

Quality Assurance Survey

Generic County
On-Site Wastewater Program
September 2003

DRAFT

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Program Improvement Team
On-Site Wastewater Section
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Introduction

The Division of Environmental Health's On-Site Wastewater Section's Program Improvement Team performed a quality assurance survey of the Generic County Health Department's On-Site Wastewater Program September 5 and 8-10, 2003. Andy Adams, Kae Arrington, and Tim Warren, Quality Assurance Program Specialists, and your local Regional Soil Specialist with the On-Site Wastewater Section conducted the evaluation. During the review, the program was profiled through direct observation and field evaluation, employee survey, and a review of office records.

Objective

The overall objective of this program review is to perform an accurate and impartial review of Generic County's On-Site Wastewater program. This is done by evaluating the performance of the staff, the procedures used to implement state rules and laws, the record keeping system, and the adequacy of the staff for the existing workload. This written summary outlines the findings of the On-Site Wastewater Section's Program Improvement Team's visit. Areas that need improvement are addressed at the end of each section. These improvement items are identified as either "required" or "recommended". Items marked as "required" means that either North Carolina General Statute or Rule requires the item. "Recommendations" at the end of each section are items not necessarily required by law or rule but which have shown by experience to be advantageous for a county to adopt.

The **requirements** will make up the Action Plan and are compiled in the Action Plan Timeline. The Action Plan Timeline is developed mutually between the On-Site Wastewater Section's Program Improvement Team & the Generic County Health Department.

Office Profile

The Environmental Health Section of the Generic County Health Department is located on A Scenic Road, Somewhereville, North Carolina. The office is open from 8:00 AM until 5:00 PM weekdays. The Environmental Health staff members have office hours from 8:00-9:30 AM and 4:00-5:00 PM weekdays. Telephone calls can be made to the Environmental Health office at any time throughout the day. Messages are forwarded to the staff upon return from the field. The staff can also be reached during the day by cell phone (if they happen to be in a location with a signal).

The On-Site Program of the Generic County Environmental Health Section is staffed as follows:

Jerome Greenwold – Environmental Health Supervisor

Tommy Fishlin - Environmental Health Specialist
George McGregor - Environmental Health Specialist
Jane Wimple - Environmental Health Specialist
Mauvette Smith – Administrative Support Secretary

The Environmental Health program has a printer, a copy machine, and a fax machine and shares a second printer with the rest of the Health Department. All staff members have PC's at their desks allowing access to the internet and email capability. Hard copies of files and permits are kept in file cabinets.

Policies and Procedures

Applications for improvement permits are made with the secretary and are accepted from the owner or other applicant if he or she attests that the owner has OK'd the applicant to act as agent for the owner. Often the secretary asks the questions, enters the application information into the database, prints the application, and then has the applicant sign it. Plats or site plans are sometimes submitted. The database assigns a permit number and the application packet is then placed in the "IN" box of the specialist responsible for the territory where the site is located. Some applications are picked up by other specialists to keep the workloads even.

The staff members perform evaluations in approximately the order received. Some grouping of applications is done to reduce travel time. Applicants rarely meet with the staff member at sites to be evaluated. After completing a site evaluation, the staff member signs and dates the application, and returns to the office to draw the permit or write the denial letter. The completed improvement permit/construction authorization is returned to the secretary so she can enter the permit information into the database, make copies of the permit and contact the owner. The owner picks up the permit or it is mailed or faxed to him. The improvement permit and construction authorization are usually issued at the same time. When a permit is denied, the applicant is notified in writing of the denial and his or her appeal rights.

Applications for repairs are taken in person at the office. The computer generates a repair application with a homeowner interview section which is sometimes filled out. The repair requests are handled in the same manner as applications for improvement permits. Complaints are accepted verbally or in writing and may be anonymous. They are logged in and assigned a number by the secretary. There is no procedure for tracking the resolution of complaints and successful repair of failing septic systems. Follow-up is left up to each individual specialist.

Improvement permits and construction authorizations for new, expansion, and repair systems are filed together alphabetically by applicant. Applications and site evaluation notes are filed in individual file folders numerically by the permit number. After a system is installed and the operation permit issued, the IP/CA and OP are put in the file with the

application and site evaluation notes. Water samples, well permits, and existing system inspections are also filed by permit number in the same set of files as the application/site evaluation notes and the completed IP/CA/OP packets. Permits from the mid 1960's until the present are available in hard copy. All permits from 1988 to the present are available in the on-site database and can be searched by road number, name on permit (applicant) and permit number.

