

3224 LONG VALLEY RD

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Groundwater and Wastewater Services File Imaging Project
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Mecklenburg County
Health Department

October 30, 1996

Sandy Cort
Allen Tate Realtors
7824 Pineville-Matthews Road
Charlotte, NC 28226

Dear Mrs. Cort:

At your request the following information is offered regarding the sub-surface sewage disposal system for the property located at 3224 Long Valley Road, Charlotte, North Carolina.

A visit was made to the site for the purpose of collecting a well water sample and to conduct an inspection of the septic system on September 23, 1996. The results of this inspection are reported in my letter to Mr. Dick Carter, Dick Carter Realty, dated September 26, 1996. A copy of this letter is attached for your review.

In reference to NCAC 15A, 18A, "Laws and Rules For sewage Treatment and Disposal Systems", Section .1952 was amended in 1990 to include the pump and control circuits be provided with manual circuit disconnects within an approved enclosure equivalent to NEMA 4X and mounted adjacent to the pump tank at the riser. Prior to this date pump controls were located inside the pump tank.

It is not a requirement that the electrical control units for the system located at 3224 Long Valley Road be upgraded. However, it is recommended that a high water alarm be present for alerting the property owner if the effluent level in the pump tank becomes too high. Should you desire to install a high water alarm as recommended, please refer to the enclosed information concerning proper installation.

If you have any further questions regarding this matter, please do not hesitate to contact me at 336-5571.

Sincerely,

Judy J. Kiser, R.S.
Individual Water and Wastewater Systems

Enclosure (4)

cc: Dick Carter
Dick Carter Realty

Mecklenburg County
Health Department

September 26, 1996

Mr. Dick Carter
Dick Carter Realty, Inc.
723 S. Sharon Amity, Suite 201
Charlotte, NC 28211

Dear Mr. Carter:

At your request, a well sample was collected and an inspection conducted of the sewage disposal system for the property located at 3224 Long Valley Road, Charlotte, North Carolina on September 23, 1996.

The laboratory analysis of the well water sample was reported to be negative for coliform bacteria.

At the time of the investigation, there was no effluent apparent on the surface of the ground.

According to the records on file in this Department, the sewage treatment and disposal system for this residence consists of a septic tank, a pump tank or (lift pump station) and the nitrification field system.

Enclosed are copies of certain sections off NCAC 15A, 18A, " Laws and Rules For Sewage Treatment And Disposal Systems". These sections relate to specific components required for this sewage disposal system. Section .1952 (c) (5) addresses the requirements of the alarm system and Section .1954 (b) (5) addresses the requirements for the riser.

I was unable to determine if an alarm system is provided for the sewage disposal system. Also, the riser for the pump tank has either been removed or covered with soil, therefore I was unable to check the operation of the pump.

In order to complete the inspection of the sewage disposal system, I must confirm that these components are provided.

Please contact me at 336-5571 to discuss this matter.

Sincerely,

Judy J. Kiser, R.S.
Individual Water and Wastewater Systems

Enclosures (6)

electrical components of treatment systems shall be above the 100-year flood level or otherwise protected against a 100-year flood.

History Note: Statutory Authority G.S. 130A-335(e) and (f);
Eff. July 1, 1982;
Amended Eff. January 1, 1990; October 1, 1982.

.1951 APPLICABILITY OF RULES

(a) Except as required in Paragraph (b) of this Rule, the minimum horizontal distance requirements in Rule .1950(a)(4), (11), (12), or (13) shall not apply to the installation of a single septic tank system serving a single-family residence not to exceed four bedrooms on a lot or tract of land:

(1) which, on July 1, 1977, is specifically described in a deed, contract, or other instrument conveying fee title or which is specifically described in a recorded plat; and

(2) which, on July 1, 1977, is of insufficient size to satisfy the minimum horizontal distance requirements in Rule .1950(a)(4), (11), (12), or (13) of this Section; and

(3) which, on the date system construction is proposed to begin, is not capable of being served by a community or public sewerage system.

(b) For those lots or tracts of land described in Rule .1951(a) of this Section, where any of the minimum horizontal distance requirements prescribed in Rule .1950(a)(4), (11), (12), or (13) of this Section can be met, such minimum horizontal distances shall be required.

(c) For those lots or tracts of land described in Rule .1951(a) of this Section, where a specific minimum horizontal distance requirement prescribed in Rule .1950(a)(4), (11), (12), or (13) of this Section cannot be met, the maximum feasible horizontal distance, as determined by the local agency, shall be required. Provided, however, that at least the following minimum horizontal distances shall be required in all cases:

(1) Rule .1950(a)(4) of this Section, the minimum horizontal distance shall be not less than 50 feet;

(2) Rule .1950(a)(11) of this Section, the minimum horizontal distance shall be not less than 8 feet;

(3) Rule .1950(a)(12) and (13) of this Section, the minimum horizontal distance shall be not less than 5 feet.

