

**SITE EVALUATION APPLICATION FOR THE INSTALLATION/ALTERATION/OPERATION
OF A HOUSEHOLD SEWAGE TREATMENT SYSTEM (HSTS)**

*(Note: This must be completed in order to determine Health Department "HSTS evaluation approval",
which is needed prior to the issuance of a County building permit)*

Owner's Name: _____ Phone #: _____

Site Address: _____

Current Mailing Address: _____

Applicant's Name: _____ Affiliation to Owner: _____

Applic. Address: _____ Applic. Phone #: _____

Optional Contact Info (Fax/E-Mail/Cell): _____

Township of Site: _____ Acreage of Site: _____

Survey/Subdivision Name: _____ Lot Number: _____

Type of Dwelling: _____ Single Family Residence _____ Duplex _____ Triplex

"Bedroom" means any room within a dwelling that might reasonably be used as a sleeping room, including but not limited to, rooms designated as a den, office or study.

Total Final Number of Bedrooms: _____ Type of Foundation: _____

Location of Available Drainage: _____

Description of Proposed Development: _____

Additional Comments: _____

Type of Development: (Check applicable situation A, B or C below, and complete the required information)

A. Installation of a new HSTS for a new residence on a currently vacant lot. There are two options for new HSTS installations, read the attached "Important Sewage System Info for Shelby County as of 8-8-07" to determine which option you are eligible for.

Grace Period (uses December 2006 Rules)

1. Provide site plan (see attached site plan checklist for details).
2. As part of the site plan, include contour lines (in one foot increments) for the residence, primary and future sewage system areas.
3. Provide a copy of the legally recorded survey for the property if less than 10 acres.
4. Provide a copy of the floor plan for the house.
5. Flag or stake proposed location of house, driveway, and other accessory structures.
6. Flag or stake proposed location of the HSTS and the reserved replacement area for future HSTS.
7. Make property boundaries easily visible.
8. Read and sign acknowledgement at the bottom of the back of this page.
9. Submit \$150.00 fee with this application to the Health Department.

All New (uses August 2007 Rules)

1. Provide site plan (see attached site plan checklist for details) (This may be part of your design plan).
2. As part of the site plan, include contour lines in one foot increments for the residence, primary and future sewage system areas (This may have been done as part of your land survey).
3. Provide design plan for proposed sewage treatment systems other than standard leach-field systems (such as mounds, drip, etc.).
4. Provide Site and Soil Evaluation Information using attached form (This may have been done as part of your land survey).
5. Provide a copy of the legally recorded survey if less than 10 acres.
6. Provide a copy of the floor plan for the house.
7. Flag or stake proposed location of house, driveway, and other accessory structures.
8. Flag or stake proposed location of the HSTS and the reserved replacement area for future HSTS.
9. Make property boundaries easily visible.
10. Read and sign acknowledgement at the bottom of this page.
11. Submit \$150.00 fee with this application to the Health Department.

B. Alteration/Renovation of an existing HSTS due to sewage system failure, replacement of the current house with a new house with more bedrooms, or when there is a change in location of the house on the lot.

1. Provide site plan (see attached site plan checklist for details).
2. As part of the site plan, include contour lines (in one foot increments) for the residence, primary and future sewage system areas.
3. Provide a copy of the legally recorded survey for the property if less than 10 acres.
4. Provide a copy of the floor plan for the house.
5. Year HSTS installed _____; Owner when HSTS was installed _____.
6. Provide a copy of any HSTS records you have which show system layout.
7. Flag or stake location of existing HSTS and reserved replacement area for future HSTS.
8. Most recent date tank was pumped _____ (The tank may need to be pumped as part of the alteration/renovation).
9. Have HSTS inspection/maintenance ports accessible to the surface of the ground for inspecting.
10. Flag or stake proposed location of new construction/development.
11. Make property boundaries easily visible.
12. Have a plumbing inspection performed by the County Plumbing Inspector or a registered plumber, on all internal plumbing to determine if all wastewater drains go into the HSTS. Date completed _____; by whom _____.
13. Read and sign acknowledgement at the bottom of this page.
14. Submit \$150.00 fee with this application to the Health Department.

C. Operation/Protection of a HSTS due to a bedroom addition or where there is proposed development (other than B. above) which will permanently reduce the amount of ground area on the lot. This also applies to auxiliary structures or ponds construction.

1. Provide site plan (see attached site plan checklist for details).
2. Provide a copy of the legally recorded survey for the property if less than 10 acres.
3. Year HSTS installed _____; Owner when HSTS was installed _____.
4. Provide a copy of any HSTS records you have which show system layout.
5. Flag or stake location of existing HSTS and reserved replacement area for future HSTS.
6. Most recent date tank was pumped _____ (The tank may need to be pumped as part of the operation/protection).
7. Have HSTS inspection/maintenance ports accessible to the surface of the ground for inspecting.
8. Flag or stake location of new construction/development.
9. Make property boundaries easily visible.
10. Read and sign acknowledgement at the bottom of this page.
11. Submit \$75.00 fee with this application to the Health Department.

***If an application is submitted for an environmental service and the applicant later requests a withdraw of the service, 25% of the program fee will be retained by the department as an environmental health administrative fee.

ATTENTION: This evaluation will not be processed until all required information is completed.

NOTE: After this application has been processed and the site evaluation performed, a HSTS status letter will be sent to the applicant along with any requirements/stipulations. This application will expire if the installation/alteration/operation of the HSTS does not commence within one year from the date of approval of this application.

PENALTY: Work must cease immediately on any construction that begins prior to attaining proper approval. Penalties will be enforced for work performed without approval and for each repeat field reinspection.

OWNER/APPLICANT ACKNOWLEDGEMENT: To the best of my knowledge, all of the above information has been completed correctly & thoroughly. I understand and agree that approval for development will be subject to the conditions stipulated by this application. I also understand that if changes occur, approvals will be void/revoked until the new changes have been reviewed and new approvals granted.

Owner/Applicant's Signature _____

Date _____

***** OFFICE USE ONLY *****

Administrative receipt checklist: Site plan Legal survey Floor plan (A & B only) Signatures

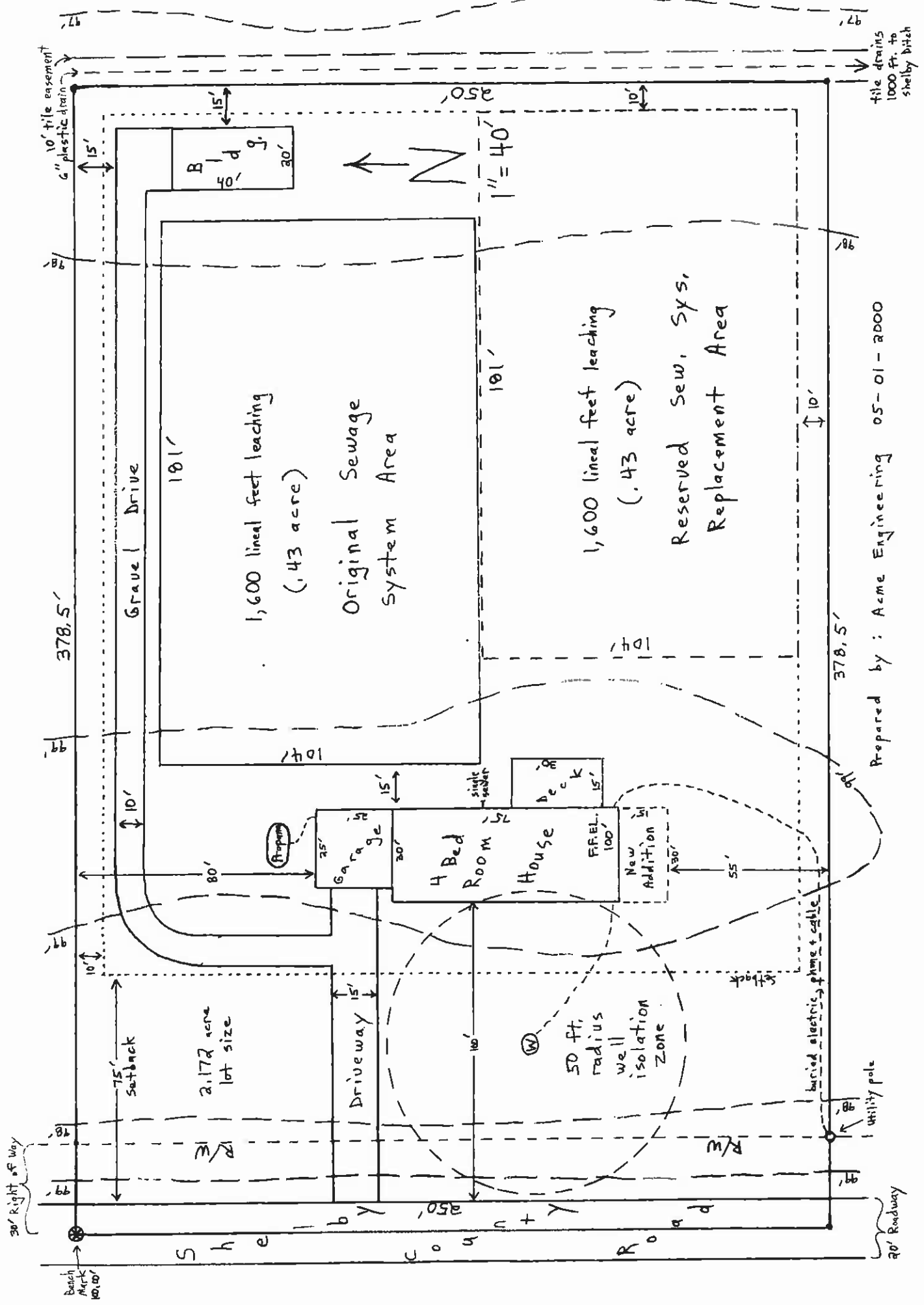
Fee Amount Paid: _____ Date Paid: _____ Receipt #: _____

