

ARTICLE 6. SANITARY ENGINEERING

Rule 8.3. Residential On-Site Sewage Systems

410 IAC 6-8.3-3.1 "Absorptive surface" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 3.1. "Absorptive surface" means the interface where effluent distributed into a soil absorption field infiltrates into native soil. *Indiana Department of Health; 410 IAC 6-8.3-3.1*

410 IAC 6-8.3-4.1 "Application" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 4.1. "Application" means a written request from a person to the local health department for the issuance of a construction or operating permit.

410 IAC 6-8.3-5.1 "Base flood elevation" or "BFE" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 5.1. "Base flood elevation" or "BFE" means the elevation of surface water resulting from a flood for which there is a one percent (1%) probability of equaling or exceeding that level in any given year as calculated by a method and procedure that is approved by the Indiana natural resources commission. The base flood elevation is also referred to as the regulatory flood elevation or 100-year flood elevation. *(Indiana Department of Health; 410 IAC 6-8.3-5.1*

410 IAC 6-8.3-6 "Bedroom" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 6. "Bedroom" means either any room in a residence that meets one or both of the following:

(1) in a residence that the local health department and the owner agree The room could be occupied for the purpose of sleeping and contains:

(A) an area of seventy (70) square feet or more;

(B) at least one (1) operable window or exterior door for emergency egress or rescue; and

(C) for new construction, a closet; or

Rooms labeled as bedrooms, dens, studios, offices, libraries, craft rooms, bonus rooms, or similar shall be considered a bedroom, if they meet the requirements in this subsection. Rooms that serve the function of a bathroom, kitchen, closet, foyer, pantry, laundry room, furnace room, utility room, living room, family room, or dining room shall not be considered bedrooms.

(2) The room is declared by the owner, by recorded affidavit supplied to the local health department, that will be occupied for sleeping, and that the owner further agrees within the affidavit not to occupy any additional rooms for the purpose of sleeping or otherwise represent to others that any room, beyond the number specified in the affidavit, may be utilized for sleeping without written approval of the local health department. The recorded affidavit must reference the instrument number of the original deed to which it is attached.

(Indiana Department of Health; 410 IAC 6-8.3-6; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-7 "Bedroom equivalent" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 7. "Bedroom equivalent" **has the meaning set forth in IC 16-41-25-0.4.** means any jetted bathtub with a capacity of greater than one hundred twenty five (125) gallons. (Indiana Department of Health; 410 IAC 6-8.3-6; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-7.1 "Certified individual" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 7.1. "Certified individual" means an individual meets the requirements of section 51.5(b). (Indiana Department of Health; 410 IAC 6-8.3-7.1)

410 IAC 6-8.3-7.2 "Cesspool"

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 7.2. "Cesspool" means a relatively shallow underground reservoir that allows water to seep out of the sidewalls. A cesspool is typically not preceded by a septic tank. (Indiana Department of Health; 410 IAC 6-8.3-7.2)

410 IAC 6-8.3-7.3 "Combination tank" or "combo tank" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 7.3. "Combination tank" or "combo tank" means a single tank constructed with two compartments. The first compartment is used as a septic tank for primary treatment, and the second compartment is used as a dosing tank and houses an effluent pump. A combination tank is designed and constructed differently than a two-compartment septic tank.

(Indiana Department of Health; 410 IAC 6-8.3-7.3)

410 IAC 6-8.3-8 "Commissioner" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 8. "Commissioner" means the commissioner of the department or his or her the commissioner's legally authorized representative. (Indiana Department of Health; 410 IAC 6-8.3-8; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-9 "Construction permit" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 9. "Construction permit" means written approval by a local health department for the installation, repair, or replacement, alteration, or abandonment of a residential on-site sewage system or for the installation of a sanitary vault privy. (Indiana Department of Health; 410 IAC 6-8.3-9; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-9.1 "Contour" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 9.1. "Contour" means an imaginary line on the ground surface, all points of which are at the same elevation. A contour line joins points of equal elevation. (Indiana Department of Health; 410 IAC 6-8.3-9.1)

