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Memo 22-2

Date: May 11, 2022

Title: Chatham Health District Onsite Subsurface Sewage Disposal Systems (septic systems) and Well Policies

To: Chatham Health District Septic Installers/Pumpers, Well Drillers, Surveyors, Engineers, Builders, Developers and Code Officials

Chatham Health District (CHD) has previously issued procedures, local ordinances, forms/applications, and requirements for the data collection, review, inspection, and approval of onsite septic systems, water treatment wastewater disposal systems and wells (see attached Memo 02-1 to 02-4 and 05-1, Wastewater Pumping and Permit to Discharge Regulation, 19-13-B100a Application, Application to Construct or Repair a Sewage Disposal System, CT DPH Form 2, 2A, 3 and Permit to Discharge, CHD Application for Service, Requirements for Engineered and Non- Engineered Plans, and Water Treatment Wastewater (WTW Application). To better standardize our enforcement of the Connecticut Public Health Code (the Code), Connecticut General Statutes, and Chatham Health District Policies and Ordinances, the following items will take effect the date of this Memo and are based on the CT General Statutes 19a-240 to 246, Code Sections 19-13-B51a-m, 19-13-B100a, B103-B104, Connecticut Design Manual for Subsurface Sewage Disposal Systems for Households and Small Commercial Buildings and the current Technical Standards which outline the minimum duties of directors of health, registered sanitarians, and authorized agents of the director of health to conduct land use (septic and well related) activities.

Definitions:

- 1. Approval:** Statement that an individual lot plan meets the Code and Chatham Health District requirements for on-site subsurface sewage disposal and water supply, so that permits may be issued.
- 2. Areas of Special Concern:** Parcels/lots which meet the requirements of the Code Section 19-13-B103d (e)
- 3. As-Built:** Final document of a lot submitted to CHD once the septic system installation has been approved, permitted, and inspected by CHD. This document shall meet all the requirements of Memo 02-1 and be submitted by a land surveyor (engineered and/or non-engineered new plan) or septic installer (non-engineered repair) prior to issuance of a Permit to Discharge.
- 4. Certified CHD agent:** Current or former employee of CHD or CHD member town health department (predating CHD) who meets/met the requirements of the Code Section 19-13-B103e (b).
- 5. Deep test hole/pit:** Hole (s) dug to identify the naturally and human placed soil profile (soil types, depth to ledge, groundwater/seasonal high groundwater, and restrictive layers) to design a septic system. Deep test holes shall be dug with shelves/ramps to allow the investigators to safely assess the soil profiles and/or shallow holes (2-3') can be dug to observe the upper layers and then excavated to a depth of at least 4' below (8' for lots with perc rates faster than 1 min/inch) the proposed leaching area to verify depth to ledge. Test holes should be witnessed during the state wet season (Feb 1-May 31) to determine the seasonal high groundwater and the minimum number of holes is listed in Table 1.