Site Plan Checklist

Note: The site plan shall be prepared by a qualified person (such as an engineer or surveyor) who is capable of accurately, thoroughly, and legibly completing the following information.

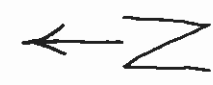
- _____ 1. Draw to scale (a scale of 1" = 40' or less, is required).
- _____ 2. Show North arrow.
- _____ 3. Draw the shape of the lot and give the dimensions of the lot lines.
- _____ 4. Identify benchmark location and elevation (assigned or USGS). (This is not required for Section C of this application.)
- _____ 5. Draw contour lines in one foot increments showing the existing and finished grade of the lot. (This is not required for Section C of this application.)
- _____ 6. Show all existing and proposed wells on this lot and within 50 feet of this lot. Also show a 50 foot radius isolation zone around each of these wells for proper protection distance.
- _____ 7. Show building setback distances.
- _____ 8. Designated with a solid line, show and give dimensions of all permanent structures located on this lot, and give the distances from property lines and between structures (house, driveway, buildings, pond, etc).
- _____ 9. Designated with a dashed line, show and give dimensions of proposed permanent structures on this lot, and give the distances from property lines and between structures (house, additions, buildings, future pond, etc).
- _____ 10. Show the location of existing, buried utilities (electric, phone, gas, sewer) and any easements designated for them, if applicable.
- _____ 11. Show the location of a working drainage outlet (tile or creek) located on the property. If it is a drain tile, show the direction of flow and describe the ditch/creek where the tile outlets into. Also, show the size/location of the easement designated for the future protection of the tile.
- _____ 12. Show the location of all ponds, ditches, and creeks within 100 feet of this property. Show location of 100 year floodplain, if applicable.
- _____ 13. Show the location and give the dimension of the HSTS area.
- _____ 14. Show the reserved replacement area dimensions for the future HSTS.
- _____ 15. Show any other pertinent information affecting development.
- _____ 16. On the site plan, give the name of the site plan preparer and the date the plan was prepared.

There is a Sample of a Site Plan on the back of this page



Prepared by: Acme Engineering 05-01-2000

tile drains
1000 ft. to
shelby ditch



1" = 40'

B
5'
d
g.
30'

single
sewer
k
15'

4 Bed
Room
House
FREL
100'
New
Addition

50 ft.
radius
well
isolation
zone

1,600 linear feet leaching
(.43 acre)

Original Sewage
System Area

1,600 linear feet leaching
(.43 acre)

Reserved Sew. Sys.
Replacement Area

Gravel Drive

181'

181'

378.5'

378.5'

30' Right of Way

20' Roadway

Batch
Mark
100, 10'

Shelby
County
Road

R/W

utility pole

buried electric, phone & cable

setback

2.172 acre
lot size

75' setback

Driveway

15'

Garage

25'

30'

4 Bed Room

15'

House

100'

New Addition

55'

10'

10'

10'

10'

10'

10'

10'

10'

10'

10'

10'

10'

10'

10'

Important Sewage System Info for Shelby County as of 8-8-07

The State Sewage System Rules have been rescinded until at least July 1, 2009. This puts sewage system jurisdiction back under the local rule of the Sidney-Shelby County Health Department. The following information is being provided to help you determine some options you may have in regards to sewage systems.

The first half is a section and appendix of the Sidney-Shelby County Health Department's current sewage system regulations that explains which lots/homes are eligible for the "grace period" to put in a traditional leach-field system (such as those installed in December 2006). The second half is a chart and a diagram showing some criteria and sewage system options if you are doing new development, which will have to follow the 2007 Sidney-Shelby County sewage system regulations. More sewage info is available at the Health Dept.'s office and website, such as: sewage system rules/regulations, and sewage system applications which include lists of soil evaluators, sewage system installers, and further sewage links.

Section 6 Existing Approvals and Existing Sewage Treatment Systems

6.1 All lots approved by the Sidney-Shelby County Combined Health District prior to January 1, 2007 and previously covered by the "grace" period established by the 2007 State of Ohio Sewage Treatment System Rules and authorized by the Board of Health by resolution 06-2 in November 2006 (see appendix "B"), shall remain approved for development unless subsequent rules stating otherwise are placed into effect. These lots shall be developed utilizing the rules of the Sidney-Shelby County Combined Health District that were in effect in December of 2006. All existing lots that are already developed with a 1, 2, or 3 family dwelling that are in need of a system treatment system alteration or replacement due to system failure are also hereby placed under this grace period to install leach field type sewage systems as long as they meet the standards of Sidney-Shelby County Sewage Regulations that were in effect in December of 2006. Specifications for design and review of systems under the grace period shall comply with the Sidney-Shelby County Sewage Regulations that were in effect in December 2006.

Board of Health Sidney-Shelby County

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ROBERT M. MAI, MPH, RS
HEALTH COMMISSIONER

Resolution 06-2

RESOLUTION TO PROVIDE WRITTEN DOCUMENTATION OF HOUSEHOLD SEWAGE DISPOSAL SYSTEM APPROVAL FOR EXISTING SURVEYED LOTS PREVIOUSLY APPROVED BY THE SIDNEY-SHELBY COUNTY BOARD OF HEALTH

WHEREAS, the Sidney-Shelby County Board of Health has reviewed residential building lots 5 acres or less in size for approval as a legal plat; and

WHEREAS, the Board of Health has required building lots to be able to accommodate an on-lot leach field type sewage system with curtain drain and to have adequate replacement area, unless approved with other specific sewage system requirements; and

WHEREAS, the Board of Health does not permit installation of any off-lot discharging sewage disposal systems for new homes on building lots unless a variance is granted.

NOW, THEREFORE, BE IT RESOLVED, pursuant to OAC Section 3701-29-03(B), which becomes effective January 1, 2007, that existing lots reviewed and approved by the Sidney-Shelby Board of Health through December 31, 2006, be given written approval to install leach field type sewage disposal systems as long as the installation permit is obtained prior to the first day of January ~~2010~~. The lots that fall under this grace period must meet the review criteria set forth in the Rules of the Sidney-Shelby County General Health District Household Sewage Disposal Systems Chapter 3701-29 in effect as of the approval date of this resolution.