410 IAC 6-8.3-12 "Design daily flow" or "DDF" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 12. "Design daily flow" or "DDF" **has the meaning set forth in IC 16-41-25-0.4(b)** means the calculated peak daily sewage flow from a residence used to design a residential on-site sewage system. It is one hundred fifty (150) gallons per day times the number of bedrooms and bedroom equivalents. (*Indiana Department of Health; 410 IAC 6-8.3-12; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-12.1 "Designer" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 12.1. "Designer" means an individual who designs and submits detailed on-site sewage system construction plans to the local health department for review as part of a construction permit application. (*Indiana Department of Health; 410 IAC 6-8.3-12.1*)

410 IAC 6-8.3-12.2 "Dispersal area" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 12.2. "Dispersal area" means an area located immediately adjacent to a soil absorption field, located where water, after treatment in the soil, would move unimpeded away from the soil absorption field in a divergent or linear manner, used to protect and allow the soil absorption field to accept more effluent for treatment. (*Indiana Department of Health; 410 IAC 6-8.3-12.2*)

410 IAC 6-8.3-13 "Distribution box" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 13. "Distribution box" means a structure designed to distribute effluent by gravity from a septic tank, **dosing tank, or treatment unit equally into the trenches of the soil absorption system connected thereto.** (*Indiana Department of Health; 410 IAC 6-8.3-13; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-13.1 "Drywell" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 13.1. "Drywell" means a subsurface excavation, typically reinforced along the outer walls with brick, blocks, metal, or precast concrete and may contain aggregate in the interior of the lining. A drywell is often bottomless. A drywell may or may not be preceded by a septic tank and is usually deeper than thirty-six (36) inches. Sewage is allowed to seep out of the sidewalls and bottom of the drywell. (*Indiana Department of Health; 410 IAC 6-8.3-13.1*)

410 IAC 6-8.3-15 "Dwelling" or "residence" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 15. "Dwelling" or "residence" means any house or place used or intended to be used as a place of seasonal or permanent human habitation or for sleeping for one (1) or two (2) families, and any associated outbuildings that are for the private use of the owner. (*Indiana Department of Health; 410 IAC 6-8.3-15; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA*)

readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-15.1 “Effluent” defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 15.1. “Effluent” means the liquid portion of sewage that has been primarily treated in the septic tank. (Indiana Department of Health; 410 IAC 6-8.3-15.1)

410 IAC 6-8.3-15.2 “Evaluator” defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 15.2. “Evaluator” means an individual who assesses an on-site sewage system and records observations and performance of the system. (Indiana Department of Health; 410 IAC 6-8.3-15.2)

410 IAC 6-8.3-15.3 “Expansive clay” defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 15.3 “Expansive clay” means soils with clay minerals formed by the bonding together of one octahedral sheet of alumina between two tetrahedral sheets of silica, also known as 2:1 clay minerals. The 2:1 clay minerals have the potential for large volume changes related directly to changes in soil moisture content. When wet, 2:1 clay minerals swell, and when dry, 2:1 clay minerals shrink. Examples of expansive clay mineralogy which might be found in Indiana include smectites, vermiculites, and illites. (Indiana Department of Health; 410 IAC 6-8.3-15.3)

410 IAC 6-8.3-16 "Fill" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 16. "Fill" or “fill soil” has the meaning set forth in IC 16-41-25-1(b) means soil transported and deposited by man, as well as soil recently transported and deposited by natural erosion forces. Fill is evidenced by one (1) or more of the following:

- (1) No soil horizons or indistinct soil horizons.
- (2) Depositional stratification.
- (3) Presence of a soil horizon that has been covered.
- (4) Materials in a horizon such as cinders or construction debris.
- (5) Position in the landscape.