Final inspections must be called in by 9:30 AM of the day that the inspection is needed. Late calls are accepted on a case by case basis if time allows. After a system installation is inspected and approved, the staff draws an as-built sketch, signs the operation permit, and gives a copy to the installer or owner on-site. Otherwise, the operation permit can be picked up later at the health department.

Requirements:

1. **An application for an improvement permit or construction authorization may only be signed by a property owner or the owner's legal representative.** Written verification or a written statement that the owner has designated the applicant as his or her legal representative should be required.
2. **All applications shall include a plat or site plan** at a scale of sufficient size to be legible which must show the existing and proposed property lines with dimensions, the location of the proposed facility and appurtenances, all other proposed structures, and the proposed site for the septic system showing setbacks to property lines or other fixed reference points, and the location of the water supply and any surface waters.

Recommendation:

Establish a formal procedure for tracking the resolution of complaints and failures. This may be done through the use of log books, spreadsheets, etc. Sample formats for logbooks are included in the Appendix.

Personnel

The On-Site Program in the Environmental Health Section in Generic County consists of one environmental health supervisor and three environmental health specialists. In addition to enforcement of the on-site wastewater rules, they are also charged with overseeing recreational water quality at State Run Campground, and unofficially overseeing the intensive livestock operations in the county.

The on-site program workload was evaluated using time study data collected from North Carolina counties. This manpower study indicates that the current staff is adequate to perform the existing workload while providing adequate documentation and correct and consistent interpretation and enforcement of the state statutes and rules. Generic County is expected to show a 21% population growth rate from 2000 through 2010 according the NC Office of State Budget and Management. For future planning, if the current trend

continues additional staff will be needed to allow for better coverage of the county's environmental health needs and to help reduce the chance of legally litigious mistakes being made by the staff because they were in a hurry and committed a careless error.

Review of Forms

The application for improvement permit and construction authorization, the improvement permit, the construction authorization, the operation permit, the site evaluation form, and the denial letter used in Generic County were reviewed for compliance with rules and statutes. A site evaluation form is being used to document all site evaluations but the form used does not allow for the level of detail required to be documented.

Requirements:

The following changes must be incorporated into the current Generic County forms:

1. Application for Improvement Permit and Construction Authorization

- ?? A site plan that shows the existing and proposed property lines with dimensions, the location of the proposed facility and appurtenances, other proposed structures, and the site for the septic system showing setbacks to property lines or other fixed reference points, and the location of the water supply and surface waters must be submitted by the applicant as a part of the application for an Improvement Permit and construction authorization.
- ?? Statements that the applicant shall notify the health department of any jurisdictional wetlands, of any wastewater generated other than domestic sewage and whether the site is subject to approval by any other public agency must be on the application.
- ?? The time period the permit is valid must be stated on the application.
- ?? The proposed system type as specified by the owner or the owner's legal representative must be stated on the application for construction authorization.
- ?? The Application may only be signed by the current property owner or the owner's legal representative.
- ?? The owner's phone number must be stated on the application.

2. Denial Letter

The denial letter must provide the applicant with detailed information about the soil and site conditions responsible for the denial. Either include the site/soil evaluation form or provide a detailed written report.

See Appendix for sample application for improvement permit/construction authorization.

Documentation and Field Review

An office and field review of work generated by the three staff members working in the on-site wastewater program at the time of this review was performed to assess their knowledge and implementation of the Laws and Rules for Sewage Treatment and Disposal Systems. We reviewed 32 recently issued permits in the office for completeness of documentation and detail. Fifteen of these 32 permits were selected for review in the field. Additionally, the performance of each staff member was assessed as they inspected the installation of systems. The purpose of this review is to determine that all staff members are providing correct and consistent interpretations and enforcement of the state sewage rules with adequate documentation of their findings.

Field Review - Random Site Visits & Permit Documentation:

As discussed above, a number of improvement permit/construction authorizations issued by each staff member were randomly pulled. Fifteen of these previously permitted sites were reviewed in the field with the staff members that issued the permits. The review team members played the role of property owners/contractors when reviewing the work. The review team member would determine if the site for the septic system could be located using only the documentation contained on the permit. Once found, auger borings were made in the system areas to compare with the environmental health specialist's soil description. Finally, a determination was made as to whether or not the system permitted matched the site conditions.

Generic County staff members are competent and knowledgeable in conducting site evaluations. They relate well to the public they serve. They adjust the loading rates to size their systems to match the varying site conditions found throughout the county. Twelve of the fifteen system designs were consistent with soil and site conditions on the field site visited and all were located in the approved areas. Assigned LTAR's were found to be slightly high for the other three sites. Consistency among the staff in drawing permits was good. All produced clearly drawn permits, defining initial system layout, repair area, and types of initial systems.