- 6. Groundwater monitoring:** Memo 05-01 outlines when groundwater monitoring is required to determine the seasonal high groundwater for onsite subsurface sewage design. Monitoring shall occur throughout the wet season according to the pipe construction, monitoring, and reporting outlined in Memo 05-01.
- 7. Guidance plan:** A plan designed by a Connecticut professional engineer (PE) to prepare a lot which has potentially suitable soils (at the risk of the property owner) that may create a leaching system area with 4' to ledge rock (2' of which is naturally occurring soils, per health code) and/or for seasonal high groundwater monitoring. A Certified CHD agent will review the plan and make comments, but no statement of suitability or approval will be issued until the leaching system area has been prepared according to plan and inspected by a Certified CHD agent. A guidance plan must include all elements of an engineered plan review and the proposed leaching system area must be staked by a Connecticut licensed surveyor (LS) with a benchmark and filling grades prior to the stripping of topsoil. Fill used to augment natural soil must be select fill and/or ASTM C33 with an approved sieve (Per Memo 02-2) and pass an onsite perc test by CHD once the material is placed and compacted. The area is to be protected from damage or erosion by the lot owner.
- 8. Leaching system area:** Soil in and within 10' in all directions from the side edge of the proposed leaching structure, typically used for site suitability concerning depth to ledge rock. Soils data within 25' downslope (50' downslope for systems >2000 Gallons per Day (GPD)) of a leaching area shall also be utilized for the design.
- 9. Non-typical ledge rock:** Soft, partly decomposed rock layer, which easily can be excavated by a backhoe, but which appears to be part of the continuous bedrock (often called rotten rock). The leaching system bottom shall maintain two vertical feet to non-typical ledge rock.
- 11. Parcel:** Single or series of lots submitted to the CHD for review and/or comment.
- 12. Percolation test:** Shall be defined and conducted according to the current Technical Standards. Percolation tests are to be conducted by a Certified CHD agent, PE and/or agent of a PE. Certified CHD agents will conduct percolation tests for all lots except those designed by an engineer and/or any new lot. An adequate water supply (8-10 gal/perc hole) shall be provided by the property owner and/or contractor. Percolation tests of select fill shall be required for any septic system where the design is based upon the percolation rate of the select fill, instead of natural soils. The minimum number of percolation tests is listed in Table 1.
- 13. Potentially suitable soil:** The leaching system area for on-site subsurface sewage disposal where there is less than 4' of soil above ledge rock but at least 2' of which is naturally occurring soils. Potentially suitable soils may be made suitable, at the risk of the property owner, with a guidance plan and site preparation.
- 14. Premature septic failure/sewage discharge:** When sewage discharges according to 19-13-B103c (f) prior to the manufacturers and/or reasonable estimated material lifetime, assuming proper system design, installation, and routine maintenance.
- 15. Project lead:** A Certified CHD agent who is responsible for all regulatory aspects of a parcel. The project lead may allow other Certified CHD agents to conduct inspections and issue permits, but the project lead is ultimately responsible for the regulatory activities for the property.
- 16. Site investigation:** Inspections or site visits that can include, but are not limited to, soils testing, percolation tests, ledge profiles, groundwater monitoring, hydraulic analysis, locating proposed/existing water supplies and septic systems, identifying wetlands/watercourses and/or other inspections.
- 17. Final Inspection:** A Certified CHD agent shall conduct a final inspection of all new and repair septic systems to ensure conformance with the Code, the approved plan, and site conditions.
- 18. Scarification Inspection:** A Certified CHD agent shall conduct a scarification (strip) inspection of the leaching area, prior to select fill of ASTM C33 sand placement, when the leaching system is not completely below the original topsoil. Scarification should be avoided within 24 hours of heavy rain. The area of

scarification is to be determined by the approved plan/staking inspection, with the original topsoil/unsuitable material removed, and the bottom raked for inspection. Any boulders, existing septic systems, drains, large roots, buried topsoil and/or standing water within the scarification should also be removed.

- 19. Staking Inspection:** A Certified CHD agent verification of the approved plan and septic site by checking the benchmark and existing grade elevations against the approved plan design, onsite testing, and the Code. Any alterations of the plan based on the stakeout inspection shall be approved by the CHD agent and plan designer prior to proceeding with a red lined and/or revised plan. This is required for new and repaired leaching systems (beyond distribution box replacements) and encouraged for other septic repairs.
- 20. Suitability:** Statement that a parcel meets the Code and Chatham Health District requirements for on-site subsurface sewage disposal and/or water supply, so that recommendation of suitability can be issued to a Town Commission, Town Agent and/or parcel owner. Suitability is not approval to issue permits for septic systems, wells or WTWDS.
- 21. Water Treatment Wastewater Disposal System (WTWDS):** Defined in the current Technical Standards and requiring application, fee, and approval by the CHD with the Water Treatment Wastewater (WTW) Application. A WTWDS as-built shall show the exact location (ties from two or more points to a structure or surveyed as-built), size, depth, length, and type of product is to be submitted to CHD upon completion of the system.