↑
2011

APPROVED BY: SIDNEY-SHELBY COUNTY BOARD OF HEALTH

Bruce DVM
President

11.8.06
Date

Robert M. Mai
Health Commissioner

11/8/06
Date



CHOOSE HEALTH

Quick reference summary of 2007 sewage system soil depth requirements for NEW residential building sites in Shelby County

(For complete details/options see the 2007 Sidney-Shelby County sewage rules, below is not an all-inclusive list of types of systems, other technologies may exist)

Depth to a limiting condition, such as perched water or high clay layer

Some basic sewage options in Shelby County to attain 12" of separation to limiting condition

0" to <8"

Rules do not allow any sewage system here

8" to <14"

Mound system

installed on the surface of the existing soil, with 16" sand plus 12" topsoil cover

14" to <20"*

At-Grade leaching on flat slope* (or any above)

starting @ 2" into the existing soil, with 6" sand sidewall plus 6" topsoil cover

20" to <30"

Shallow leaching (or any above)

starting @ 8" into the existing soil, plus 6" topsoil cover

≥30"

Traditional leaching (or any above)

installed 18" into the existing soil

Below are some sewage options WHEN an approved pretreatment component is ALSO installed, to receive a 12" credit to the limiting condition, allowing the bottom of the sewage absorption layer to be at the limiting layer (A perpetual maintenance contract IS required)

0" to <8"

Rules do not allow any sewage system here

8" to <18"*

Mound, At-Grade* or Shallow leaching

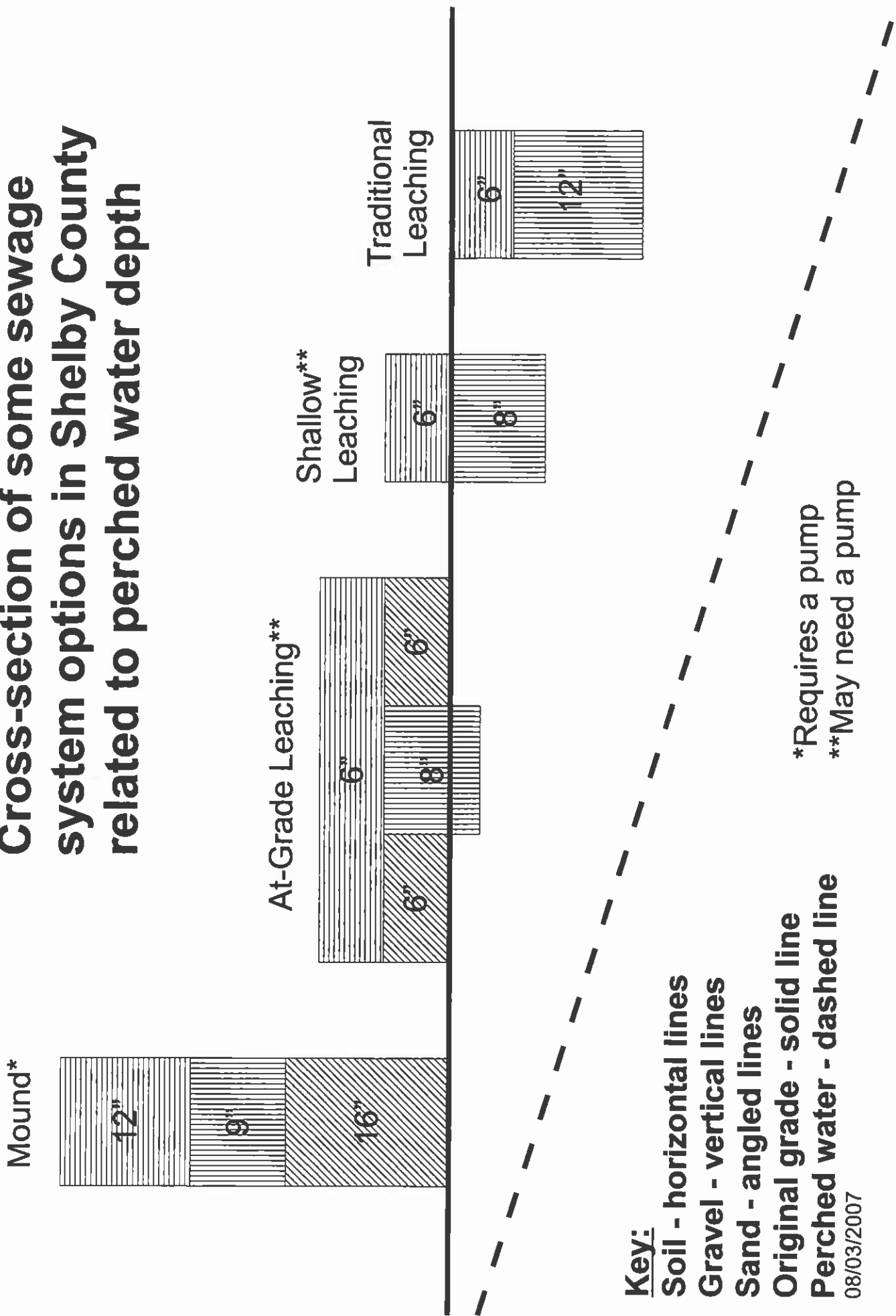
≥18"

Traditional leaching (or any above)

*At-Grade leaching has not received ODH/TAC approval yet, so IF not Board approved then this would NOT be an option.

08/03/2007

Cross-section of some sewage system options in Shelby County related to perched water depth



Websites with extra information regarding sewage systems, soils, professionals, etc.

Shelby County Sewage Rules/Regulations

December 2006 Sewage Treatment Systems Rules – <http://www.shelbycountyhealthdept.org/EnvironmentalHealth.htm>

August 2007 Sewage Treatment System Regulations – <http://www.shelbycountyhealthdept.org/EnvironmentalHealth.htm>

Soils

Tyler Table for Loading Rates – <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewage1.aspx>

ODH Site & Soil Evaluation Form – <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewage1.aspx>

ODH S&S Eval. Form Instructions – <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewage1.aspx>

Soil Environment Technology Learning Lab – <http://setl.osu.edu/>

NRCS web soil survey – <http://websoilsurvey.nrcs.usda.gov/app/>

Soil Evaluators

Association of Ohio Pedologist – <http://www.ohiopedologist.org/>

ARCPACS list – <https://www.soils.org/>

OSU Soils Professionals list – http://setl.osu.edu/other/consultants_list.html

Mound Sewage Systems

Simple Pamphlet on Mounds for the General Public – <http://www.nesc.wvu.edu/nsfc/pdf/pipline/PLs99.pdf>

#813 "Siting, Design and Construction in Ohio" – <http://ohioline.osu.edu/b813/>

#829 "Pressure Distribution of Wastewater" – <http://ohioline.osu.edu/b829/>

#15.24 "Siting, Design & Construction Manual" – http://www.soils.wisc.edu/sswmp/SSWMP_15.24.pdf

#9.14 "Pressure Distribution Network Design" – http://www.soils.wisc.edu/sswmp/SSWMP_9.14.pdf

Sewage Professionals

Sidney-Shelby County Health Dept. Sewage System Installer Registration – <http://www.shelbycountyhealthdept.org/EnvironmentalHealth.htm>

Ohio Onsite Wastewater Assoc. – <http://www.ohioonsite.org/>

Approved Pretreatment Component Approvals and Operation & Maintenance Information

Ohio Department of Health – <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewage1.aspx>

National Pollutant Discharge Elimination System (N.P.D.E.S.)

Ohio E.P.A. – <http://www.epa.state.oh.us/dsw/permits/gpfact.html>

Sewage Publications

National Small Flows Clearinghouse – http://www.nesc.wvu.edu/nsfc/nsfc_index.htm

(Rev. 1/7/2008)

SIDNEY-SHELBY COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
POLICY AND PROCEDURE

Title: SEWER CONNECTION POLICY	
Original Adoption Date: <u>6-14-06</u>	Approved By: <u>Kent Zapp</u> <u>6-14-06</u> Director of Environmental Health Date
Revision Date: <u>N/A</u>	<u>Robert M. Ma</u> <u>6/14/06</u> Health Commissioner Date
Annual Review Date: <u>June</u>	<u>Paul Balgord</u> <u>6-14-06</u> Board of Health Date

PURPOSE: To define when a 1, 2, or 3 family dwelling is accessible to sanitary sewer and to define the process for ordering a property to connect to such sewer.

POLICY: The Sidney-Shelby County Board of Health believes that sanitary sewer is best available technology and should be the first option considered for sewage treatment.

Any **existing** 1, 2, or 3 family dwelling that is **within** 200 feet of a sanitary sewer line that is accessible shall be ordered to abandon their existing home sewage treatment system and connect to the sewer regardless of the condition of the sewage treatment system. For the purpose of this policy, 200 feet is measured from the right-of-way boundary in which the sewer line exists to the foundation of the home. In order to be accessible, the political entity or owner of the sewer line has to allow the sewer connection. Annexation may be required by the city or village to provide sewer services.

Any **proposed new** 1, 2 or 3 family dwelling or **existing** 1, 2 or 3 family dwelling with a **failing** sewage treatment system that is located **beyond** the 200 feet distance must connect to sewer if the proximity of the sanitary sewer line is considered "near" the home as determined by the Sidney-Shelby County Health Department. The sewer connection of proposed new homes and homes with failing sewage treatment systems beyond the 200 feet distance will be handled on a case by case basis.

Economic feasibility will be one of the factors considered when evaluating sewer connection accessibility for any home. Sewer connection may be deemed not feasible if the cost of the sewer connection is more than 3 times the average cost of an on-lot sewage treatment system.