More time must be spent evaluating sites, documenting soil and site evaluations and on the site and system layout drawing provided in the improvement permit and construction authorization. Setbacks from the initial system to property lines or other fixed reference points must be shown to with the dimensions documented. Design flow, trench width, and repair system type must be stated and either the location of proposed or existing wells or the setback to the proposed well from the system and repair area must be shown. This will make the permits clearer and easier to understand. Some of these items will be easily corrected once an acceptable site plan or plat is being obtained from the permit applicants as noted above.

Requirements:

The following changes must be instituted into permitting procedures:

1. All applications for IP's must be completed and must include a site plan and/or a plat showing:

- ?? the location of the proposed facility and appurtenances,
- ?? any other proposed structures
- ?? the site for the wastewater system, and
- ?? the location of water supplies and surface water.

For IP's valid for 5 years, the site plan must show existing and proposed property lines with dimensions. For IP's valid indefinitely, a plat, surveyed to a scale of 1" equals no more than 60', must include the aforementioned items. For a permit valid indefinitely on a lot in a recorded subdivision approved by the local planning authority, a plat may be accompanied by a site plan that is drawn to scale showing those items noted above. Site evaluations shall not be performed until a complete application is submitted. See Appendix for example site plan worksheet.

2. Detailed descriptions of soil profiles must be documented for every site evaluated. This description should include a designation of topography and landscape position, slope, texture, structure, consistence and mineralogy, restrictive horizons, soil wetness, available space, and soil depth. Sufficient available space should be recorded on the soil evaluation sheet.
3. Sufficient borings must be made in both the system and the repair area for each site to confirm that the initial system and replacement system designs are supported by the soil and site conditions throughout the designated initial system and repair areas. Locations of borings must be documented.
4. Setbacks from the system to fixed reference points and to the proposed or existing well area must be shown on the permit sketch.
5. The design flow, trench width, and the proposed repair system type must be stated on the permit.
6. An application must be submitted for every site. Only one system shall be permitted on each permit.
7. When designing systems, the long term acceptance rate shall be based on the most hydraulically limiting naturally occurring soil horizon within three feet of the grounds surface or to a depth of one foot below trench bottom, whichever is deeper. The on-site staff must work to achieve better consistency and accuracy in recognizing and setting LTAR's.

8. When reissuing permits, old soil data should be confirmed and the re-evaluation documented.
9. An investigation using pits must be conducted on sites where the system trench bottom depth will not maintain the required 12' separation from saprolite. These pits must be deep enough to evaluate a minimum of 24" below the proposed trench bottom.
10. The slope of the site must be checked and then taken into account when determining maximum trench bottom depth. Using a 36" wide trench requires an additional 3.6" of soil depth at the upper side of the trench for every 10% increment of slope. For example, a site with a 25% slope would require a minimum PS soil depth of 39" in order to install a 36" wide trench 18" deep on the lower side wall.

File Review - Repair Permitting Procedures:

Generic County places a high priority on quick response to requests for assistance with failing systems. Nine repair permit packages were reviewed. In evaluating the nine repair situations, all permits and attached notes were reviewed to determine whether or not a systematic approach to the evaluation of septic system failure situations and development of repair options was followed.

Of the nine repair permits, six were issued for situations where there was no evidence or indication of a failure. Four of these six were for expansions to an existing facility, one was so a system could be moved to allow a new porch to be built over part of the existing system, and one was to serve a new house being built on property where the original house was being torn down. In the three repair permit packages for sites that actually had failing septic systems, no documentation of the evaluation of repair situations or site & soil evaluation notes were found. Notices of violation are not routinely issued when homeowners voluntarily call for repair permits.

The following requirements and recommendations are made for improving the repair process:

Requirements:

1. Additions to existing structures (such as adding decks, garages, sunrooms, etc.) that do not affect the wastewater flow rate or characteristics but that would intrude into the horizontal setbacks for the existing wastewater system or that would damage the system if constructed are to be denied UNLESS the system can be moved to a soil area that meets the "Laws and Rules for Sewage Treatment and Disposal" in effect at the time of the 'new' permit issuance by the health department. They are not to be treated as repairs. Best Professional Judgment does not apply.

