# APPENDIX A

# FORMS

GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT

SITE EVALUATION
FOR
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

TYPE OF EVALUATION:

SOIL FACTORS _____

DATE OBSERVATIONS MADE: _____

LEGAL DESCRIPTION: _____ 1/4, _____ 1/4, SECTION ____ TOWNSHIP ____ RANGE ____

SUBDIVISION _____ LOT # ____

LOCATION _____

OWNER/CONTRACTOR NAME _____

MAILING ADDRESS _____

TYPE OF OCCUPANCY: RESIDENCE ____ NO. BEDROOMS: ____

COMMERCIAL ____ TYPE _____ NO. PERSONS SERVED ___

SOIL SURVEY MAP NUMBER: _____

NAME(S) OF SOIL MAPPING UNITS: _____

_____

ANTICIPATED GEOLOGIC FORMATION: _____

SITE PLAN: (Attach copy)

ABSORPTION TRENCH AREA RECOMMENDATIONS:

LOADING RATE: _____ GALLONS/DAY/SQ. FT.

TOTAL ABSORPTION TRENCH AREA REQUIRED: _____ SQUARE FEET
(for standard system; if Low Pressure Pipe or other alternative system, attach required forms or design calculations)

SEE BACK OF FORM for General Recommendations, and Recommendations for meeting Provisional Requirements. All required provisions must be met for absorption trench area recommendations to apply.

I, the undersigned, hereby certify that the site evaluation was made in accordance with the requirements of the Greene County Design Standards for On-site Wastewater Treatment Systems, and that the data recorded are correct to the best of my knowledge.

NAME: _____ PHONE: _____

ADDRESS: _____

Form EV01 (1/2000) SIGNATURE _____

NOTE: All factors with a US or PS rating have a potential requirement even if a specific recommendation is not listed here.

## Recommendations for Meeting Provisional Requirements

List All Factors Rated US or PS

_____ Trenches should not be dug when soil is wet to prevent sealing of trench surfaces.

_____ Recommended trench depth:_____ inches.

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

#1 -- Lower clayey horizons will have significantly slower permeability and poorer aeration under absorption field conditions, therefore the trenches should be kept as shallow as possible due to the _____ horizon at _____ inches.

#2 -- An interceptor drain is needed upslope from the soil absorption system to remove excess water moving laterally through the soil during wet periods, Interceptor drain should be at a minimum depth of _____ inches for a (____ curtain drain), (____ vertical drain).

#3 -- Surface water flow (from drainageway____; from upslope _____) needs to be diverted away from absorption field.

#4 -- Shallow placement of trenches (12-inch depth) is needed.

#5 -- Due to the highly permeable horizons and/or the slope, it is preferable not to utilize serial or drop box systems.

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GENERAL RECOMMENDATIONS

1 -- The absorption field should be placed over as wide an area of the landscape as possible.

2 -- Drainage water from house guttering and/or subsurface foundation drain should be diverted away from absorption field.

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*NOTE: Requirements and recommendations provided herein represent the most reasonable and practical means available to overcome site limitations which have been identified. They do not give any guarantee that the absorption field system will function properly.

GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT

SOIL EVALUATION - SOIL FACTORS DATE: _____

LOCATION: _____ OWNER/CONTRACTOR NAME _____

SOIL PIT NUMBER: _____ DEPTH OF PIT: _____ INCHES

SOIL TYPE: _____ DEVIATIONS: _____

| FACTOR | SUITABILITY CLASSIFICATION | FACTOR | SUITABILITY CLASSIFICATION |
|---|---|---|---|
| I. TOPOGRAPHY AND LANDSCAPE POSITION<br>A. Slope: _____ %<br>B. Slope type:<br>Uniform _____<br>Complex _____<br>C. Landscape position:<br>_____ | | II. SOIL CHARACTERISTICS<br>A. Soil Texture Group<br>Above _____ inches ____<br>Below _____ inches ____<br>Depth to clayey horizon (>35% clay): _____<br>Depth and thickness of unsuitable horizon(s):<br>_____ / _____<br>Horizon with >50% rock fragments: Yes___ No___<br>Depth and thickness:<br>_____ / _____<br>B. Soil Structure: _____<br>Depth and thickness of unsuitable horizon(s):<br>_____ / _____ | |
| III. SOIL DRAINAGE<br>A. Seasonal High Water Table:<br>Yes _____<br>Perched _____<br>Apparent _____<br>No _____<br>* B. Depth to low chroma mottling_____ | | IV. SOIL DEPTH: _____ | |
| V. RESTRICTIVE HORIZON(S)<br>Yes_____ No_____<br>Depth and thickness<br>_____/_____ | | VI. AVAILABLE SPACE: _____<br>_____ | |
| | | OVERALL SITE SUITABILITY | |

