed side by side in parallel or in series (one row).
    - c. Parallel linear segments of CTL 12 and CTL 18 units placed side by side shall have a minimum required center-to-center spacing of 7.3 feet (12 inches between side-by-side segments from edge to edge).
    - d. Minimum cover over system is six inches for H-10 rated chambers.
    - e. Maximum bed length is 25 chambers.
    - f. Pressure dispersal shall be utilized for bed lengths exceeding 100 feet (more than 12 chambers).

- g. Low pressure pipe systems shall use a 1 ½ inch lateral installed through the ports in the chambers. The lateral will not be sleeved. Orifice size and spacing will be in accordance with Rule .1957(a)(5).
          - h. The sampling and ponding measurement devices will be located in the center of each row, within the second or third chamber closest to the inlet end of the system.
    - 6. The system design shall incorporate provisions for complying with a means for determining at least the daily, 7-day, and 30-day flow monitoring requirements of Rule .1970. This information shall be stored in a data logging system which can be downloaded by the Operator in Responsible Charge (ORC).
      - a. If a pump is involved, a cycle counter and data logging system will be incorporated into the pump control panel. The cycle counter will be used to estimate daily flow.
      - b. If the system is gravity fed, the system design will either incorporate a siphon system with a cycle counter or a tipping D-box with a cycle counter. A data logging system will be used with the cycle counter to track the flow going to the system. Other methods for tracking the flow may be used when proposed by the manufacturer and approved by the State.
      - c. When none of the above options are feasible, a water meter can be placed on the incoming line to the house connected to a data logging system. Even though not all the water entering the house will enter the wastewater system, the water meter readings will be considered as the water use readings.
    - 7. For system designs requiring two or more side-by-side parallel linear segments to be used, effluent shall be distributed uniformly to each parallel linear segment separately using a suitable distribution device.
    - 8. GoodFlow Solutions systems sited and sized in accordance with TS-II performance standards shall be preceded by an approved advanced pretreatment system designed to produce TS-II quality effluent that will be delivered to the GoodFlow Solutions system.
  - B. The GoodFlow Solutions systems shall be designed by a designer authorized in writing by GoodFlow Solutions (authorized designer) or a PE. Systems over 1,000 gpd shall be designed by a PE.

## VII. Installation and Testing

- A. Prior to beginning construction of a GoodFlow Solutions system, the authorized designer, PE, if required, GoodFlow Solutions licensed distributor, installer authorized in writing by GoodFlow Solutions (authorized installer), ORC authorized in writing by GoodFlow Solutions, if known, and LHD shall attend a preconstruction conference.
- B. The GoodFlow Solutions systems shall be located in compliance with the horizontal setback requirements of Rule .1950(a) and Rule .1970 and shall be located to prevent surface/subsurface water inflow/infiltration. The horizontal setback requirements shall be in accordance with Rule .1970.
- C. All GoodFlow Solutions systems shall be installed according to directions provided by GoodFlow

Solutions. Additionally, all GoodFlow Solutions systems and components used with, but not manufactured by GoodFlow Solutions, shall be installed in accordance with all applicable regulations and manufacturer instructions.

- D. All individuals/companies installing GoodFlow Solutions systems shall be in possession of all necessary permits and licenses before attempting any portion of a new or repair installation. The company/individual must be a Level IV installer and authorized installer.
- E. The GoodFlow Solutions systems shall be installed level on six inches of ASTM C-33 sand. The elevation shall be high enough to meet constraints established for the site by the final treatment and disposal system. When sited in accordance with the appropriate sections of this approval, the bottom of the sand for the GoodFlow Solutions systems may be installed up to but no deeper than five feet below finished grade, provided that the vertical separation requirements in Rule .1970 are met.
- F. ASTM C-33 sand shall be backfilled between the fins, six inches to the sides of the fins and two inches above the fins until level with the concrete chamber. Nonwoven filter fabric shall be placed over the concrete chamber and the sand on top of the fins. Minimum backfill depth shall be six inches above the chambers. At least the final four inches of backfill after settling shall have a finer texture, such as Group II or III, for the establishment of a vegetative cover.
- G. Watertightness of the tanks shall be tested by either a 24-hour hydrostatic test or a vacuum test in accordance with the following, as applicable:
  - 1. Hydrostatic Test<sup>1, 2</sup>
    - a. Temporarily seal the inlet and outlet pipes.
    - b. Fill tank with clean water to a point at least two inches above the pipe connections or the seam between the tank and the riser, whichever is highest.
    - c. Measure the water level.
    - d. Allow the tank to sit for 24 hours.
    - e. Re-measure the water level.
    - f. If the water level change is ½-inch or less or one percent of the liquid tank capacity, the tank passes the leak test.
    - g. If the water level change is greater than ½-inch, any visible leaks can be repaired and the tank may be topped off with water and allowed to sit for a minimum of one hour.
    - h. The tank passes the leak test if there are no visible leaks (flowing water or dripping in a steady stream) and no measurable drop in water level after one hour. Otherwise, the tank fails the leak test.
  - 2. Vacuum Test<sup>2</sup>
    - a. Temporarily seal the inlet and outlet pipes.
    - b. A vacuum of four inches of mercury should be pulled on the tank and held for five minutes.