2. Expansions to existing structures that affect the wastewater flow and/or characteristics (such as adding new bedrooms or “relocating” existing bedrooms) are to be treated as a new system. They are not to be treated as repairs. Best Professional Judgment does not apply. In three of the nine randomly chosen “repairs” noted above, the owners requested permission to add bedrooms onto existing houses and convert existing bedrooms into “personal office space”. These “office spaces” are considered to be “... any other room or addition that can reasonably be expected to function as a bedroom **shall** be considered a bedroom for design purposes” (Rule .1949(a), emphasis added). In determining flow for additions or expansions, rooms formerly used as bedrooms that will remain part of the structure after the remodeling must continue to be counted as bedrooms as will the “new” bedrooms. The design flow would equal 120 gpd for each of the original (existing) bedrooms plus 120 gpd for each of the proposed new bedrooms. Furthermore, each occupant above the rate of 2/BR adds an additional 60 gpd. Since there is an increase in design sewage flow *and* the bedroom additions would be built over the existing septic systems, all of the permitting must be considered as NEW construction and all permitting process and procedure must comply with the current rules.
3. A site and soil evaluation must be performed and documented for every failure analysis and issuance of a repair permit.
4. A program for tracking the resolution of failing septic system must be developed and implemented as noted above. A computerized program is preferable.

Recommendations:

1. A homeowner interview form should be utilized as part of all applications for repair permits. The applicant should fill out this form when submitting the application for repair permit.
2. The environmental health specialists should document all steps in their evaluation of repair situations. Use of a standard checklist is recommended to keep track of what is determined or discovered. The checklist should contain at least the following information:
 - ☒☒ Type of system being repaired
 - ☒☒ Location of the malfunction (surface vs. backup in house)
 - ☒☒ Frequency and duration of the malfunction
 - ☒☒ Water usage amounts and habits
 - ☒☒ Evaluate site and soil conditions
 - ☒☒ Evaluate distribution system and Drainfield
 - ☒☒ Determine the likely cause of failure
 - ☒☒ Develop repair options
 - ☒☒ Issue permit to repair
 - ☒☒ Follow up

Sample checklists may be found in the Appendix.

Field Review - System Installation Inspections:

During the program evaluation, the field staff's performance while conducting inspections of system installations was assessed. Each Environmental Health Specialist was observed to perform final inspections. A total of nine system inspections were evaluated.

Thirty-five items were reviewed for compliance during the system installation review. All of these items are "required" by General Statute or Rule. Generic County was compliant in all of the items evaluated. The staff did a very thorough job of performing the final installation inspections. A detailed and orderly procedure was followed on all of the finals and an inspection checklist was used. The staff used good judgment and exercised discretion wisely during all of the inspection visits. Inspection items found to be incorrect were explained to the contractor. An as-built drawing of each system installed was made. The results of the system inspections evaluated are summarized in the table below.

Equipment Needs

Observations of the staff members in the field, coupled with conversations with them indicate the need for the following equipment in order to properly or more thoroughly perform their job duties:

- 1) **Rebound hammer for testing concrete strength on system installation inspections.**
- 2) **Metal detector for confirming that rebar is present in tanks during tank yard inspections and when needed on system installation inspections.**
- 3) **A laser level to allow one person layouts of systems. The current manual levels require two staff members to be on the site at the time of the layout.**
- 4) **2 additional auger buckets to replace bent and twisted augers. The damaged augers do not allow for easy removal of the auger from the hole and place undue stress on the back when removing them.**
- 5) **3 augers were in need of replacement bits. These can be ordered from the manufacturer and installed locally, or the auger head can be mailed to them for attachment of the new bits.**
- 6) **Two staff members need new Munsell color books. Their current books are either damaged or are missing essential pages.**

System Monitoring and Maintenance Program

Generic County has 16 systems requiring monitoring and management as required by Rule .1961. Their operator records and required inspections by the health department were up to date.

Septic Tank Manufacturer's Yard Inspections

Generic County has one tank manufacturer located in the county. Their Environmental Health Section has an inspection program conducted in coordination with Bute County. They recently conducted tank yard inspections of all manufacturers that sell tanks in the county. In the past they have accompanied an engineer or a regional soil specialist from the State On-Site Wastewater Section to inspect the tank yard.

Program Summary

The Generic County On-Site Wastewater Program is a well-run program with staff members who are knowledgeable environmental health specialists. They are pleasant to work with and exhibit professional courtesy to the public, contractors, and each other. They maintain positive attitudes, exhibiting their care about their profession and the people they serve. Levels of experience in on-site wastewater vary between the staff, but they work closely together among themselves to see that questions are correctly answered in a consistent way. They are very supportive of each other and readily interact with one another in an extremely positive manner. They effectively manage their time, planning daily stops to maximize resources. This program is sound and the staff produces good quality work, but modifications to the permitting system need to be made. With a few changes to forms and procedures as discussed in this report the program can become even better. The staff members are receptive to the suggestions offered by the On-Site Wastewater Section's Program Improvement Team and are willing to act on recommendation. Their dedication to their jobs and their accomplishments in bringing about a good quality on-site program are admirable.