Site Investigation and Review: 19-13-B103e (e) & 19-13-B104c (f)

- CHD will assure the accuracy of new parcel site investigations by requiring a Certified CHD agent AND a Connecticut Professional Engineer (PE), Connecticut Licensed Surveyor (LS), or Connecticut Certified Soil Scientist (and/or designated agent of said individuals who is approved by the CHD) are present for site investigation. Soils testing conducted for leaching repairs, 19-13-B100a (other than new parcels), and WTW shall also be assured by a Certified CHD agent (a PE, LS, Soils Scientist, or their agent may be required to be present for said testing). The Certified CHD agent shall record the site investigation data on the current Technical Standard Form #2, 2A, or DPH approved equivalent. The PE, LS, Soil Scientist or their agent shall locate all soil investigations (deep test pits, percolation tests, ledge probes, ledge profiles and/or monitoring wells) for all new lots and all repairs requiring engineered plans. Every attempt will be made to assign the Certified CHD agent who conducts the site investigation as Project lead. Application for site testing includes the necessary application for service, fee, and a map of the parcel showing: property lines, watercourses, ledge outcrops, neighboring wells/water lines and septic systems, potential testing locations and contours. Per 19-13-B103e (D) (3), the investigation should be conducted within 10 working days of application. Any investigation conducted without a Certified CHD agent may require additional testing prior to determination of suitability (subdivision/lot split or commission review), approval (single lot), issuance of a septic permit, well permit and/or WTW approval. CHD may require a PE be present for lots suspected (USGS Soils maps, historical soils data, lot size, watercourse frontage) as an area of special concern.
- Table 1 identifies the minimum number of deep test holes/pits and percolation tests to be conducted per lot to determine depth to restrictions, natural and human placed soils/material, effective leaching area (ELA) and MLSS. Soils testing in the septic primary and reserve, as well as 25-50' downslope (for Minimum Leaching System Spread-MLSS purposes) are required to determine suitability of all new or undeveloped parcels, with percolation testing in the primary and reserve at the soil depth of the proposed leaching system. Leaching repairs also require deep test holes and a percolation test (s) and should be located away from existing trees and shrubs (to prevent root intrusion to the septic system and/or damage to the trees/shrubs). One deep test hole and a percolation test shall also be required for all 19-13-B100a reviews for building conversions, changes in use, and areas of sewage disposal preservation when soils data for the property does not exist. Existing

soils data from the property or neighboring properties may be used for proposed accessory structures, building addition, garages or pools, otherwise 1 deep test hole and percolation test are required on the lot in question. WTW systems will require at least one deep test pit on the property or surrounding property. These are minimum requirements (further testing may be required) and a Certified CHD agent may require additional testing if the parcel is an area of special concern and/or other conditions warrant further investigation.

- A Certified CHD agent may require monitoring through the wet season by a PE and/or groundwater drainage installation prior to the determination of suitability/approval for parcels where unsuitable conditions relating to groundwater are observed. Monitoring and/or groundwater drainage may also be required where site conditions indicate maximum groundwater <36" below grade per Memo 05-01,.
- All lots shall be provided with an existing or proposed water supply that meets necessary testing, construction, and separation distances according to the Code. Lots not served by their own water supply (private well on the property and/or or public water service) should have easement language placed on the land records allowing for future use, maintenance, service, and access to an approved offsite water source.

Table 1. Minimum # of Deep Holes/Pits and Percolation Tests for Various Activities (Assured by a CHD Certified Agent)

	Deep Test Holes/Pits	Percolation Tests
New or Undeveloped Parcels/Lots	4 (2 in area of primary and 2 in reserve)	2 (1 in area of primary and 1 in reserve)
Leaching Repairs and Additions	2 (1 for severely limited lots)	1 (in area of leaching repair)
19-13-B100a-Building Conversions, Change in Use, Sewage Disposal Area Preservation	1	1
19-13-B100a-Accessory Structures, Building Additions, Garages & Pools	1 (can utilize data from surrounding lots)	1 (can utilize data from surrounding lots)
WTWDS	1 (can utilize data from surrounding lots)	None

Commission and Subdivision Lot Plan Review (Suitability): 19-13-B103e & 19-13-B100a