S - Suitable PS - Provisionally Suitable U - Unsuitable

Abnormally high potential for groundwater contamination: Yes___ No ___
Due to: Rapid permeability ____, Sinkhole ____
Depth to highly permeable bedrock ____

COMMENTS:

* Include only low chroma colors due to wetness, indicating a water table.

** If fine textured soils are expected to have a percolation rate slower than 120 min./in., they will be placed in the 4b texture group regardless of the perceived type of clay or amount of chert.

*** Some factors rated US may be reclassified PS if the required provisions are met.

# PROFILE DESCRIPTION

Location: _____ Date: _____

Pit No.: _____ Excavation Depth: _____ Soil Type: _____ Description by: _____

Parent Material: _____ Clay Type: _____ Vegetative Cover: _____

_____

| Hori-zon | Depth In. | 2 Texture (USDA) | % Chert | % Chert >7.6CM | 3 Consistency | 4 Structure | 5 Roots | Misc. 5 (pores, notes) | Color 6 Munsell Notation | Color Munsell Descriptive | |
|---|---|---|---|---|---|---|---|---|---|---|---|
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1 - Descriptions made in accordance with soil survey manual guidelines.

0 - Sample screened

2 - l-loam, sil-silt loam, scl-sandy clay loam, cl-clay loam, sicl-silty clay loam, sc-sandy clay, sic-silty clay, c-clay.

3 - Use wet conditions. ss-slightly sticky, s-sitcky, vs-very sticky, sp-slightly plastic, p-plastic, vp-very plastic.

4 - Record grade and shape. 1-weak, 2-moderate, 3-strong; abk-angular blocky, sbk-subangular blocky, gr-granular.

5 - f-few, c-common, m-many; f-fine and/cr very fine, m-medium, c-course.

6 - color descriptions made with moist, broken samples.

**GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT**

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LOW PRESSURE PIPE SYSTEM
DESIGN SUMMARY SHEET
FORM EV06 PAGE 1 of 5

DATE: _____
BY: _____

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| | | |
|---|---|---|
| Daily waste flow: | _____ | gallons |
| Septic tank size: | _____ | gallons |
| Pumping tank size: | _____ | gallons |
| Effluent loading rate: | _____ | gal/sq.ft./day |
| Absorption field area: | _____ | sq. ft. |
| Total length of laterals: | _____ | feet |
| Lateral diameter: | _____ | inches |
| Number of laterals: | _____ | |
| Length of each lateral: | _____ | feet |
| Supply line length: | _____ | feet |
| Supply line diameter: | _____ | inches |
| Manifold placement: | _____ | |
| Hole size: * | _____ | inches |
| Hole spacing: | _____ | feet |
| Number of holes: | _____ | |
| Pressure head: | _____ | feet |
| Flow per hole: | _____ | gpm |
| Total flow rate: | _____ | gpm |
| Elevation head: | _____ | feet |
| Friction head: | _____ | feet |
| Pressure head: | _____ | feet |
| Total head: | _____ | feet |
| Pump requirements: | _____ | gpm @ |
| | _____ | feet |
| Storage volume in laterals: | _____ | gallons |
| Storage volume in supply line: | _____ | gallons |
| Total storage volume: | _____ | gallons |
| Dosing volume: | _____ | gallons |
| Dosing depth: | _____ | inches |
| Check valve needed ? | _____ | |

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*NOTE: Data on hole size, spacing, pressure head and flow must be listed for each line for systems (such as sloping lots) where these values may be different for each line.

GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT

**LOW PRESSURE PIPE SYSTEM**
**DESIGN WORKSHEET**

PREPARED BY: _____

FORM EV06 1/94
PAGE 2 OF 5

DATE: _____

**ABSORPTION AREA**

STEP 1: CALCULATE DAILY WASTEWATER FLOW

>>>> _____bedrooms @ 120 gal/day = _____ gallons per day (gpd)

STEP 2: DETERMINE LOADING RATE (from Site Evaluation Form EV01)

>>>> Loading rate = _____ gpd per sq. ft.

STEP 3: COMPUTE the total area needed for the absorption system using the equation: A = daily flow / loading rate

Absorption area =

_____ gpd / _____gpd / sq. ft. = _____ square feet

STEP 4: DETERMINE the total length of distribution lines. Spacing between the lines must be 5 feet or more to prevent overloading. Divide the total area by 5 to obtain the total length of distribution lines required.

Total length =

_____ sq. ft. / _____ feet = _____feet

Show lateral line layout on site plan.
>>>> Length of lateral lines = _____feet

Number of lateral lines required = _____

**SEPTIC TANK**

Size is the same as conventional system. ( = _____ gallons )

**PUMPING TANK**

The pumping tank shall provide one day of emergency storage, thus the volume shall be at least twice the volume of the daily wastewater flow.

Minimum volume of pumping tank =

_____ gpd X 2 = _____ gallons. Use _____ gal. tank.

**DOSING RATE**

>>>>

The best starting values for calculations are a 5/32 inch hole diameter, 5 feet hole spacing and a 3 ft. pressure head.

STEP 1: Calculate the number of holes.
Hole diameter: 5/32 inch. Hole spacing (ft.): 5
Number of holes = length of line / hole spacing

= _____feet / 5 feet per hole

= _____holes per line

Total # holes = _____holes per line X _____ lines

= _____holes

STEP 2: Determine the flow rate per hole from TABLE 4-1.

STEP 3: Calculate the total dosing rate.

>>>> Flow rate per hole = _____ gpm

Flow rate per line

= _____gpm X _____holes per line

= _____gpm

Total flow rate

= _____gpm X _____lines

= _____gpm

**PUMP SELECTION**

STEP 1: Compute friction head. Use TABLE 4-2 for pipe friction losse

Friction head = 1.2 X pipe friction loss

>>>> Diameter of supply line & header = _____inches

>>>> Pipe friction loss = Length of supply line & header _____feet

Divided by 100 =_____

>>>> Times value from TABLE 4-2 =_____feet/100 ft.

= _____feet

Friction head = 1.2 X friction loss = _____feet

**PUMP SELECTION** - (continued)

STEP 2: Calculate total head.

>>>> Total head = _____ elevation (gravity) head = difference in elevation between pump and highest lateral on the manifold

+ 3.0 pressure head (ft.)

+ _____ friction head (ft.)

= _____ feet

STEP 3: Select pump based on calculated flow rate and total head.

Pump required: _____ gpm at _____ feet of head

**DOSING VOLUME**

STEP 1: Calculate the minimum dosing volume.
Use TABLE 4-3 to find the volume of the lateral lines.

Dosing volume = Volume of supply line + 5 times volume of lateral lines

A. Supply line diameter = _____ inches
length = _____ feet

Volume of supply line = _____ feet / 100

>>>> X _____ value from TABLE 4-3

= _____ gallons

>>>> B. Lateral line diameter = _____ inches
length = _____ feet

Volume of lateral lines = _____ feet / 100

>>>> X _____ value from TABLE 4-3

= _____ gallons

C. Dosing volume = _____ gallons

Plus 5 times volume of laterals _____ gallons

= _____ gallons

STEP 2. Select the dosing volume.

* Dosing two to four times per day provides adequate resting time.

STEP 3. Compute the depth of effluent to be pumped per dose in order to set pump on and off float switch settings.

Dosing depth = dosing volume in gallons divided by 7.48 gallons per cubic foot divided by the area of the septic tank in square feet times 12 inches per foot

= _____gallons / 7.48 gallons per cubic ft.

>>>> divided by _____square feet

= _____X 12 = _____ inches

NOTE: TO BE DETERMINED AFTER TANK SELECTED

**CHECK VALVE CALCULATION**

* Use check valves ONLY when total storage volume of pipes is greater than 1/4 of the total daily wastewater volume.

STEP 1: Calculate storage volume.

Storage volume = volume of supply line + volume of laterals

= _____gallons + _____gallons

= _____gallons

STEP 4: Compare to 1/4 daily wastewater volume.

1/4 Daily wastewater volume = _____gallons

Compare to storage volume = _____gallons

CHECK VALVE IS / IS NOT REQUIRED