Action Plan Timeline

The following page contains a timeline for implementation of items required to be implemented in Generic County's On-Site Program.

The On-Site Wastewater Section's Quality Assurance Program will follow up with the items mentioned in the following action plan by visiting Generic County in the first half of 2004. During these visits, the team will examine the changes made. The team will also pull several site evaluations at random to visit to examine them for implementation of the changes recommended.

As always, the Quality Assurance Program will render any assistance needed by the staff of the Generic County Onsite program in carrying out these recommendations and plan of action.

Kae Henderson Arrington, M.S., R.S.
Program Improvement Team
On-Site Wastewater Section

Report received by:

Jerome Greenwold
Environmental Health Supervisor
Generic County Health Department

date

Generic County Action Plan Timeline

**Date for
Program Improvement Team
Follow Up:**

Policies & Procedures

1. All applications shall include appropriate plat or site plan.	12/15/2003	Summer 2004
2. Every application must be signed by the owner or the owner's legal representative.	12/15/2003	Summer 2004

Forms

1. Application for IP & CA		
a. A suitable site plan must be submitted by the applicant as a part of every application for an improvement permit.	12/15/2003	Summer 2004
b. Statements that the applicant shall notify the health department of the presence of previously identified jurisdictional wetlands, of any wastewater generated other than domestic sewage, and whether the site is subject to approval by any other public	12/15/2003	Summer 2003
c. The time period the permit is valid must be stated on the application for an improvement permit. Include the requirements for a permit that is valid for 5 years as well as for a permit that is valid without expiration.	12/15/2003	Summer 2004
d. The owner's phone number must be stated on the application.	12/15/2003	Summer 2004
e. The application may only be signed by the current property owner or the owner's legal representative.	12/15/2003	
f. The proposed system type as specified by the owner or the owner's legal representative must be stated on the application for construction authorization.	12/15/2003	Summer 2004
3. Denial Letter		
A written report regarding soil and site conditions responsible for the denial must be included with the denial letter.	immediately	Summer 2004

Permit Documentation & Field Work

1. Detailed descriptions of soil profiles to a depth of 48" or an unsuitable condition must be documented for every site evaluated, both new and repair. All soil profile locations must be shown. Documentation must support the system designed.	immediately	Summer 2004
2. Sufficient borings must be made in both the system and the repair area for each site to confirm that the initial system and repair system designs match the soil and site conditions throughout the designated areas.	immediately	Summer 2004
3. An application must be submitted for every site. Only one system shall be permitted on each permit.	immediately	Summer 2004
4. Setbacks from fixed reference points to the facility and the proposed or existing well area must be shown on the permit sketch.	immediately	Summer 2004

<u>Generic County Action Plan Timeline</u>		Date for
continued	Date for	Program Improvement Team
	completion:	Follow Up:
5. Design flow, trench width, and the proposed repair system type must be stated on the permit.	immediately	Summer 2004
6. The on-site staff must work to achieve better consistency and accuracy in recognizing and setting LTAR's	immediately	Summer 2004
7. A site and soil evaluation must be performed and documented for every failure analysis and issuance of a repair permit.	immediately	Summer 2004
8. The slope of the site must be checked and then taken into account when determining maximum trench bottom depth.	immediately	Summer 2004
9. An investigation using pits must be conducted on sites where the system trench bottom depth will not maintain the required 12' separation from saprolite. These pits must be deep enough to evaluate a minimum of 24" below the proposed trench bottom.	immediately	Summer 2004
10. When reissuing permits, old soil data should be confirmed and the re-evaluation documented.	immediately	Summer 2004
<u>Repair Permitting Procedures</u>		
1. Additions to existing structures (such as adding decks, garages, sunrooms, etc.) that do not affect the wastewater flow rate or characteristics but that would intrude into the horizontal setbacks for the existing wastewater system or that would damage the system if constructed are to be denied UNLESS the system can be moved to a soil area that meets the "Laws and Rules for Sewage Treatment and Disposal" in effect at the time of the 'new' permit issuance by the health department. They are not to be treated as repairs. Best Professional Judgment does not apply.	immediately	Summer 2004
2. Rule .1949(a) is used to determine the design wastewater flow for any residence. Per this rule "each bedroom and <u>any other room or addition that can reasonably be expected to function as a bedroom shall</u> be considered a bedroom for design purposes" (emphasis added). In determining flow for additions or expansions, rooms formerly used as bedrooms that remain in the structure after remodeling must be counted as bedrooms along with rooms proposed to be used as bedrooms when determining design flow.	immediately	Summer 2004
3. A site and soil evaluation must be performed and documented for every failure analysis and issuance of a repair permit.	immediately	Summer 2004
4. A program for tracking the resolution of failing septic system must be developed and implemented as noted above. A computerized program is preferable.	immediately	Summer 2004