PROCEDURE: The Sidney-Shelby County Board of Health will issue a sewer connection order to the owner of any existing home that meets the conditions of the sewer connection policy unless the home is within the City of Sidney. If the home is within the City of Sidney, the City will issue these orders per section 913.06 of the Sidney Code of Ordinances. Any home within 200 feet of the right-of-way line in which a sanitary sewer line exists or any home with a known failing sewage treatment system that is accessible to sanitary sewer must connect to sewer within 90 days. Any vacant or new home that is deemed accessible to sanitary sewer must remain vacant until connected to sewer. An appeal to a sewer connection order can be made by the owner of the home and shall be in writing and addressed to the Sidney-Shelby Board of Health within 30 days of receiving the order.

RELATED RESOURCES: May 1, 2006 and July 26, 2005 Shelby County Prosecutor legal opinion letters; 1984 DeMoise v. Dowell Ohio Supreme Court case; Ohio Administrative Code section 3701-29; Clark v. Greene County Combined Health District Ohio Supreme Court case.

PERFORMED BY: Board of Health, Health Commissioner, Director of Environmental Health and Environmental Health Division Registered Sanitarians.

G:\Environmental\Kent\Sewage\sewer connection policy draft revision.doc



Public Health
Prevent. Promote. Protect.

Board of Health

Sidney-Shelby County

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Policy and Procedures for HSTS Evaluation/Inspection

The following are policies and procedures for the evaluation of existing private sewage systems as it relates to presale evaluations for real estate transfers, land surveys involving a lot split with a existing dwelling, and for section "C" site evaluations when a sewage application is submitted. This is a guide only and may not fit every situation that arises on an evaluation.

HSTS Section "C", and Land Survey Lot Split with Existing Dwelling evaluations

The purpose of these evaluations is to make sure the development or new lot will not impact on the existing sewage system or sewage system replacement area and to ensure that the sewage system is not creating a nuisance. The development or new lot line must be at least ten feet from the sewage areas. This procedure will vary in implementation depending on the system type. The more common system configurations and the evaluation procedure for each are as follows:

- 1. A septic tank only with no permit on file with the Health Department:**
The homeowner or designated agent will have to provide proof of a secondary treatment mechanism. If no secondary treatment mechanism is found, then the system will be required to be upgraded.
- 2. A septic tank and sub-surface sand filter (permit on file):**
The effluent being discharged from the sand filter needs to be inspected for quality. A riser must be in place or installed on the outlet tile of the sand filter.
- 3. A septic tank and leach field or bed and curtain drain (permit on file):**
The effluent level in the septic tank and distribution box can be checked to make sure the leach field or bed is not backed-up. The curtain drain needs to be checked to make sure no sewage water is draining into the tile. The leaching area needs to be probed and walked to see if there is any surfacing sewage water. A dye test may need to be conducted if there is a question to whether or not sewage water is discharging off-lot. If no curtain drain exists, additional checking may be required to ensure no sewage water is discharging off-lot. (check for any connections made to leaching via gravel trench or tile)
- 4. An aeration system:**
The system should be checked to make sure it's functioning as designed and discharging a quality effluent. (see aeration inspection sheet)
- 5. Mound system:**
Reference editions 9.14 and 15.24 of "Design and Construction Manual for Wisconsin Mounds" or the OSU Extension Bulletins 813 and 829.

Note: The HSTS Section "C" evaluation application and fee requirement is waived if the HSTS was inspected within the past 18 months by a real estate evaluation, HSTS final inspection, one year inspection, or operational permit inspection. Only a site plan needs to be submitted to show that the proposed development will not impact the HSTS or HSTS replacement area.

Real Estate evaluation

The purpose of this evaluation is to ensure that the sewage system is not creating a nuisance and functioning as designed. The procedure for this evaluation is the same as section "C" and lot split evaluations except that it is mandatory for all system components to be in place. Risers to grade with lids must be installed over the inlet and outlet access manholes of the septic tank and over the distribution box. An inspection port must be in place or installed over the curtain drain for a leach field or a subsurface sand filter drain prior to connection to the outlet tile. The baffles of the septic tank must be checked to make sure they are intact. The house plumbing must be checked to make sure all wastewater drains go to the sewage system. The tank must be pumped out after the initial evaluation unless it has been pumped out in the past 2 years (proof must be provided). A dye test may be needed if there is uncertainty on whether or not untreated sewage effluent is discharging off-lot.

Board of Health

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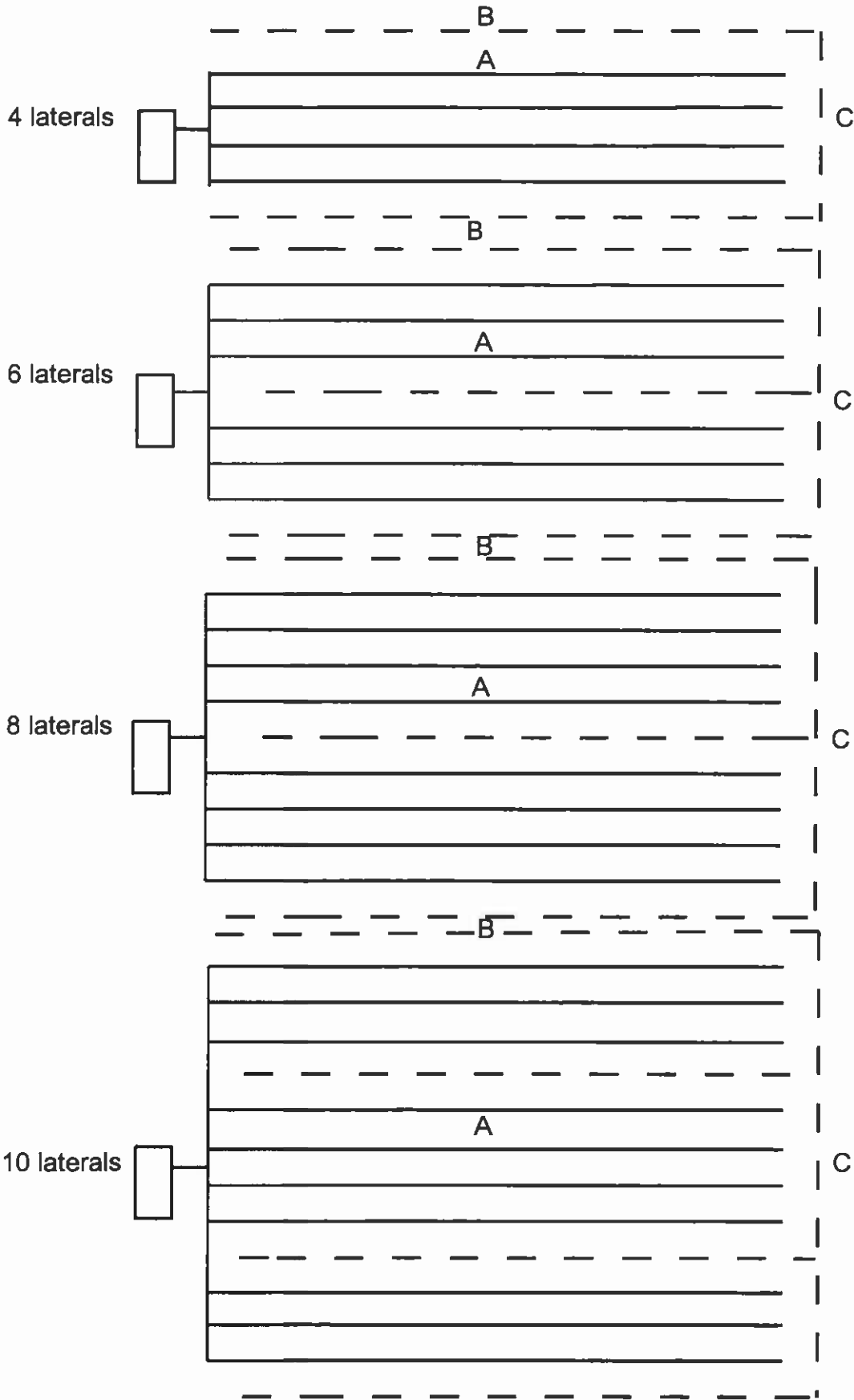
Building permit sign-off policy for HSTS application section "C"

The Health Department evaluates existing sewage systems and wells on residential lots when there is a development due to a home addition or when there is a proposed development that will permanently reduce the amount of ground area on a lot. The "Policy and Procedures for Sewage System Evaluation/Inspection" should be referenced for the process for evaluating the sewage system. This policy outlays the various situations that arise and how to handle them as it relates to the building permit and/or property.

1. During the evaluation, the sewage system is found failing and creating a nuisance. Orders should be issued to upgrade the sewage system giving a timeframe to have the system installed. The building permit can be signed-off on and the upgrade of the system can be handled under the normal process for compliance. An additional \$75 needs to be collected to convert the sewage application to a section "B" for the upgrade of the system
2. During the evaluation, the sewage system is found satisfactory but needs altered. This may be due to a bedroom addition or changing the location of part of the system due to the proposed development. (Adding leaching, moving septic tank, changing size of system, etc.) A letter needs to be sent to the applicant detailing what is required to be done to the system due to the proposed development. An additional \$75 needs to be collected to convert the sewage application to a section "B" for the alteration of the system. The building permit can be signed-off on and the alteration of the system must be completed prior to the completion of the project.
3. During the evaluation, the system is found satisfactory
An approval letter is to be sent to the applicant.