- All applicants of subdivision and/or multiple-lot plan reviews shall provide the following information to the CHD to receive a plan review and recommended suitability of the lots according to the Code.
 - The applicant shall submit a completed CHD application for service form with the necessary plan review fee to CHD (forms are available at all District offices or at www.chathamhealth.org).
 - A scaled plan (no greater than 1"-40' for lots and 1"-100' for overview) designed by a licensed surveyor and/or professional engineer shall be submitted that contains contact information for the designer, date of plan, revision dates and official stamp and signature by said individual (s).
 - All property lines (existing and proposed), watercourses, ledge/rock outcrops and cuts and/or fills shall be located and identified on the plan. In addition, all wetland delineation/soil types required by the municipality shall be provided on the plan.
 - The plan must provide existing contour/spot grade elevations. The maximum delineation of ground contours for CHD subdivision review shall be no greater than 2'.

- Locate and provide on the plan all site investigations (soils testing, percolation testing, groundwater monitoring, ledge profiles, and groundwater control drains) for the submitted lots. All testing within 10' of the proposed subsurface sewage disposal system and within 25' down slope (50' for large septic systems) of the proposed subsurface sewage disposal systems will be utilized for the review.
- The septic tanks, grease recovery units, pump chambers, curtain drains and leaching systems (primary and reserve) or sewer connection shall be located and described to meet size and separation distances of the Code.
- The MLSS calculation (a possible precursor to hydraulic analysis) is to be included and achieved for each lot with an average restrictive layer within the leaching area and 25' down slope (50' for large septic systems, per 19-13-B103d (c)) of the proposed leaching area $\leq 60''$ below naturally occurring grade. Any lot with an average restrictive layer $> 60''$ shall have a note that MLSS is not required by the Code.
- A building structure shall be located on each proposed building lot with the design flow (Gallons per day or bedrooms) and be of approximate scaled size.
- Indicate if footing drains/curtain drains will be provided and show their approximate location and discharge pipes.
- Show the location of the water supply (well and/or waterline), WTWDS (for lots served by with wells), and underground utilities of all lots and ensure that they meet all separations in the Code.
- All existing water supplies, septic systems, buildings, and drains (including neighboring properties) shall be located and identified on the plan. If such items are located further from the proposed buildings, water supplies, drains and/or septic systems than required by the Code, this shall be stated with a note on the plan.
- Applicant shall be aware that commission/subdivision review **IS NOT** sufficient for individual lot approval. Each lot must be reviewed by CHD at the time of building permit application (with final floor plans and septic design) to obtain lot approval and potentially issue septic, well and/or WTW permits.
- Statements of suitability will be forwarded to the applicant, Town/Commissions, plan designer, and owner.

Single Lot Plan Review (Approval): 19-13-B103e & 19-13-B104c (g)

- All new single lots shall be submitted for review to the CHD with two copies of the site plan (one for CHD and one for the installer), completed application for service with plan review fee and a copy of the proposed structural floorplans (1 year of water meter readings and/or structural plans and use of other similar buildings may also be required) to verify design flow, use, and footprint. If a project lead has not already been assigned, it will be done shortly after submission. New lots determined as areas of special concern, those meeting Memo 02-4 for "Septic Systems in Watersheds and on Small Lots" and repairs beyond the abilities of a licensed septic installer shall be designed by a PE and shall meet the requirements of the "CHD Engineered Single Lot Plan Review Checklist."
- All non-engineered septic plans shall meet the "CHD Non-Engineered Plan Review Checklist."
- All plans submitted to CHD will be reviewed in the order they are received (with preference to septic failures) and decisions of suitability/approval forwarded to the designer, town officials, and property owner/builder (if contact information is provided).
- Any lot with a proposed design flow $\geq 2,000$ gal/day, septic system on a lot separate from the building served, common septic system (two structures served by one septic), or well distance exception (repair) will require review by the Department of Public Health (DPH) Environmental Engineering (EE). Any lot with a proposed design flow of $> 7,500$ gal/day, utilize land treatment and disposal, a community system, repairs under the Department of Energy and Environmental Protection (CT DEEP) jurisdiction and/or utilize alternative technology will require review and approval by CT DEEP. CHD is required to conduct soils testing, preliminary

plan review/comments, issue permits, and inspections for CT DPH EE systems and witness soils testing, preliminary plan review, and inspections for CT DEEP systems. If review is required by these departments, an additional site plan shall be submitted to CHD along with any CHD fees for state review. CHD approvals and permits will occur only after CT DPH EE/CT DEEP issue their approvals.