APPENDIX

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Generic County Forms Review

Application for an Improvement Permit

Rule or Law		
.1937(d)	Owners name	y
.1937(d)	Owners address	y
.1937(d)	Owners phone number	n
.1937(d)	Location of property	y
.1937(d)	Plat or site plan of property	n
.1937(d)	Description of existing and /or proposed facility or structure	y
G.S. 130A-335(f)	Time period permit is valid.	n
.1937(d)	Type of water supply	y
.1937(d)	Signature of owner or owner's legal representative	y
.1937(d)	Statement that applicant shall notify health department of:	
	1. Wetlands	n
	2. Any wastewater generated other than domestic sewage	n
	3. The site is subject to approval by other public agency	n
G.S. 130A-335(f)	Terms of revocation	y

Application for CA

.1937(e)	All of information for IP Application, plus:	
.1937(e)	Locations of proposed facility, other proposed structures, and the site for the system showing setbacks to PL or other fixed reference points	n
.1937(e)	Proposed system as specified by owner or legal representative that meets the conditions of the IP	n

Site Evaluation Form

.1937(m)	Is a site evaluation form used to document field work?	y
.1937(m)	Signed/Dated?	y

Improvement Permit

G.S. 130A-336(a)	Plat or site plan	y
G.S. 130A-336(a)	Description of proposed facility	y
G.S. 130A-336(a)	Proposed wastewater system location	y
G.S. 130A-336(a)	Design wastewater flow and characteristics (# B.R.'S OR GPD)	y
G.S. 130A-336(a)	Conditions for any site modification	y
G.S. 130A-335(f)	Statement of revocation	y
.1937(f)	Issued by	y
.1937(f)	Date issued	y
G.S. 130A-336(a)	Permit conditions	y
G.S. 130A-335(f)	Time period permit is valid.	y

Construction Authorization

.1937(g)	Conditions regarding system type	y
.1937(g)	System layout	y
.1937(g)	Location and installation requirements	y

Operation Permit

.1937(i)	Type of system	y
.1937(i)	Conditions for system performance, operation, maintenance, monitoring and reporting.	y

Permit Denial Letter

G.S. 130A-335(g)	Is one written?	y
G.S. 130A-335(g)	Why denied?	y
.1937(m)	Modifications or alternatives given?	y
G.S. 130A-335(g)	Formal and Informal Appeal process outlined?	y
.1937(m)	Written report re: soil and site conditions included?	n

Generic County Documentation & Field Review Summary

Rule or Law	Permit Application	Information Contained?		Q	% compliance
		N	Y		
.1937(d)	Is the Application complete	0	32	0	100%
.1937(d)	Is there a Site plan/Plat with application	0	32	0	100%
.1937(d)	Is the House, Drive, etc. shown	16	16	0	50%

Site Evaluation Information

.1939 (a)(1)	Topography and Landscape Position Recorded?	32	0	0	0%
.1940 (a-g)	Slope % Recorded?	32	0	0	0%
.1939 (a)(2)	Texture Class Recorded?	0	32	0	100%
.1939 (a)(2)	Structure type Recorded?	2	30	0	94%
.1939 (a)(2)	Consistence Recorded?	5	25	0	83%
.1939 (a)(2)	Mineralogy Recorded?	16	15	0	48%
.1939 (a)(3)	Soil Wetness Condition Recorded When Encountered?	0	32	0	100%
.1939 (a)(4)	Soil Depth to Rock or Parent Material Recorded When Encountered?	0	32	0	100%
.1939 (a)(5)	Depth to Restrictive Horizons Recorded When Encountered?	0	32	0	100%
.1939 (a)(6)	Sufficient Available Space Recorded?	10	22	0	69%
.1937(m)	Are the Profile Locations Shown?	19	2	0	10%
.1939(a) & .1945(b)	Are the S/PS Profiles in system & in repair area?	5	9	18	28%
	Number of auger borings made:	1	5		2
		(LOW)	(HIGH)		(AVERAGE)
	Were sufficient auger borings made?	7	10	15	31%
.1939(d), .1955, .1956, .1957	LTAR	0.300	0.800		0.569
		(LOW)	(HIGH)		(AVERAGE)