(Indiana Department of Health; 410 IAC 6-8.3-16; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-16.1 “Fixed reference point” defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 16.1. “Fixed reference point” means a permanent location that is readily identifiable from which measurements can be taken in order to describe the location of soil borings or soil pits and must be in place until the completion of the project. (Indiana Department of Health; 410 IAC 6-8.3-16.1)

410 IAC 6-8.3-16.2 “Flood dosed” defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 16.2. "Flood dosed" means dosing the soil absorption field with one dose per day equal to the DDF. The effluent is pressurized to the point of discharge into a distribution box and flows by gravity through the soil absorption field. *(Indiana Department of Health; 410 IAC 6-8.3-16.2)*

410 IAC 6-8.3-17.1 "Fragic characteristics"

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 17.1. "Fragic characteristics" means soil that has the essential properties of fragipan but may lack the layer thickness, volume requirements, and structural unit separations of a true fragipan. When soil water is at or near field capacity, fragic soils have a firm or firmer rupture-resistance class, a brittle manner of failure, and restrict the entry of roots into the matrix. *(Indiana Department of Health; 410 IAC 6-8.3-17.1)*

410 IAC 6-8.3-18.1 "Holding tank" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 18.1 "Holding tank" means a septic tank(s) or a combination of septic and dosing tanks, for which the outlet of the last tank in series has been sealed off in order to prevent sewage or effluent discharge from any tank. *(Indiana Department of Health; 410 IAC 6-8.3-18.1)*

410 IAC 6-8.3-18.2 "High Strength Waste" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 18.2. "High Strength Waste" means either of the following as defined by the National Sanitation Foundation International (NSF) Standard 40 testing protocol:

- (1) Influent to a septic tank or other pretreatment component having any or all of the following:
 - (A) A five (5) day biochemical oxygen demand (BOD5) greater than three hundred (300) mg/L.
 - (B) Total suspended solids (TSS) greater than two hundred (200) mg/L.
 - (C) Fats, oils, and grease (FOGs) greater than fifty (50) mg/L.

- (2) Effluent from a septic tank or other pretreatment component discharged to a soil absorption field having any or all of the following:

- (A) A BOD5 greater than one hundred seventy (170) mg/L.
- (B) TSS greater than sixty (60) mg/L.
- (C) FOGs greater than twenty-five (25) mg/L.

(Indiana Department of Health; 410 IAC 6-8.3-18.2)

410 IAC 6-8.3-18.3 "IAPMO" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 18.3. "IAPMO" means the International Association of Plumbing and Mechanical Officials. *(Indiana Department of Health; 410 IAC 6-8.3-18.3)*

410 IAC 6-8.3-19.1 "Inspection port" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 19.1. "Inspection port" means a vertical pipe installed in a soil absorption field at the absorptive surface which can be opened at the ground surface to observe the soil absorption field function. *Department of Health; 410 IAC 6-8.3-19.1)*

410 IAC 6-8.3-19.2 "Installer" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 19.2. "Installer" means any individual who performs any work in direct furtherance of construction, installation, replacement, alteration, or repair of any residential on-site sewage system that is subject to the provisions of this rule. (Department of Health; 410 IAC 6-8.3-19.2)

410 IAC 6-8.3-20.1 "Involuntary" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 20.1. "Involuntary" means a need to modify or improve a dwelling or residential outbuilding due to factors outside of the owner's control, such as destruction by wind, fire, flood, or other natural disaster, or due to condemnation of a dwelling. (Indiana Department of Health; 410 IAC 6-8.3-20.1)

410 IAC 6-8.3-20.2 "Limiting layer" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 20.2. (a) "Limiting layer" means a soil horizon that restricts suitability of a site for an on-site sewage system and/or restricts the depth of installation of an on-site sewage system. A limiting layer can be a restrictive soil horizon, a poor filter, or a seasonal high water table that cannot be amended to the appropriate depth.

(b) A restrictive limiting layer is a soil horizon:

(1) with a soil loading rate less than twenty-five hundredths (0.25) gpd/ft²;

(2) developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(A) the on-site soils evaluation report shows that the presence of the soil horizon is not detrimental to the proper functioning of an on-site sewage system; and

(B) the determination in clause (A) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department; or

(3) with slickensides two (2) inches or larger in any dimension.

(c) A poor filter limiting layer is a soil horizon with:

(1) a soil loading rate greater than seventy-five hundredths (0.75) gpd/ft² for a gravity fed or flood dosed subsurface trench on-site sewage system;

(2) a soil loading rate greater than one and twenty-hundredths (1.20) gpd/ft² for any type of on-site sewage system;

(3) with less than twenty percent (20%) clay by volume and greater than thirty-five percent (35%) coarse fragments by volume; or

(4) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume.

(Indiana Department of Health; 410 IAC 6-8.3-20.2)

410 IAC 6-8.3-26 "Owner" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 26. "Owner" means the owner of a person who owns real estate a dwelling or his or her the owner's agent. (Indiana Department of Health; 410 IAC 6-8.3-26; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-27.1 "Permittee" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 27.1. "Permittee" means a person who is the owner of real estate, or the person's agent, and is responsible for the application for a construction or operating permit and for the acceptance of notices at the address listed on the permit application. (Indiana Department of Health; 410 IAC 6-8.3-27.1)

410 IAC 6-8.3-28.1 "Premises" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 28.1. "Premises" means a lot, plot, or parcel of land, including the buildings thereon. (Indiana Department of Health; 410 IAC 6-8.3-28.1)

410 IAC 6-8.3-28.3 "Pressure distribution" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 28.3. "Pressure distribution" means using an effluent pump to distribute effluent under pressure throughout the entire soil absorption field. (Indiana Department of Health; 410 IAC 6-8.3-28.3)

410 IAC 6-8.4-29.1 "Registered individual" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 29.1 "Registered Individual" means an individual who has applied to a local health department to be recorded on a list of Registered Individuals and is placed on the list by the local health department. (Indiana Department of Health; 410 IAC 6-8.3-29.1)

410 IAC 6-8.3-32 "Residential on-site sewage system" or "on-site sewage system" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 32. "Residential on-site sewage system" or "on-site sewage system" has the meaning set forth in IC 16-41-25-0.4(a) and means all equipment and devices necessary for proper conduction, collection, storage, treatment, and on-site disposal of sewage from:

(1) a one (1) or two (2) family dwelling;

(2) a residential outbuilding; or

(3) two (2) single family dwellings on the same property with a combined DDF of less than or equal to seven hundred fifty (750) gallons per day.

The term includes, but is not limited to, residential sewers, grease traps, septic tanks, secondary treatment units, dosing tanks, effluent pumps, distribution boxes, soil absorption systems, subsurface drainage systems, dispersal areas, temporary sewage holding tanks, and sanitary vault privies. The term also includes any miscellaneous components as may be required to ensure proper operation and function of the system as described in this rule.

(Indiana Department of Health; 410 IAC 6-8.3-32; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-33 "Residential on-site sewage system failure" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 33. "Residential on-site sewage system failure" means a residential on-site sewage system that exhibits one (1) or more of the following:

- (1) The on-site sewage system refuses to accept sewage at the rate of design application thereby interfering with the normal use of residential plumbing fixtures.
- (2) Effluent discharge exceeds the absorptive capacity of the soil, resulting in ponding, seepage, or other discharge of the effluent to the ground surface or to surface waters.
- (3) Effluent is discharged from the on-site sewage system causing contamination of a potable water supply, ground water, or surface waters.
- (4) A dwelling or residential outbuilding not connected to sanitary sewer which does not have a septic tank and/or a soil absorption field.**

(5) Sewage or effluent discharged to a drywell or cesspool.