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<sup>1</sup> Victor D'Amato and Ishwar Devkota, *Development of Prefabricated Septic and Pump Tank Construction and Installation Standards for North Carolina*.

<sup>2</sup> National Precast Concrete Association, *Best Practices Manual Precast Concrete On-Site Wastewater Tanks*, Second Edition, October 2005, 24.

- c. During the testing, the tank manufacturer or their representative can seal the tank if it is found to be leaking.
  - d. If the tank is repaired, the vacuum must be brought back up to four inches and held for five minutes.
- H. Prior to Operation Permit (OP) issuance, the authorized installer and authorized designer or PE shall conduct an inspection/start-up of the GoodFlow Solutions systems and all associated system components. The LHD personnel and the ORC will attend and observe the inspection/start-up. An acceptance letter from the authorized installer, authorized designer, and PE, as applicable, shall be provided to the LHD prior to issuance of the OP.
- I. All specified site preparation steps and construction specifications for the dispersal field shall be strictly adhered to including, but not limited to, specified depth of beds in relation to site limiting conditions, cover material specifications (if needed), and bed installation method.
- J. The installer authorized in writing by GoodFlow Solutions, the engineer or authorized designer, and the ORC authorized in writing by GoodFlow Solutions shall conduct an inspection/start-up of the GoodFlow Solutions system and all associated system components. The LHD personnel will attend and observe the inspection/start-up. The inspection/start-up will include: system watertightness testing; control panel operation and alarm settings, if needed; and pump model numbers and time clock settings, if needed.

#### VIII. Operation, Maintenance, Monitoring, and Reporting

- A. GoodFlow Solutions systems shall be classified, at a minimum, as a Type Va system in accordance with Table V(a) of Rule .1961(b). Management and inspection shall be in accordance with Rules .1961 and .1970. The ORC shall be a certified subsurface operator.
- B. All GoodFlow Solutions systems require an operation and maintenance agreement between the system owner and GoodFlow Solutions, its authorized representative, or with an ORC authorized in writing by GoodFlow Solutions as per Rule .1970. The system shall be inspected by the ORC. The ORC must have proper equipment and training to access and program the control panels on site.
- C. All GoodFlow Solutions systems shall be operated and maintained according to the latest version of the GoodFlow Solutions O&M manual.
- D. The LHD and the ORC shall conduct monitoring inspections of GoodFlow Solutions systems at the frequency specified in Table V(b) of Rule .1961 and per the OP.
- E. At each GoodFlow Solutions system inspection, the ORC shall, at a minimum, observe, monitor, record and/or collect the following:
  - 1. Wastewater, sludge, and scum levels in all tanks;
  - 2. Clogging of the effluent filter;
  - 3. Watertightness of all tanks, risers, and pipe connections at the tanks;

4. Operation of pumps, floats, valves, electrical controls, and alarms, including record of alarms since last visit and troubleshooting actions;
  5. Dispersal field pump delivery rate (drawdown test), determination of the average pump run time, and dispersal field dosing volume;
  6. Average and maximum 7-day and 30-day flowrates in gpd;
  7. Any structural damage, accessibility issues, adequate ventilation, excess odors, ponding of effluent, insect infestations, vegetative growth over the dispersal field, or surfacing of effluent on the dispersal field;
  8. Sample of GoodFlow Solutions system effluent collected from the sampling point to check for effluent clarity and odor.
  9. Readings from cycle counters, run time meters, and/or water meters; and
  10. Samples and laboratory analyses of GoodFlow Solutions systems influent and effluent as required.
- E. The ORC shall also conduct additional observations, measurements, monitoring, and maintenances activities as specified in the OP and as recommended by the manufacturer.
- F. Sampling
1. All sampling shall be done in accordance with Rule .1970(n)(3) and (5).
  2. All systems shall be tested for effluent CBOD<sub>5</sub>, TSS, NH<sub>4</sub>-N, and fecal coliforms. Influent shall be tested for BOD<sub>5</sub> and TKN.
  3. Influent samples shall be taken from a sampling port located between the septic tank and the CTL 12 or CTL 18 system or from the dosing tank.
  4. Effluent samples shall be collected from the sampling device.
  5. Additional sampling of influent or effluent may be determined to be necessary by the ORC during a system inspection to assist with troubleshooting or to verify system performance.
  6. Adjustments in the monitoring schedule and number of parameters sampled may be proposed by the manufacturer and approved by the State as a modification to this Provisional Approval.
- G. Notification and Performance of Maintenance and Repairs
1. The ORC shall alert GoodFlow Solutions, the LHD, and the system owner within 48 hours of needed maintenance or repair activities including but not limited to landscaping, tank sealing, tank pumping, pipe or control system repairs, and/or adjustments to any other system component.
  2. The ORC shall notify the system owner, GoodFlow Solutions, and the LHD whenever the pump delivery rate efficiency and/or average pump run times are not within 25% of initial measurements conducted prior to system start-up.
  3. System troubleshooting and needed maintenance shall be provided to maintain the pump delivery rate and average pump run time within 25% of initial measurements conducted during system start-up.
  4. Tank compartments will be pumped as needed upon recommendation of the ORC and in accordance with the GoodFlow Solutions O&M Manual instructions. However, at a minimum, the septic tank will be pumped whenever the solids level exceeds 25% of the tank's total liquid working capacity or the scum layer is more than four inches thick.
  5. The tanks shall be pumped by a permitted septage management firm, and the septage



handled in accordance with 15A NCAC 13B .0800.

6. All maintenance activities shall be logged and recorded in the ORC reports provided to the LHD.

#### H. Reporting

1. The ORC shall provide a completed written report to the system owner, GoodFlow Solutions, and the LHD within 30 days of each inspection. At a minimum, this report shall specify:
  - a. The date and time of inspection;
  - b. System operating conditions measured and observed according to VIII.D and VIII.E;
  - c. Results from any laboratory analyses of any influent and effluent samples;
  - d. Maintenance activities performed since the last inspection report;
  - e. An assessment of overall system performance;
  - f. A list of any improvements or maintenance needed;
  - g. A summary of the flow data retrieved from the data logging devices, the daily, 7-day, and 30-day flows, flow variances, and other operating conditions;
  - h. A determination of whether the system is malfunctioning, and the specific nature of the malfunction; and
  - i. Any changes made in system settings based on recommendations of the manufacturer.
2. Proposal for Evaluation and Reporting
  - a. The manufacturer shall maintain a contract for evaluation of the performance of the provisional wastewater system with an independent third-party laboratory, consultant, or other entity that has expertise in the evaluation of wastewater systems and that is approved by the State.
  - b. Semi-annual reports are due to the State by January 31 and July 31 of each year from the third-party. The reports shall include the following information at a minimum:
    - (1) list of all systems currently installed under Provisional Approval;
    - (2) results of all effluent quality samples collected, including a table summarizing all the effluent quality results;
    - (3) flow monitoring information;
    - (4) copies of all ORC inspection reports;
    - (5) assessment of system performance in relation to effluent quality standards and showing compliance with Rule .1970(o);
    - (6) assessment of system performance in relation to flow monitoring and showing compliance with Rule .1970(o);
    - (7) assessment of physical and chemical properties of the materials used to construct the system in terms of strength, durability, and chemical resistance to loads and conditions experienced and showing compliance with Rule .1969(g)(2)(B);
    - (8) recommended areas of applicability for the system; and
    - (9) conditions and limitations related to the use of the system.
  - c. Upon completion of the research and testing protocol, the third-party shall submit a final report to the State. This report shall be submitted in conjunction with GoodFlow Solutions completing an application for Innovative Approval and within five years of the effective date of the first OP issued pursuant to this approval.
  - d. The final report shall contain the following information at a minimum:
    - (1) list of all systems currently installed during the Provisional Approval period;

- (2) results of all effluent quality samples collected, including a table summarizing all the effluent quality results;
  - (3) flow monitoring information;
  - (4) copies of all ORC inspection reports;
  - (5) assessment of system performance in relation to effluent quality standards and showing compliance with Rule .1970(o);
  - (6) assessment of system performance in relation to flow monitoring and showing compliance with Rule .1970(o);
  - (7) assessment of physical and chemical properties of the materials used to construct the system in terms of strength, durability, and chemical resistance to loads and conditions experienced and showing compliance with Rule .1969(g)(2)(B);
  - (8) recommended areas of applicability for the system; and
  - (9) conditions and limitations related to the use of the system.
- e. The Final Report shall be in electronic format and may be published on the On-Site Water Protection Branch's website without confidentiality. The contents of the semi-annual and final reports shall not be altered from the original document without approval from GoodFlow Solutions.
- f. The research and testing protocol shall be managed by Anlauf Engineering or other approved third-party evaluator and includes the following minimum activities outlined in a detailed protocol provided in the submittal:
- (1) A minimum of 50 complete data sets shall be collected from a minimum of 15 sites each, for TS-I systems.
  - (2) A complete data set includes the following information: influent BOD and TKN; and effluent CBOD and TSS, and fecal coliform and NH<sub>3</sub>. There must be at least 30 days between samples collected from any one site.
  - (3) Samples shall be collected from all sites. A site may be excluded if adequate justification is provided that the site is unsuitable as a test site. The samples from that site must be provided but will not be used as part of the data evaluation.
  - (4) Each site shall produce a minimum of two complete data sets collected over at least a 12-month period.
  - (5) For coastal resort communities, two samples shall take place between June 1 and September 8 of each year. The samples must be taken at least six weeks apart.
  - (6) Other seasonal homes shall be inspected by the ORC and sampled during the projected times of peak use and/or occupancy. Samples shall not be collected during periods with limited or no occupancy.
  - (7) The samples will be collected during a scheduled visit by the ORC.
  - (8) A copy of the sample results will be provided to the On-Site Wastewater Branch after the analyses.
  - (9) Hydraulic performance shall be assessed based upon ponding conditions and will be done at the time the influent and effluent samples are drawn. The ponding level for the system passing shall be to the bottom of the distribution pipe. Observation data can be discarded if a one inch or greater rainfall occurred in the last 24 hours. Failed observation data can also be discarded if

the port is re-inspected from no more than three days afterwards and found to pass upon re-inspection.

- (10) At least one measurement for each site used for the hydraulic performance assessment shall be taken during a typical wet-weather period (January through March) and no more than two measurements taken at a single site shall be used for the overall hydraulic performance assessment.
- g. In order to meet the effluent monitoring and hydraulic performance criteria in this Paragraph, data may be presented that has been collected as part of a comparable third-party evaluation in another State or Canada.
- h. Compliance of each site and the system shall be in accordance with requirements set forth in Rule .1970. Consideration shall be given for the system to be reclassified as an approved Innovative System when the requirements of Rule .1969(g)(2) for Fast Track approval and system compliance requirements of Rule .1970(o)(2) have been met.

#### IX. Responsibilities and Permitting Procedures

- A. Prior to the installation of a GoodFlow Solutions system at a site, the owner or owner's agent shall fill out an application at the LHD for the proposed use of this system. The LHD shall issue an Improvement Permit (IP) or Construction Authorization (CA) or amend a previously issued CA allowing for the use of a CTL 12 or CTL 18 system.
- B. The IP and CA shall contain all conditions the site approval is based upon, including the proposed used of the Provisional System. The OP will include all conditions specified in the IP and the CA.
- C. When a special site evaluation is required pursuant to Rule .1970(p)(1), an evaluation and written, sealed report from a Licensed Soil Scientist (LSS) regarding the site shall be provided to the LHD. The report shall contain the information as specified in Rule .1970(p)(2) and "Requirements for Submittals of Soil Reports and Pretreatment and/or Dispersal System Designs". The LHD may request the assistance of their Regional Soil Scientist in evaluating this report prior to permit issuance.
- D. Prior to issuance of a CA for GoodFlow Solutions systems, a design submittal prepared by an authorized designer or a PE shall be submitted for review and approval by the LHD. The design submittal shall include the information required in "Requirements for Submittals of Soil Reports and Pretreatment and/or Dispersal System Designs". Systems over 1,000 gpd, or as otherwise required, shall be designed by a PE.
- E. It is recommended that local authorized environmental health practitioners attend a design training session offered by the manufacturer/authorized representative prior to permitting the system. Also, at the request of the LHD, an OSWP Engineer will review designs not otherwise required to be reviewed by the State.
- F. An authorized installer and authorized designer or PE, as applicable, shall certify in writing that the GoodFlow Solutions system was installed in accordance with the approved plans and specifications prior to OP issuance.

G. For sites required to be evaluated by a LSS or Licensed Geologist (LG) (see Section V and IX.C), the LHD may specify as a condition on the IP and CA that a LSS or LG oversee critical phases of the dispersal field installation and certify in writing that the installation was in accordance with their specified site/installation requirements prior to the OP issuance.

X. Repair of Systems

The provisions of 15A NCAC 18A .1961(l) shall govern the use of the GoodFlow Solutions systems for repairs to existing malfunctioning wastewater systems.

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_