IP/CA

G.S. 130A-336(a) & .1937(g)	Proposed System Type stated-Initial	1	30	0	97%
.1945(b)	Proposed System Type stated-Repair	28	3	0	10%
G.S. 130A-336(a)(3)	System location identifiable by setbacks - Initial	7	24	0	77%
.1937(g) & .1945(b)	System components shown - Initial	0	31	0	100%
.1945(b)	Repair area shown	0	31	0	100%

.1937 (f)(g)	Is the System design consistent with soil/site conditions?	3	12	0	80%
.1937 (f)(g)	Is the System located in the approved area	0	9	6	60%
G.S. 130A-336(a)	Is the Design flow (GPD) indicated?	31	0	0	0%
G.S. 130A-336(a)	Number of Bedrooms, employees, seats, etc. indicated?	1	30	0	97%
.1937(g)	Trench depth indicated?	0	31	0	100%
.1937(g)	Trench width indicated?	6	23	0	79%
.1937(g)	Trench length indicated?	0	31	0	100%
G.S. 130A-336(a)(1)	Proposed/existing well shown?	8	1	0	11%
G.S. 130A-336(a)(1)	Property line lengths shown?	2	29	0	94%
G.S. 130A-336(a)	Facility/appurtenance setbacks shown from fixed points?	4	26	0	87%

OP

.1937(i)	System type as described in table V(a) of rule .1961	0	9	0	100%
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GENERIC COUNTY

Review of Final Inspections for Issuance of Operation Permits

Rule or Law	Location & Separation Distances	Information Contained?			% compliance
		N	Y	Q	
Rule .1950	Confirmed setback to Wells	0	0	0	#DIV/0!
Rule .1950	Confirmed setback to Property Lines	0	9	0	100%
Rule .1950	Confirmed setback to Foundation and Drain?	0	9	0	100%
Rule .1950	Confirmed other applicable .1950 Setback Requirements	0	9	0	100%

Tanks

Rule .1954	Visually inspect the exterior	0	9	0	100%
Rule .1954	Visually inspect the interior	1	8	0	89%
Rule .1954	Inspect outlet, baffle & filter	0	9	0	100%
.1954 (a) (15)	Inspect inlet	0	9	0	100%
.1954 (a) (15)	Verify Presence of Date of manufacture	0	9	0	100%
.1954 (a) (15)	Verify Liquid capacity of tank	0	9	0	100%

Pump Tank Inspections:

.1954 (b) (4)	Tank Water tested?	0	1	0	NA
.1952 (a)	Verified proper setting of Float controls	0	1	0	NA
.1952 (a)	Verified use of NEMA 4X Box	0	1	0	NA
.1952 (a)	Verified that the Alarm is audible & visible	0	1	0	NA
.1952 [c] (9)	Verified that the pump & alarm are on separate circuits	0	1	0	NA

Supply Line from tank to drainfield or distribution device

.1955(e)	Verified required fall?	0	9	0	100%
.1955(e)	Verified proper Material?	0	9	0	100%
.1955(a)	Verified distance from tank to drainfield or distribution device	0	9	0	100%

Distribution Device to Drainfield

.1955(j)	Verified device will perform as designed	0	9	0	100%
.1955(e)	Verified Required fall to nitrification field	0	9	0	100%
.1955(j)	Verified device is water tight	0	9	0	100%
.1955(j)	Checked for proper 2' minimum distance to trench	0	9	0	100%
.1955(j)	Checked that device is on a solid foundation	0	9	0	100%

Nitrification Field

.1955(g) and (m)	Verified Proper Trench depth	0	9	0	100%
.1955(g)	Verified Proper Trench width	0	9	0	100%
.1955[c]	Verified Proper Distance between trenches	0	9	0	100%
.1955[c]	Length of trenches measured	0	9	0	100%
.1955 (h)	Aggregate depth measured	0	9	0	100%
. 1969	Innovative systems installed per approval	0	9	0	100%
.1955 (g)	Verified Proper Trench grades	0	9	0	100%

Step Downs

.1955 (l)	Verified 2' undisturbed earth	0	2	0	NA
.1955 (l)	Verified Proper Rise over stepdowns	0	2	0	NA
.1955 (l)	Verified Solid pipe used over stepdowns	0	2	0	NA