Leaching Area Designs in Shelby County

A=length of laterals, B=overall length, C=overall width



Leaching Area Design Measurements for Shelby County

THREE BEDROOM	Total lineal ft.	A=length of laterals	B=overall length	C=overall width	Total area sq. ft.	Total area acreage
3' wide trench, 4 laterals	675	169	208	67	13936	0.32
3' wide trench, 6 laterals	675	113	152	96	14592	0.33
3' wide trench, 8 laterals	675	85	124	114	14136	0.32
3' wide trench, 10 laterals	675	68	107	134	14338	0.33
2' wide trench, 4 laterals	840	n/a	n/a	n/a	n/a	n/a
2' wide trench, 6 laterals	840	140	179	88	15752	0.36
2' wide trench, 8 laterals	840	105	144	104	14976	0.34
2' wide trench, 10 laterals	840	84	123	122	15006	0.34
1' wide trench, 4 laterals	1200	n/a	n/a	n/a	n/a	n/a
1' wide trench, 6 laterals	1200	200	239	84	20076	0.46
1' wide trench, 8 laterals	1200	150	189	98	18522	0.43
1' wide trench, 10 laterals	1200	120	159	116	18444	0.42
FOUR BEDROOM						
3' wide trench, 4 laterals	900	n/a	n/a	n/a	n/a	n/a
3' wide trench, 6 laterals	900	150	189	96	18144	0.42
3' wide trench, 8 laterals	900	113	152	114	17328	0.4
3' wide trench, 10 laterals	900	90	129	134	17286	0.4
2' wide trench, 4 laterals	1120	n/a	n/a	n/a	n/a	n/a
2' wide trench, 6 laterals	1120	187	226	88	19888	0.46
2' wide trench, 8 laterals	1120	140	179	104	18616	0.43
2' wide trench, 10 laterals	1120	112	151	122	18422	0.42
1' wide trench, 4 laterals	1600	n/a	n/a	n/a	n/a	n/a
1' wide trench, 6 laterals	1600	n/a	n/a	n/a	n/a	n/a
1' wide trench, 8 laterals	1600	200	239	98	23422	0.54
1' wide trench, 10 laterals	1600	160	199	116	23084	0.53
FIVE BEDROOM						
3' wide trench, 4 laterals	1125	n/a	n/a	n/a	n/a	n/a
3' wide trench, 6 laterals	1125	188	227	96	21792	0.5
3' wide trench, 8 laterals	1125	141	180	114	20520	0.47
3' wide trench, 10 laterals	1125	113	152	134	20368	0.47
2' wide trench, 4 laterals	1400	n/a	n/a	n/a	n/a	n/a
2' wide trench, 6 laterals	1400	n/a	n/a	n/a	n/a	n/a
2' wide trench, 8 laterals	1400	175	214	104	22256	0.51
2' wide trench, 10 laterals	1400	140	179	122	21838	0.5
1' wide trench, 4 laterals	2000	n/a	n/a	n/a	n/a	n/a
1' wide trench, 6 laterals	2000	n/a	n/a	n/a	n/a	n/a
1' wide trench, 8 laterals	2000	n/a	n/a	n/a	n/a	n/a
1' wide trench, 10 laterals	2000	200	239	116	27724	0.64

Landforms
Upland*
Terrace
Flood Plain
Lake Plain
Beach Ridge
*Includes glacial till plain and end moraine

Position on Landform
Depression
Flat
Knoll
Crest
Hillslope
Footslope

Shape of Slope
Convex
Concave
Linear
Complex

Master Horizons		Horizon Suffixes		Horizon Modifiers
O	Predominantly organic matter (litter & humus)	a	Highly decomposed organic matter	Numerical Prefixes: Used to denote lithologic discontinuities.
A	Mineral, organic matter (humus) accumulation, loss of Fe, Al, clay	b	Buried genetic horizon	
E	Mineral, loss of Si, Fe, Al, clay, organic matter	d	Densic layer (physically root restrictive)	Numerical Suffixes: Used to denote subdivisions within a master horizon.
B	Subsurface accumulation of clay, Fe, Al, Si, humus; sesquioxides; loss of CaCO ₃ ; subsurface soil structure	e	Moderately decomposed organic matter	
C	Little or no pedogenic alteration, unconsolidated earthy material, soft bedrock	g	Strong gley	
R	Hard bedrock	i	Slightly decomposed organic matter	
		p	Plow layer or artificial disturbance	
		r	Weathered or soft bedrock	
		t	Illuvial accumulation of silicate clay	
		w	Weak color or structure within B	
		x	Fragipan characteristics	

Soil Texture			
Texture Class Abbreviations		Textural Class Modifiers	
Course Sand	cos	Gravelly	GR
Sand	s	Fine Gravelly	FGR
Fine Sand	fs	Medium Gravelly	MGR
Very Fine Sand	vfs	Coarse Gravelly	CGR
Loamy Coarse Sand	lcos	Very Gravelly	VGR
Loamy Sand	ls	Extremely Gravelly	XGR
Loamy Fine Sand	lfs	Cobbly	CB
Loamy Very Fine Sand	lvfs	Very Cobbly	VCB
Coarse Sandy Loam	cosl	Extremely Cobbly	XCB
Sandy Loam	sl	Stony	ST
Fine Sandy Loam	fsl	Very Stony	VST
Very Fine Sandy Loam	vfsl	Extremely Stony	XST
Loam	l	Bouldery	BY
Silt Loam	sil	Very Bouldery	VBY
Silt	si	Extremely Bouldery	XBY
Sandy Clay Loam	scl	Channery	CN
Clay Loam	cl	Very Channery	VCN
Silty Clay Loam	sicl	Extremely Channery	XCN
Sandy Clay	sc	Flaggy	FL
Silty Clay	sic	Very Flaggy	VFL
Clay	c	Extremely Flaggy	XFL
*Estimate approximate clay percentage within 5 percent			

Soil Structure					
Grade		Size		Type (Shape)	
Structureless	0	Very Fine	vf	Granular	gr
Weak	1	Fine	f	Angular Blocky	abk
Moderate	2	Medium	m	Subangular Blocky	sbk
Strong	3	Coarse	co	Platy	pl
		Very Coarse	vc	Prismatic	pr
		Extr. Coarse	ec	Columnar	cpr
		Very Thin*	vn	Single Grain	sg
		Thin*	tn	Massive	m
		Thick*	tk	Cloddy	CDY
		Very Thick*	vk		
* The sizes Very Thin, Thin, Thick, and Very Thick, are used when describing platy structure only. Substitute thin for fine, and thick for coarse when describing platy structure.					

Moist Consistence	
Loose	l
Very Friable	vfr
Friable	fr
Firm	fi
Very Firm	vfi
Extremely Firm	efi

For a more detailed explanation on describing and sampling soils, please refer to the "Field Book for Describing and Sampling Soils" Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors) 2002. Field book for describing and sampling soils, version 2.0. Natural Resources Conservation Service, USDA, National Soil Survey Center, Lincoln, NE.

Appendix 3 – Tyler Table

The loading rate table provided at the end of this appendix should be of interest in understanding the relationship between site evaluation information and STS design considerations. Table 1 is reprinted from the following published documents available through the Small Scale Waste Management Project (SSWMP) at University of Wisconsin, Madison. The papers provide a detailed explanation of the development and use of this loading rate table in Ohio.

Hydraulic Wastewater Loading Rates to Soil. E. J. Tyler. 2001. Proceedings of the 9th International Symposium on Individual and Small Community Sewage Systems. ASAE. Saint Joseph, MI. P.80-86. http://www.soils.wisc.edu/sswmp/SSWMP_4.43.pdf

Designing with Soil: Development and Use of a Wastewater Hydraulic Linear and Infiltration Loading rate Table. E. Jerry Tyler and Laura Kramer Kuns. 2000. Conference Proceedings. NOWRA. Grand Rapids, MI. http://www.soils.wisc.edu/sswmp/SSWMP_4.42.pdf

The selection of a soil loading rate or basal loading rate (referred to as infiltration loading rate in Table 1) and a linear loading rate (referred to as hydraulic linear loading rate in Table 1) should be justified in an STS design plan. The following should be considered when utilizing the values provided in the references cited in this appendix:

1. Table 1 values assume a higher daily design flow than 120 gpd/bedroom. Daily design flows generally include a margin of safety and usually are specified as peak flows. Selected loading rate values may differ depending on the incorporation of other safety factors. Some designs may include a means to attenuate peak flows and limit the actual daily flow to a volume significantly less than the peak daily design flow.
2. Table 1 values are estimates. Many factors should be considered when selecting loading rates, starting with close attention to the information from the site and soil evaluation for the specific site selected for the soil absorption component. Other factors include but are not limited to the type of soil absorption component and its configuration and landscape position.
3. Some of the spaces in Table 1 have values of 0.0 for the infiltrative loading rate or are blank for hydraulic loading rate values. Table 1 also does not account for depths of less than eight inches to a limiting condition. This indicates that the site conditions that relate to these circumstances could be unsuitable or very challenging for STS performance. Very conservative loading rates should be selected for such site conditions when an STS is not otherwise prohibited.

When there is a Table 1 designation of 0.0 gal/da/ft² for the infiltration loading rate, the soil should be considered as a limiting condition. The blank spaces on Table 1 in the columns for hydraulic linear loading rate correspond to the designations of 0.0 gal/da/ft² for the infiltration loading rate.

If an STS is permitted under conditions of infiltration distances of less than eight inches to a perched seasonal high water table, a very conservative hydraulic linear loading rate should be selected in the context of the loading rates presented in Table 1.

Table 1. Infiltration rates in gal/da/ft² for wastewater of >30 mg/L * or wastewater of <30 mg/L * and hydraulic linear loading rates in gal/da/ft for soil characteristics of texture and structure and site conditions of slope and infiltration distance. Values assume wastewater volume of >150 gal/da/bedroom. If horizon consistency is stronger than firm or any cemented class or the clay mineralogy is smectitic, the horizon is limiting regardless of other soil characteristics

Texture	Soil Characteristics		Infiltration Loading Rate, gal/da/ft ²	Hydraulic Linear Loading Rate, gal/da/ft												Row
	Shape	Grade		0-4%			5-9%			>10%						
				8-12	12-24	24-48	8-12	12-24	24-48	8-12	12-24	24-48				
COS, S, LCOS, LS	--	OSG	>30 mg/L *	0.8	4.0	5.0	6.0	5.0	7.0	6.0	8.0	6.0	7.0	8.0	1	
			<30 mg/L *	1.6	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	2		
FS, VFS, LFS, LVFS	--	OSG	>30 mg/L *	0.4	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	3		
			<30 mg/L *	0.6	3.0	3.5	4.0	3.6	4.1	4.6	4.0	5.0	6.0	4		
CSL **, SL	PL	1	>30 mg/L *	0.2	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	5		
			<30 mg/L *	0.5	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	6		
FSL, VFSL	PR/BK /GR	2,3	>30 mg/L *	0.4	3.5	4.5	5.5	4.0	5.0	6.0	6.0	7.0	7			
			<30 mg/L *	0.7	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	8		
L	PL	1,2,3	>30 mg/L *	0.2	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	9		
			<30 mg/L *	0.5	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	10		
SIL	PR/BK /GR	2,3	>30 mg/L *	0.2	3.0	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	11		
			<30 mg/L *	0.8	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	12		
SCL, CL, SICL	PL	1,2,3	>30 mg/L *	0.0	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	13		
			<30 mg/L *	0.0	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	14		
SC, C, SIC	PR/BK /GR	2,3	>30 mg/L *	0.4	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	15		
			<30 mg/L *	0.6	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	16		
A	--	0M	>30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	17		
			<30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	18		
A	PL	1,2,3	>30 mg/L *	0.0	2.0	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0	19		
			<30 mg/L *	0.0	2.0	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0	20		
A	PR/BK /GR	2,3	>30 mg/L *	0.0	2.0	2.9	3.4	2.7	3.0	3.3	3.0	3.5	4.0	21		
			<30 mg/L *	0.0	2.0	2.9	3.4	2.7	3.0	3.3	3.0	3.5	4.0	22		
A	--	0M	>30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	23		
			<30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	24		
A	PL	1,2,3	>30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	25		
			<30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	26		
A	PR/BK /GR	2,3	>30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	27		
			<30 mg/L *	0.0	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	27		

© 2000 by E. Jerry Tyler, printed with permission. * 30 mg/L applies to BOD₅ ** CSL is actually COSL - coarse sandy loam

Sewage Treatment System Design Dimension Calculations for Site Plan
(using the Site/Soil Evaluation and the Tyler Table)

Basic Information:

Site Address/Location: _____

Slope: _____

Limiting Condition/Depth: _____

Most restrictive horizon within the vertical separation distance: _____

Texture: _____ Shape: _____ Grade: _____ Consistence: _____

Soil infiltration Loading Rate (SiLR): _____ >30 mg/L (if septic tank or unknown)
or _____ <30 mg/L (if using pretreatment)

Linear Loading Rate (LLR): _____

1. Daily Design Flow (DDF):

Number of bedrooms (use 4 if unknown) _____ x 120 gpd = _____ gpd

2. Absorption area:

(DDF) _____ / (SiLR) _____ = _____ sq. ft.

3. Absorption area length:

(DDF) _____ / (LLR) _____ = _____ ft.

4. Absorption area width:

area _____ / length _____ = _____ ft.

or (LLR) _____ / (SiLR) _____ = _____ ft.

DESIGN DIMENSION WIDTH:

5 x (Absorption area width) _____ = _____ ft.

Overall Design Dimensions for Site Plan:

Design dimension width x Absorption area length

_____ ft. x _____ ft.

Calculations prepared by: _____ Date: _____

EXAMPLE

JOHN DOE Site and Soil Evaluation Form

Site information: Slope is 2 to 4 %

Limiting Condition: 14 inches to Perched Seasonal Water Table

Soil information: Using 2Bt Horizon

(most restrictive horizon within the vertical separation distance in the soil profile)

- Texture - Clay Loam (CL)
- Structure – Shape SBK (BK); Grade 2
- Consistence – Firm (FI)

Tyler Table

Soil Infiltration Loading Rates for CL – BK 2

- > 30 mg/L BOD₅/TSS = 0.4 gal/day/ft²
- < 30 mg/L BOD₅/TSS = 0.6 gal/day/ft²

Linear Loading Rate for 0-4% slope & 12-24 inches Infiltration Distance

- 2.9 gal/day/ft

4 steps to determine dimensions on site plan or drawing (larger than absorption area)

1. Daily Design Flow: 4 bedroom home (120 gal/day/bdrm X 4 bdrm = 480 gal/day)
2. Absorption Area: use conservative Soil Loading Rate (Infiltration Loading Rate on Tyler Table) of **0.4 gal/day/ft²** to calculate area (480 gpd ÷ 0.4 gpd/ft² = 1200 ft²)
3. Absorption Area Length: use Linear Loading Rate of **2.9 gal/day/ft** to calculate length along contour (480 gpd ÷ 2.9 gpd/ft = 166 ft)
4. Absorption Area Width: can calculate width in two ways before using the 5X multiplier to set the dimensions for the two soil absorption areas on the site plan or drawing
 - (area ÷ length = width) 1200 ft² ÷ 166 ft = 7.2 ft and
 - (LLR ÷ SLR = Width) 2.9 gal/day/ft ÷ 0.4 gal/day/ft² = 7.25 ft**5 X 7.2 ft results in dimensions of 166 feet long by 36 feet wide** which allows for multiple design options to be sited within this available area. The actual absorption area of a selected design may not utilize all of the width of this available area.

Design Examples (all would fit within the dimensions calculated above)

- A. Septic Tank to Sand Mound (pressure distribution) - using elevation soil depth credit
 - 10 inches of sand in mound to create 2 feet vertical separation distance
 - Adequate width available to allow 3 to 1 side slopes on mound
- B. Pretreatment to LPP in 18" wide chamber leaching trenches at 2 inches into soil
 - One foot fecal depth credit (<10,000 fecal coliform col/100mL) so only need to maintain 1 foot of vertical separation in the in situ soil
 - Less area (800 ft²) and width (4.8 feet) due to < 30 mg/L BOD₅/TSS = 0.6 gal/day/ft² so could have four ~ 166 foot trenches at ~ 6 foot on center
- C. At-grade drip distribution – using one foot soil depth credit for timed micro-dosing with SLR of <0.25 gal/day/ft² (maximum loading rate allowed for credit)
 - Area increases (480 gpd ÷ 0.24 gpd/ft² = 2000 ft²) 166 feet X 12 feet
- D. 13(D)(2) variance option **IF ALLOWED BY THE BOARD OF HEALTH** – septic tank to gravity trench at 12 inch depth from surface (2 inches above seasonal water) with ~ 6 inches of added top soil cover material
 - 1200 ft² trench bottom area - five 18 inch wide 166 foot long trenches (even if 6 foot between trenches, leaching area width is still within the 36 foot wide available area).

Sidney-Shelby County Health Dept., Mound Sewage Treatment System Data Sheet/Checklist

(Provide the following minimum info on your design plans and/or in the blanks below)

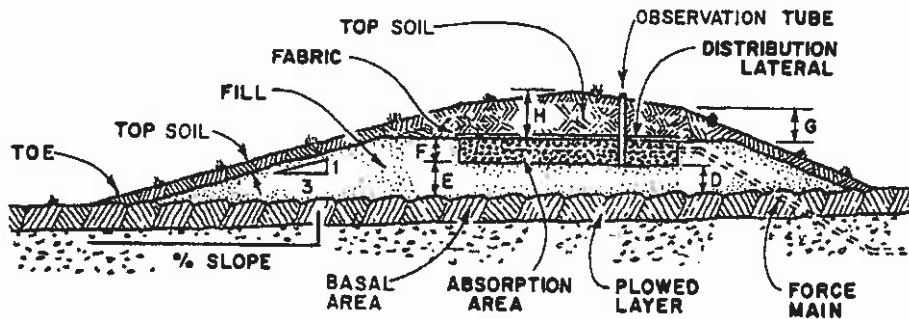
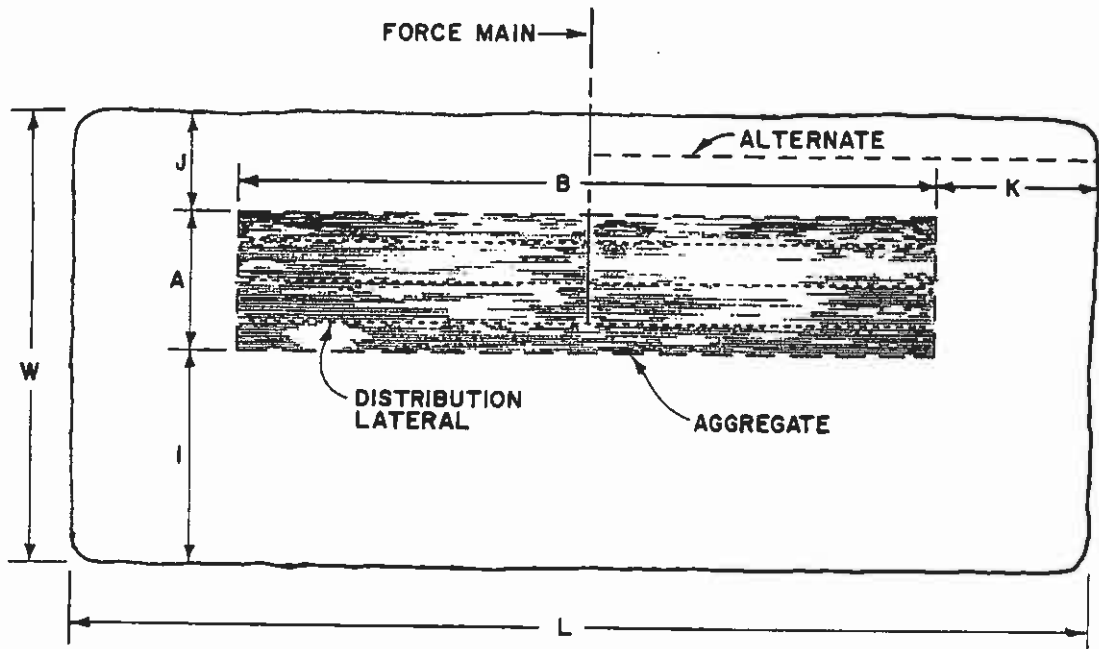
(Mounds must comply with ODH/TAC approval and S-SCHD STS Regulations) 2-6-08

Site Address: _____ Township: _____

Mound Designer: _____ Date Designed: _____

Contact Info (Phone/E-Mail/Fax/Cell): _____

1. Slope of sewage treatment system area (≤ 15 percent): _____ %
2. Depth of in-situ soil to limiting condition (such as perched seasonal water): _____ inches
3. Is there an interceptor drain (install when < 12 inches of in-situ soil): _____
4. Most limiting soil layer within the vertical separation distance (VSD): _____
5. Soil infiltration loading rate of most limiting soil layer in VSD (from Tyler table): _____ gpd/ft²
6. Linear loading rate of most limiting soil layer in VSD (from Tyler table): _____ gpd/ft
7. Daily design flow (based on 120gpd per bedroom): _____ gpd
8. Minimum required basal area of sand/in-situ-soil interface (GPD \div SLR): _____ ft²
9. Length of gravel distribution area (GPD \div LLR): _____ feet
10. Width of gravel distribution area (LLR \div 1.0 gpd/ft²) (shall be < 10 ft.): _____ feet
11. Natural washed stone used (such as washed 57's leachfield stone): _____
12. Depth of sand below upslope edge of gravel distribution area: 16 inches
13. Depth of sand below downslope edge of gravel distribution ($= 16'' + (\text{slope})(\text{width})$): _____ in.
14. Natural sand used (such as ODOT concrete sand ASTM-C33): _____
15. Mounds upslope width (using 3:1 slope): _____ feet
16. Mounds downslope width (using 3:1 slope): _____ feet
17. Mound end lengths (using 3:1 slope): _____ feet each
18. Overall dimensions of the mound's base: _____ ft. X _____ ft.
19. Orifice size (no smaller than 1/8 inch diameter): _____ inch diameter
20. Orifice spacing (no more than six square feet of distribution area per orifice): _____ feet o/c
21. Orifice direction in laterals (up or down): _____
22. Total number of laterals: _____
23. Length of each lateral: _____ feet
24. Lateral diameter: _____ inch
25. Type of orifice shielding (such as a 4" perforated pipe): _____
26. Manifold length: _____ feet
27. Manifold diameter: _____ inch , Manifold volume: _____ gallons
28. Lift height from pump to manifold: _____ feet
29. Transport line length from pump to manifold: _____ feet
30. Transport line diameter: _____ inch , Transport line volume: _____ gallons
31. How are pipes protected from freezing (i.e. sloped to weep hole): _____
32. Pump outlet diameter: _____ inch
33. Void volume of all the laterals: _____ total gallons
34. Dose volume ($\leq \frac{1}{4}$ the daily design flow & ≥ 5 x void vol. of laterals): _____ gallons
35. Distal pressure head at end of each lateral (2-5 feet, higher w/ smaller orifice): _____ feet
36. Percent flow differential between first and last orifice (no more than 10%): _____ %
37. Pump selection criteria (Flow rate/Total dynamic head): _____ gpm/ _____ feet
38. Volume draining back to dosing tank (depends on orifice direction): _____ gallons
39. Size of dosing tank (minimum of 120 x Number of bedrooms): _____ gallons
40. Pump dose setting (dose volume + drainback volume): _____ gallons
41. Time dosing setting (time dose when < 12 inches of in-situ soil): _____
42. Size of septic tank: _____ gallons



Cross section and plan view of a mound system on a sloping site.

Acknowledgment of the steps for the installation of an off-lot discharging sewage treatment system in Shelby County as of 1-1-2007

- **Eligibility:** An off-lot discharging sewage treatment system (STS) is only possible when there is an existing residence that needs to replace a failing STS, and an on-lot STS such as a mound or leach-field is not possible and public sewer is not accessible. Or, when there is an existing lot with the same above criteria, plus it must also have adequate receiving stream characteristics. Etc.

For exact details regarding off-lot discharging STS see:

NPDES Permit/Requirements at: www.epa.state.oh.us/dsw/permits/GP_HouseholdSewageTreatmentPlants.html

ODH treatment component approvals at: www.odh.ohio.gov/odhPrograms/eh/sewage/sewmore.aspx

S-SCHD STS Permit/Regulations/Application at: www.shelbycountyhealthdept.org/EnvironmentalHealth.htm

Read all of the steps below so you are aware of all necessary requirements, including future maintenance and sampling. Then sign and date below and turn this sheet in to the Sidney-Shelby County Health Department (S-SCHD) when you submit the STS application. Please keep a copy for yourself.

1. The owner/applicant completes and submits a S-SCHD STS application, includes this acknowledgment sheet signed by the owner, and includes the specifications of an off-lot discharging STS which is proposed to be installed. The only new off-lot discharging STS that may be used are the few ones which have received ODH treatment component approval and meet NPDES standards. See ODH website above.
2. The S-SCHD reviews the STS application to determine if the proposal meets the requirements of S-SCHD STS Regulations, ODH Approval, and National Pollutant Discharge Elimination System (NPDES) General Permit requirements.
3. If the application meets #2 above, the S-SCHD will give the owner/applicant a "Recommendation of Coverage" letter along with a partially completed Notice of Intent (NOI) form.
4. The owner/applicant completes the NOI, and sends the NOI, the NOI fee, and the Recommendation of Coverage letter to the EPA.
5. The EPA reviews the NOI and if it meets the requirements, the EPA will send an approval letter to the owner/applicant.
6. The STS installer chosen by the owner goes to the S-SCHD with STS installation details and a copy of the EPA approval letter and purchases a STS installation permit.
7. The STS is installed, and the installation is inspected by the S-SCHD. If it passes inspection the STS is approved for use.
8. A perpetual maintenance contract is required annually with a registered STS service provider to ensure the proper operation and maintenance (O&M) of the STS. The owner shall send a copy of a signed contract to the S-SCHD every January and at any other time requested.
9. Annual sampling of the final effluent discharging from the STS is required to ensure the system continues to meet EPA requirements (see Part III and IV of the NPDES Permit on the back of this page). Sampling can be done by the service provider in #8 above, or can be done separately. The owner shall send a signed copy of the sample results to the S-SCHD every January and at any other time requested.

Owner Acknowledgment

I understand that I am responsible for compliance with all terms and conditions of having an off-lot discharging STS. I have read and understand the above steps to be taken before and after the installation of an off-lot discharging STS. I understand that I am responsible for acquiring an annual maintenance contract for the STS and annual testing of the STS effluent after installation is completed.

Print Name: _____ Site Address: _____

Signature: _____ Date: _____

Part IV. SPECIAL CONDITIONS

- A. This permit may be modified, or revoked and reassumed, to comply with any applicable standards or regulations.
- B. Grab samples shall be collected at such times and locations, and in such fashion, as to be representative of the facility's performance.
- C. Samples taken in compliance with the effluent monitoring requirements shall be collected following treatment and prior to either direct discharge to the receiving stream or discharge to the receiving stream via a storm sewer if the wastewater does not combine with any other sources of water.
- D. Sample results shall be submitted to the local health district having jurisdiction and shall be available to Ohio EPA upon request.
- E. For turbidity, odor and color, use the following table to determine the value between 0 and 4 that is reported.

REPORTED VALUE*	SEVERITY DESCRIPTION	TURBIDITY	ODOR	COLOR
0	None	Clear	None	Colorless
1	Mild	Light Solids	Musty	Grey
2	Moderate	Heavy Solids	Septic	Black
3	Serious			
4	Extreme			

* interpolate between the descriptive phrases

- F. **Disinfection.** Effluent disinfection is not always required. However, the permittee is required to meet all applicable discharge permit limits. If disinfection facilities exist, they shall be maintained in an operable condition. Disinfection may be required if Ohio EPA determines that future bacteriological incidences or emergency conditions indicate the need for disinfection.
- G. **Dechlorination.** If dechlorination is necessary to achieve compliance with the residual chlorine limit in this permit, the discharger shall utilize the system's dechlorination device if available, or shall apply for an alteration permit from the local health district having jurisdiction to install such a device.
- H. Nothing in this permit should be considered to authorize any construction or operation that also requires a permit or other authorization from the local health district having jurisdiction.

Part III. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Table A.1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGES FROM HSTS DESIGNED IN ACCORDANCE WITH OAC 3701-29, DISCHARGING TO WATERS OTHER THAN LAKE ERIE.

During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements.

Reporting Code	Units	Parameter	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS (3)	
			Concentration	30 Day Daily	Meas. Frequency	Sample Type
00056	GPD	Flow Rate	-	-	1/year	24Hr Tot. Est. Grab
00530	mg/l	Total Suspended Solids	-	18	1/year	Grab
00610	mg/l	Nitrogen-Ammonia(NH ₄) (summer)	-	2.0	1/year	Grab
		(winter)	-	4.5	1/year	Grab
80082	mg/l	CHOD	-	15	1/year	Grab
31616	#/100ml	Fecal Coliform (summer)	-	2000	1/year	Grab
00083	-	color, severity (1)	-	-	1/year	Estimate
01330	-	odor, severity (1)	-	-	1/year	Estimate
01335	-	turbidity, severity (1)	-	-	1/year	Estimate
00300	mg/l	Dissolved Oxygen	-	not less than 6.0 at any time	1/year	Grab
50060	mg/l	Chlorine, total residual (2)	-	not to exceed 0.038 at any time	1/year	Grab

(1) See Part IV, paragraph E.
 (2) See Part IV, paragraph F.
 (3) Additional operational monitoring requirements shall comply with those listed in OAC 3701-29 for all system components, including service contracts as applicable.

SOIL SITE EVALUATOR LIST

The following companies/individuals have indicated that they will do soil evaluations in Shelby County.

NAME	BUSINESS NAME	ADDRESS	CITY, STATE, ZIP	PHONE	E-MAIL
Buckingham, Greg		419 N. High Street	Union City, IN 47390	765-964-3323	gbuckingham@woh.rr.com
Deaton, Mathew	Deaton Soil Services	690 Skodborg Dr.	Eaton, OH 45320	937-533-9991	mdeaton2@woh.rr.com
Jacobs, Cale	CJ Engineering Co.	6807 Catamaran Dr.	Huntsville, OH	937-843-3447	cjengineeringco@earthlink.net
Michael, Dan R.		620 N. Broadway	Lebanon, OH	513-934-1040	clearcreekservice@yahoo.com
Miller, Steven A.	Soil & Env. Consult. Serv.	1974 N. 3Bs & K Rd.	Sunbury, OH 43074	614-579-1164	or Phone # 740-524-4904

Certified soil scientists who may be available to do soil evaluations in Shelby County

Baker, Joe	Baker Soil Services, Inc.	3152 N. 100W	Decatur, IN 46733	260-724-2144	
Bauder, James R.	JR Bauder, Inc.	6106 Armistice Ave.	NW Canton, OH 44718	330-499-1688	jbauder@sssnet.com
Braug, William H.		6365 Byres Rd. NE	New Philadelphia, OH	330-343-9570	winridge@bright.net
Bureau, Marvin F.		241 Ihrig Avenue	Wooster, OH 44691	330-264-5861	JRawingsB@aol.com
Calhoun, Frank G.	School of Natural Resources	116A Williams Hall OARDC	Wooster, OH 44691	330-263-3722	calhoun.2@osu.edu
Hamilton, Stephen		6702 Haggerty Rd.	Hillsboro, OH 45133	937-393-8239	soilsteve@yahoo.com
Houser, Todd A.		2781 Wadsworth Rd.	Norton, OH 44203	330-706-9227	
Kelley, Glenn E.		1569 Wellesley Dr. S	Lexington, KY 40513	606-233-9947	
Kerr, James W.		47425 Uninvale Road	Cadiz, OH 43907	740-942-3196	
Mapes, D. Rex	Mapes Soil Investigations	41 Highmeadows Circle	Powell, OH 43065	740-548-6788	Digger2076@aol.com
Martin, Neal H.	Terra Firma Soil Investigation	308 Bellevue St.	Marietta, OH 45750	740-376-7266	terrafirma57@yahoo.com
McCleary, Floyd E.		2360 Allyson Dr. SE	Warren, OH 44484	330-544-5227	
McGee, Shaw	Hull & Associates	3401 Glendale Ave., Ste 300	Toledo, OH 43416	419-385-2018	www.hullinc.com
Milliron, Larry E.		3807 St. Nicholas Dr.	Richfield, OH 44286	330-659-4692	
Parkinson, Robert		4295 Hairborough Rd.	Columbus, OH 43220	614-486-6509	
Petruzzi, William	Hull & Associates	3401 Glendale Ave., Ste 300	Toledo, OH 43416	419-385-2018	www.hullinc.com
Prebonick, Steve		134 Miles Avenue NW	Warren, OH 44484	330-847-2803	
Roth, Linn		370 Fork Rd., SE	New Philadelphia, OH	330-308-8665	
Rubel, Neil		45021 Belmont Center Rd.	Belmont, OH 43718	614-686-2153	
Sasowsky, Kathryn		379 Bittersweet Rd.	Akron, OH 44333	330-670-0455	
Schoen, Fred	CTL Engineering, Inc.	102 Commerce Drive	Wapakoneta, OH 45895	419-738-1447	
Steiger, Joseph		3940 Dorothy Drive	Zanesville, OH 43701	740-454-3734	
Tornes, Larry A.		811 St. Rt. 61N	Sunbury, OH 43074	740-965-3254	
Wenning, Dennis		12160 Brown Road	Wapakoneta, OH 45895	419-738-7223	
Williams, Norris L.		5138 Clark Road	Middlefield, OH 44062	440-693-4354	
Zimmerman, Tom L.		2410 Oil City Road	Wooster, OH 44691	330-264-5521	