Wells/Water Supplies: 19-13-B50, 19-13-B51a-51m, and 19-13-B101-B102

- A State of Connecticut well permit application (which meets the above Code references), CHD Application for Service and fee shall be completed by a CT licensed well driller and submitted to CHD for review and approval prior to any well construction (new, hydrofrack, deepening, casing extension, geothermal, irrigation, and/or abandonment). The new well (s) shall be field staked according to the submitted application and for CHD inspection.
- Any lot with an existing or new proposed well that will serve 25 or more persons (not necessarily the same people) for at least 60 days per year and/or 15 or more connections will require review and approval by the Department of Public Health Water Supplies Division (Phase IA or well location approval) prior to CHD issuing a well permit. CHD cannot issue site approval until Phase IA approval is received and no Certificate of Occupancy until DPH issues the Certificate of Public Conveyance and Necessity.
- No new potable well permit shall be issued for any parcel when any boundary of the parcel of property is within 200', measured along a street, alley, or easement, of any approved community water supply having at least 15 service connections or regularly serving at least 25 individuals (19-13-B51m).
 - A new potable well permit can be issued to replace an existing potable well having water quality and/or quantity issues, even when it is within 200' of a community water supply.
- A parcel owner may seek an exception to 19-13-B51m from the Department of Public Health Drinking Water Division (through CHD) and the applicant is to see a Certified CHD agent for further information.
- A property served by or having access within 200' of a community water system may submit application for a well dedicated only for irrigation, and a permit may be issued by the CHD, assuming the following are addressed and approved:
 - no physical interconnection between the non-potable irrigation piping system and potable plumbing,
 - a reduced pressure vacuum breaker device is installed on the system to protect the potable system in the event that an unauthorized connection is made,
 - identifying tags or signs (indicate the water is not potable) affixed to, or adjacent to, all exterior spigots served by the irrigation well, and
 - non-potable water lines are restricted from the building interior when a potable supply is installed.
- Any proposed geothermal well shall meet all requirements of the Connecticut Department of Public Health.
- Statements of approval/denial will be forwarded to the applicant and property owner.

Connecticut Public Health Code 19-13-B100a Review (B100a):

- All applicants for B100a review (building conversion, change in use, building addition, attached or detached garage, accessory structure, pools, or sewage disposal area of preservation) shall complete the current CHD B100a application, submit the necessary fee, provide a site plan (per the application), floor plans (not required for decks or pools) and recent (within last 5 years) CHD Septic Tank Cleaning Permit by a CHD Registered Cleaner (per CHD Wastewater Pumping and Permit to Discharge Regulation Section 9). Additional information may be required including water meter readings, design flow calculations, and/or deep test holes/percolation tests per the above "Site Investigations and Review".
- Statements of approval/denial will be forwarded to the applicant, Town, plan designer, and owner.

Septic Permits/Site Inspections: 19-13-103e (c, f-g), 19-13-B104c (g), & Current Technical Standards

- All new septic installations, additions, and repairs will require inspections and permits issued by the CHD, except for installation of tank risers and/or safety devices to meet current the Technical Standards, replacement of tank baffles, tank access covers, outlet filters, or distribution box covers.
- No septic permit will be issued until the proposed plan is reviewed and approved by CHD, and no septic construction shall occur until a septic permit is issued by CHD.
- Only a CT licensed septic installer (or property owner of their owner-occupied, single-family property) may obtain a permit to construct a subsurface sewage system (per chapter 393a of the General Statutes). Septic permit applications will be a state approved equivalent to Technical Standards Form #1 and available on the CHD website (www.chathamhealth.org) and in CHD offices.
- The septic installer is responsible for the following:
 1. Septic system staking and/or staking verification with CHD, scarification, filling, installation, and final grading
 2. Utilizing approved select fill, aggregate, septic products and providing related paperwork (sieves, etc.)
 3. Supervising the entire installation (including apprentices) and being onsite for all inspections
 4. Notifying the Project Lead 24 hours in advance of any site work/inspections
 5. Notifying the Project Lead and plan designer of any issues that limit the ability to install per the approved plan
- Inspections shall be conducted by a CHD Certified agent, who will provide an inspection slip of approval or denial to the installer, and document inspections with Technical Standards Form #3 (or state approved equivalent) to include:
 1. **Site Visits**-For new or repaired leaching systems to verify the approved plan against the site and may also include scarification, fill placement check, percolation of fill, and confirmatory testing
 2. **Final Inspection**-Verify the system was installed per the Code, the approved plan, and stakeout revisions
 3. Additional inspections may be required (based on complexity of the system and site)
- A septic installer apprentice shall notify the Project Lead of their intent for CHD verification of a septic system prior to construction and a licensed septic installer shall supervise the apprentices. Certified CHD agents may refuse to sign off on a project for the apprentice if the project was not completed in a satisfactory manner, the apprentice was not supervised by the licensed installer and/or notification was not made prior to system construction.

Investigation of Sewage Discharge and/or Failed Septic Systems: Connecticut Design Manual for Subsurface Sewage Disposal Systems for Households and Small Commercial Buildings and 19-13-B103c (f)

- The Code requires whenever it is brought to the attention of the local director of health that sewage is discharging on any property, they shall investigate and cause the abatement of this condition. The Connecticut Design Manual also places the primary technical responsibility and site investigation (but not system design) for repairs with CHD, unless a PE design is required.
- To assist with the investigation of premature septic failures/sewage discharge, Certified CHD agents should utilize the CHD Premature Septic Failures/Sewage Discharge Investigation Form. The purpose of the form is to gather information about the septic failure to identifying the cause (s) of failure and allow for abatement toward an adequately sized and functioning septic system.

Select Fill and Stone Aggregate: Technical Standards VIII A

- The Technical Standards states that the licensed installer is responsible for preparing the leaching system with acceptable select fill. A Certified CHD Agent may require the testing of any onsite select fill, aggregate, and/or ASTM C33 sand materials where there is a question as to the origin, specifications, and/or integrity of

said materials. Testing may include onsite percolation testing, third party testing and/or other approved verification methods.

- Any proprietary leaching system requirement for sand and/or aggregate that differs from the state requirements shall also be submitted to the CHD and meet the specified requirements of the proprietary leaching product designer, with the same testing frequency as select fill (within 60 days). These material may also be tested onsite, if there is a question as to the origin, specifications, and/or integrity of said materials.

Permit to Discharge and Certificate of Occupancy: 19-13-B101, 19-13-B103e (h), & 19-13-B104c (h)

- An as-built that meets the requirements of Memo 02-1 shall be submitted for all new and repaired septic systems (and WTWDS). Submission to occur within 30 days of the final to prevent delay in the issuance of a Permit to Discharge.
- CHD shall issue a Permit to Discharge (Form #4 or State approved equivalent) for all new and repaired septic systems upon approval of final septic inspection (s) and approval of the submitted as-built.
- The Permit to Discharge document will be provided to the property owner, Town, and DPH Environmental Engineering Division (for repair exceptions and large septic system).
- A Certificate of Occupancy Checklist or other Town approved methods (checklists, sign-off, etc.) shall be provided to the owner and town for any new habitable construction served by a septic system and/or well, upon receipt and approval of the following:
 1. As-built-according to Memo 02-1
 2. Wells-completion report, well cap/location verification, approved water test, DPH Certificate of Public Conveyance and Necessity (for new or newly created public water wells)
 - a. Water Treatment Wastewater Disposal System-If approved, installed, and as-built approved
 3. Permit to Discharge (not needed for lots served by municipal sewers)

We encourage all engineers, surveyors, builders, developers, septic installers and septic pumpers to download the current Connecticut Public Health Code Technical Standards, our Septic Memos, plan review requirements (engineered and non-engineered) and Application for Service at www.chathamhealth.org.

Respectfully,



Russell Melmed, MPH
Director of Health

Cc: CHD Staff and Board