This should be the front page for the need more information on site plan letter

SITE PLAN WORKSHEET

Place a mark (X) beside each item that has been indicated on your site plan, incomplete site plans will be returned to you for completion. Remember: **Your property will not be scheduled for an evaluation until we have received a completed application, site plan, and all proposed items are marked on the property.**

- _____ - The dimensions of the property.
- _____ - The proposed location of all structures (e.g.: building, wells, water lines, outbuildings, pools). Show the distances from the road and the side property lines to all structures. Be sure and give the dimensions for all the structures. If you are unsure as to the structure size, please show the dimensions of the MAXIMUM area of the lot that you anticipate the structure will cover.
- _____ - The site you would prefer your septic system to go in.
- _____ - The preferred driveway location.
- _____ - The proposed well location.
- _____ - A north arrow or other sufficient directional indicator.
- N/A _____ - Any proposed structures or improvements to the property such as garages, workshops, pools, etc. **If there are none, circle "N/A"**
- N/A _____ - The location of any existing septic tank systems and wells on your property and on the adjoining property within 100' of your property line. **If there are none, circle "N/A"**.
- N/A _____ - The location of any easements or rights of way on the property. **If there are none, circle "N/A"**.
- N/A _____ - The location of any designated wetlands on the property. **If there are none, circle "N/A"**

USE THIS SPACE TO DRAW YOUR SITE PLAN:

RE: Tax Map Number: _____

Dear _____:

The item(s) marked below were either not included in your application or were not identified on the site plan you submitted with your application to evaluate your property for a wastewater system. Please complete these items and return your application and site plan to our office so that your application can be processed:

- _____ - Please complete the highlighted items on the enclosed application.
- _____ - The dimensions of the property.
- _____ - The proposed location of all structures (e.g.: facility, wells, water lines, outbuildings, pools). Show distances from the road and the side property line to all structures. Be sure and give dimensions for all structures. If you are unsure as to the structure size, please show the dimensions of the **MAXIMUM** area of the lot that you anticipate the structure will cover.
- _____ - The site you would prefer your septic system to go in.
- _____ - The preferred driveway location.
- _____ - The proposed well location.
- _____ - A north arrow or other sufficient directional indicator.
- _____ - Any proposed structures or improvements to the property such as garages, workshops, pools, etc.
- _____ - The location of any existing septic tank systems and wells on your property and on the adjoining property within 100' of your property line.
- _____ - The location of any easements or rights of way on the property.
- _____ - The location of any designated wetlands on the property.

If you have any questions, please feel free to contact me at 123-1234 between 8:00 and 9:30 a.m.

Sincerely,

Environmental Health Specialist

Repair Evaluation Checklist

Application #: _____
Evaluated by: _____

Applicant: _____
Date Evaluated: _____

SITE SKETCH

1. Review "Homeowner Interview Form for Failing Septic Systems": _____

2. Type of system being repaired: _____

3. Location of the malfunction (surface vs. backup in house)(show in diagram above): _____

4. Frequency and duration of the malfunction: _____

5. Water usage amounts and habits: _____

6. Evaluate site and soil conditions (show profiles on soil/site evaluation form): _____

7. Evaluate distribution system and drainfield: _____

8. Check for any possible short circuits, such as underground utilities: _____

9. Determine likely cause of failure: _____

10. Develop repair options:

A. _____

B. _____

C. _____

D. _____

E. _____

11. Issue permit for repair (show date permit issued): _____

12. Follow up on repair (show date(s) and any pertinent information of follow up): _____

Failure evaluation

Existing system

system type _____

of lines _____

depth of lines _____

line lengths _____

Drainfield

Are trenches full of effluent _____

Broken or crushed pipes? _____

Any blocked lines? _____

Septic tank / Pump tank

Filter or block tee? _____

Unlevel tank? _____

Amount of freeboard _____

Excess solids (> ? liquid depth)? _____

Distribution Box

Cracked or broken? _____

Unlevel? _____

Solids in box? _____

Is effluent level above every outlet

invert in box? _____

Type of failure

_____ a discharge to surface of ground surface waters, or directly into groundwater

_____ back up into facility, building drains, collection system, or freeboard of the tank

_____ a free liquid surface within 3" of finished grade over nitrification trench for 2 or more visits made not less than 24 hours apart

Frequency/timing of malfunction

Continuously ___ yes ___ no

Periodically: _____ weekend
_____ Seasonal
_____ Rainfall
_____ Guests/visitors
_____ High water usage events

Notes: