GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT

<u>SOIL EVALUATION</u> - SOIL FACTORS   DATE:_____

LOCATION:_____ OWNER/CONTRACTOR NAME _____

SOIL PIT NUMBER: _____ DEPTH OF PIT: _____ INCHES

SOIL TYPE: _____ DEVIATIONS: _____

F A C T O R	SUITABILITY CLASSIFICATION	F A C T O R	SUITABILITY CLASSIFICATION

I. TOPOGRAPHY AND LANDSCAPE POSITION
  A. Slope:_____ %
  B. Slope type:
    Uniform _____
    Complex _____
  C. Landscape position:
    _____
		II. SOIL CHARACTERISTICS
		
		  A. Soil Texture Group
		    Above _____ inches ____
		    Below _____ inches ____
		    Depth to clayey horizon
		    (>35% clay):_____
		    Depth and thickness of
		    unsuitable horizon(s):
		    _____ / _____	

III. SOIL DRAINAGE
  A. Seasonal High Water Table:
    Yes _____
      Perched _____
      Apparent _____
    No _____
 	
  * B. Depth to low chroma mottling_____
		Horizon with >50% rock fragments: Yes___ No___
		Depth and thickness:
		_____ / _____
		
		  B. Soil Structure:_____
		    Depth and thickness of
		    unsuitable horizon(s):
		    _____ / _____	

V. RESTRICTIVE HORIZON(S)
  Yes_____ No_____
  Depth and thickness
  _____ / _____
		IV. SOIL DEPTH:_____
		
		VI. AVAILABLE SPACE: _____
		
		_____
		
		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: _____

Pit No.: _____

Parent Material: _____

Date: _____

Excavation Depth: _____

Soil Type: _____

Description by: _____

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

1 - Descriptions made in accordance with soil survey manual guidelines.

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-sticky, 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/or very fine, m-medium, c-course.

6 - color descriptions made with moist, broken samples.

0 - Sample screened

GREENE COUNTY RESOURCE MANAGEMENT DEPARTMENT

LOW PRESSURE PIPE SYSTEM   DATE: _____
DESIGN SUMMARY SHEET   BY: _____
FORM EV06 PAGE 1 of 5

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 ?	_____

*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.

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_____feet
                               line & header

                               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   _____ gallons
                 of laterals
                                = _____ 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