(d) All other provisions of this Section except as exempted by this Rule shall apply to the lots or tracts of land described in Rule .1951(a) of this Section. Any rules and regulations of the Commission for Health Services or any local board of health in effect on June 30, 1977, which establish greater minimum distance requirements than those provided for in this Section, shall remain in effect and shall apply to a lot or tract of land to which Rule .1950(a)(4), (11), (12), or (13) of this Section do not apply.

(e) It shall be the responsibility of any owner of a lot or tract of land, who applies for a permit required by Rule .1937 of this Section, and who seeks, under the provisions of Rule .1951(a) of this Section, to exempt his lot or tract of land from any of the minimum horizontal distance requirements of Rule .1950(a)(4), (11), (12), or (13) of this Section to provide to the local health department necessary records of title to the lot or tract of land for which the exemption is sought in order that the local agency may determine whether the applicant is entitled to any such exemption.

(f) For those lots or tracts of land which, on the effective date of this Section, are specifically described in a deed or recorded plat, and the minimum horizontal distance requirements prescribed in Rule .1950(a)(15)(B) cannot be met, the maximum feasible horizontal distance, as determined by the local health department, shall be required, but shall not be less than ten feet.

History Note: Statutory Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990.

.1952 SEPTIC TANK, DOSING TANK AND LIFT STATION DESIGN

(a) A septic tank or dosing tank shall be watertight, structurally sound, and not subject to excessive corrosion or decay. Septic tanks shall be of two-compartment design. The inlet compartment of a two-compartment tank shall hold between two-thirds and three-fourths of the total tank capacity. A properly designed dosing siphon or pump shall be used for discharging sewage effluent into nitrification lines when the total length of such lines exceeds 750 linear feet in a single system and as required for any pressure-dosed system. When the design daily flow from a single system exceeds 3,000 gallons per day or when the total length of nitrification lines exceeds 2,000 linear feet in a single system, alternating siphons or pumps shall

be used which shall discharge to separate nitrification fields. The dose volume from pump or siphon systems shall be of such design so as to fill the nitrification lines from 66 percent to 75 percent of their capacity at each discharge except as required for low-pressure distribution systems. The discharge rate from dosing systems shall be designed to maximize the distribution of the effluent throughout the nitrification field. Septic tanks installed where the top will be deeper than 30 inches below the finished grade shall have an access manhole, with cover, extending to within six inches of the finished grade, having a minimum opening adequate to accommodate the installation or removal of the septic tank lid. Any system serving a design unit with a design sewage flow greater than 3,000 gallons per day shall have access manholes over each compartment and over the outlet sanitary tee. The access manholes shall extend at least to finished grade and be designed and maintained to prevent surface water inflow. The manholes shall be sized to allow proper inspection and maintenance. All dosing tanks shall have a properly functioning high-water alarm. The alarm shall be audible and visible by system users and weatherproof if installed outdoors. The alarm circuit shall be provided with a manual disconnect in a watertight, corrosion-resistant outside enclosure (NEMA 4X or equivalent) adjacent to the dosing tank.

(b) Minimum liquid capacities for septic tanks shall be in accordance with the following:

(1) Residential Septic Tanks (for each individual residence or dwelling unit):

Number of Bedrooms	Minimum Liquid Capacity	Equivalent Capacity Per Bedroom
3 or less	900 gallons	300 gallons
4	1,000 gallons	250 gallons
5	1,250 gallons	250 gallons

(2) Septic tanks for large residences, multiple dwelling units, or places of business or public assembly shall be in accordance with the following:

(A) The minimum liquid capacity of septic tanks for places of business or places of public assembly with a design sewage flow of 600 gallons per day or less shall be determined in accordance with the following: $V = 2Q$; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow.

(B) Individual residences with more than five bedrooms, multiple-family residences, individual septic tank systems serving two or more residences, or any place of business or public assembly where the design sewage flow is greater than 600 gallons per day, but less than 1,500 gallons per day, the liquid capacity of the septic tank shall be designed in accordance with the following: $V = 1.17Q + 500$; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow. The minimum liquid capacity of a septic tank serving two or more residences shall be 1,500 gallons.

(C) Where the design sewage flow is between 1,500 gallons per day and 4,500 gallons per day, the liquid capacity of the septic tank shall be designed in accordance with the following: $V = 0.75Q + 1,125$; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow.

(D) Where the design sewage flow exceeds 4,500 gallons per day, the septic tank shall be designed in accordance with the following: $V = Q$; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow.

(E) The minimum liquid capacity requirements of Subparagraph (b)(2) of this Rule shall be met by use of a single two-compartment septic tank or by two tanks installed in series, provided the first tank is constructed without a baffle wall and contains at least two-thirds of the total required liquid capacity.

(3) The minimum capacity of any septic tank shall be 750 gallons.

(c) The following are minimum standards of design and construction of pump tanks and pump dosing systems:

(1) The liquid capacity of a pump tank shall be considered as the entire internal volume with no additional requirement for freeboard. Pump tanks shall have a minimum liquid capacity in accordance with the following:

(A) Pump tanks for systems with nitrification fields installed in Soil Group I, II, or III soils, as defined in these Rules, shall have a minimum liquid capacity equal to two-thirds of the required septic tank liquid capacity.

(B) Pump tanks for systems installed in Group IV soils shall have a minimum liquid capacity equal to the required septic tank liquid capacity.

(C) The minimum liquid capacity of any pump tank shall be 750 gallons.

(D) An alternate method to determine minimum liquid capacity of a pump tank shall be to provide for the minimum pump submergence requirement (Subparagraph (c)(5) of this Rule), the minimum dose volume requirement (Paragraph (a) of this Rule), and the minimum emergency storage capacity requirement. The emergency storage capacity requirement is determined based on the type of facility served, the classification of surface waters which would be impacted by a pump tank failure, and the availability of standby power devices and emergency maintenance personnel. The emergency storage capacity shall be the freeboard space in the pump tank above the high-water alarm activation level plus the available freeboard space in previous tankage and in the collection system below the lowest ground elevation between the pump tank and the lowest connected building drain invert. The minimum emergency storage capacity for residential systems and other systems in full-time use on sites draining into WS-I, WS-II, WS-III, SA, SB, and B waters shall be 24 hours, without standby power, or 12 hours with standby power manually activated, or four hours with standby power automatically activated or with a high-water alarm automatically contacting a 24-hour maintenance service. The minimum emergency storage capacity for systems not in full-time use and for all systems at sites draining into all other surface waters shall be 12 hours without standby power, or eight hours with standby power manually activated, or four hours with standby power automatically activated or with a high-water alarm automatically contacting a 24-hour maintenance service.

(E) Notwithstanding Paragraphs (c) (1) (A)-(D), other criteria for pump tank capacity may be approved by the local health department and the State for raw sewage lift stations, pressure sewer systems, and systems with design flows exceeding 3,000 gallons per day.

(2) The effluent pump shall be capable of handling at least one-half inch solids and designed to meet the discharge rate and total dynamic head requirements of the effluent distribution system. The pump shall be listed by Underwriter's Laboratory or an equivalent third party electrical testing and listing agency, unless the proposed pump model is specified by a registered professional engineer.

(3) Pump discharge piping shall be of Schedule 40 PVC or stronger material and adequately secured. Fittings and valves shall be of compatible corrosion-resistant material. A threaded union, flange, or similar disconnect device shall be provided in each pump discharge line. All submersible pumps shall be provided with a corrosion-resistant rope or chain attached to each pump enabling pump removal from the ground surface without requiring dewatering or entrance into the tank. Valves shall also be readily accessible from the ground surface.

(4) Antisiphon holes (three-sixteenth inch) shall be provided when the discharge or invert elevation of the distribution system is below the high-water alarm elevation in the pump tank, or in accordance with pump manufacturer's specifications. Check valves shall be provided when the volume of the supply line is greater than 25 percent of the dosing volume, or in accordance with pump manufacturer's specifications. When provided, the antisiphon hole shall be located between the pump and the check valve.

(5) Sealed mercury control floats or similar devices designed for detecting liquid levels in septic tank effluent shall be provided to control pump cycles. A separate level sensing device shall be provided to activate the high-water alarm. Pump-off level shall be set to keep the pump submerged at all times or in accordance with the manufacturer's specifications. A minimum of 12 inches of effluent shall be maintained in the bottom of the pump tank. The high-water alarm float shall be set to activate within six inches of the pump-on level. The lag pump float switch, where provided, shall be located at or above the high-water alarm activation level.

(6) Pump and control circuits shall be provided with manual circuit disconnects within a watertight, corrosion-resistant, outside enclosure (NEMA 4X or equivalent) adjacent to the pump tank, securely mounted at least 12 inches above the finished grade. The pump(s) shall be manually operable without requiring the use of special tools or entrance into the tank for testing purposes. Conductors shall be conveyed to the disconnect enclosure through waterproof, gasproof, and corrosion-resistant conduits, with no splices or junction boxes provided inside the tank. Wire grips, duct seal, or other suitable material shall be used to seal around wire and wire conduit openings inside the pump tank and disconnect enclosure.

(7) For systems requiring duplex and multiplex pumps, a control panel shall be provided which shall include short-circuit protection for each pump and for the control system, independent disconnects, automatic pump sequencer, hand-off-automatic (H-O-A) switches, run lights, and elapsed time counters for each pump. Alarm circuits shall be supplied ahead of any pump overload or short

circuit protective devices. The control panel must be in a watertight, corrosion-resistant enclosure (NEMA 4X or equivalent) unless installed within a weathertight building. The panel shall be protected from intense solar heating.

(8) Dual and multiple fields shall be independently dosed by separate pumps which shall automatically alternate. The supply lines shall be "H" connected to permit manual alternation between fields dosed by each pump. "H" connection valving shall be readily accessible from the ground surface, either from the pump tank access manhole or in a separate valve chamber outside the pump tank. Other equivalent methods of dosing dual or multiple fields may be approved by the State.

(9) The pump tank shall have a properly functioning high-water alarm. The alarm circuit shall be supplied ahead of any pump overload and short circuit protective devices. The alarm shall be audible and visible by system users and weatherproof if installed outdoors in an enclosure (NEMA 4X or equivalent).

(d) Siphons and siphon dosing tanks may be used when at least two feet of elevation drop can be maintained between the siphon outlet invert and the inlet invert in the nitrification field distribution system.

(1) Siphon dosing tanks shall be designed in accordance with the minimum dose requirements in this Rule and shall meet the construction requirements of this Section. The siphon dose tank shall provide at least 12 inches of freeboard, and the inlet pipe shall be at least three inches above the siphon trip level. The high-water alarm shall be set to activate within two inches of the siphon trip level.

(2) Siphon dosing tanks shall have a watertight access opening over each siphon with a minimum diameter of 24 inches and extending to finished grade and designed to prevent surface water inflow.

(3) The slope and size of the siphon discharge line shall be sufficient to handle the peak siphon discharge by gravity flow without the discharge line flowing full. Vents for the discharge lines shall be located outside of the dosing tank or otherwise designed to not serve as an overflow for the tank.

(4) All siphon parts shall be installed in accordance with the manufacturer's specifications. All materials must be corrosion-resistant, of cast iron, high density plastic, fiberglass, stainless steel, or equal.

(5) Siphon dosing tanks shall have a properly functioning high-water alarm that is audible and visible by system users and weatherproof if installed outdoors in an enclosure (NEMA 4X or equivalent).

(e) Raw sewage lift stations shall meet the construction standards of this Section and all horizontal setback requirements for sewage treatment and disposal systems in accordance with Rule .1950(a) of this Section unless the station is a sealed, watertight chamber, in which case the setback requirements for collection sewers in Rule .1950(e) of this Section shall apply. Sealed, watertight chambers shall be of a single, prefabricated unit, such as fiberglass, with sealed top cover, and preformed inlet and outlet pipe openings connected with solvent wells, O-ring seals, rubber boots, stainless steel straps, or equivalent. Dual pumps shall be provided for stations serving two or more buildings or for a facility with more than six water closets. Pumps shall be listed by Underwriter's Laboratories or an equivalent third party electrical testing and listing agency, and shall be grinder pumps or solids-handling pumps capable of handling at least three-inch spheres unless the station serves no more than a single water closet, lavatory, and shower, in which case two-inch solids handling pumps shall be acceptable. Minimum pump capacity shall be 2.5 times the average daily flow rate. The dosing volume shall be set so that the pump-off time does not exceed 30 minutes, except for stations serving single buildings, and pump run-time shall be from three to ten minutes at average flow. Pump station emergency storage capacity and total liquid capacity shall be determined in accordance with Paragraph (c)(1)(D) of this Rule except for a sealed, watertight chamber serving an individual building, in which case a minimum storage capacity of eight hours shall be required. All other applicable requirements for pump tanks and pump dosing systems in accordance with Paragraph (c) of this Rule shall also apply to raw sewage lift stations.

History Note: Statutory Authority G.S. 130A-335(e) and (f);
Eff. July 1, 1982;
Amended Eff. August 1, 1991; January 1, 1990.

.1953 PREFABRICATED SEPTIC TANKS AND PUMP TANKS

When prefabricated concrete tanks or tanks of other material are used, they shall be constructed in accordance with the plans which have been approved by the State and shall comply with all requirements of this Section. At least three complete sets of plans and specifications for the design of the prefabricated septic