A failed residential on-site sewage system is a **public health hazard**. (*Indiana Department of Health; 410 IAC 6-8.3-33; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-33.1 "Residential on-site sewage system malfunction" or "malfunction" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 33.1. "Residential on-site sewage system malfunction" or "malfunction" means a residential on-site sewage system component that is not functioning in accordance with this rule or per manufacturers' requirements. Residential on-site sewage system malfunction does not have to meet the definition of residential on-site sewage system failure. Malfunction may include, but is not limited to, one (1) or more of the following:

- (1) The backup of sewage into an upstream on-site sewage system component;
- (2) The liquid level in a septic tank above the invert of the septic tank outlet;
- (3) An outlet filter that is plugged sufficiently to cause backup in the septic tank;
- (4) The liquid level in a dosing tank above the invert of the dosing tank inlet;
- (5) The liquid level in a treatment unit above that recommended by the manufacturer;
- (6) The liquid level in a distribution box consistently above the invert of the outlets or a distribution box that does not provide equal distribution;
- (7) Structural failure of a septic tank, dosing tank, treatment unit, distribution box, or other component required for proper operation;
- (8) Electrical failure of a float or transducer, an effluent pump, alarm, or other electrical component of an on-site sewage system, or
- (9) Removal of an effluent pump or a system component if that pump or component was required in the original permit. (*Indiana Department of Health; 410 IAC 6-8.3-33.1*)

410 IAC 6-8.3-35.1 "Sampling port" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 35.1. "Sampling port" means a vertical pipe installed in a subsurface drainage system which can be opened at the ground surface to collect a sample of water for analysis. (*Indiana Department of Health; 410 IAC 6-8.3-35.1*)

410 IAC 6-8.3-39 "Segment drain" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 39. "Segment drain" means a subsurface drainage system constructed between two (2) soil absorption fields in the same on-site sewage system for the purpose of **lowering a seasonal high-water table and intercepting and diverting subsurface water away from the downslope soil absorption field.** (*Indiana Department of Health; 410 IAC 6-8.3-39; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-40 "Septic tank" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 40. "Septic tank" means a watertight structure into which sewage is discharged for settling and **anaerobic solids** digestion. (*Indiana Department of Health; 410 IAC 6-8.3-40; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.4-40.5 "Service provider" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 40.5. "Service provider" means an individual who meets the minimum requirements set by the local health department for providing evaluation and maintenance of an on-site sewage system under the provisions of this rule.

410 IAC 6-8.3-41 "Sewage" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 41. "Sewage" means all water-carried waste derived from ordinary living processes. **Sewage includes black water and grey water.** (*Indiana Department of Health; 410 IAC 6-8.3-41; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-41.1 "Slickenside" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 41.1. "Slickenside" means, as described in the **Illustrated Guide to Soil Taxonomy**, polished and grooved features on subsoil structural surfaces that are produced as one soil mass slips past another. The soil masses move because of shear failure due to significant shrinking and swelling caused by wetting and drying cycles. Slickensides are only found in soils with high contents of swelling clay minerals (smectite) that are subject to at least periodic wetting and drying. (**Citation: Soil Survey Staff. 2015. Illustrated guide to soil taxonomy. U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.**) (*Indiana Department of Health; 410 IAC 6-8.3-41.1*)

410 IAC 6-8.3-42 "Soil absorption" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 42. "Soil absorption" means a process that utilizes the soil to treat and disperse effluent from a **septic tank**. (*Indiana Department of Health; 410 IAC 6-8.3-42; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-43 "Soil absorption system" or "soil absorption field" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 43. "Soil absorption system" or "soil absorption field" means pipes or chambers laid in a system of subsurface trenches or pipes laid in elevated beds into which the effluent from the septic tank is discharged into the soil for treatment and dispersal **and also includes those components, such as distribution boxes, effluent sewers, and pressure manifolds, used to distribute the effluent equally into the trenches or elevated sand mound.**

(*Indiana Department of Health; 410 IAC 6-8.3-43; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA*;

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410 IAC 6-8.3-43.1 "Soil boring"

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 43.1. "Soil boring" means an excavation made by a soil auger, probe, or similar small diameter drilling equipment used to pull multiple shallow soil cores out of the ground which are used for providing a description of soil horizons. (Indiana Department of Health; 410 IAC 6-8.3-43.1)

410 IAC 6-8.3-44 "Soil horizon" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 44. "Soil horizon" means a layer of soil or soil material approximately parallel to the land surface and differing from adjacent genetically related layers in physical, chemical, and biological properties or characteristics such as:

- (1) color;
- (2) structure **including grade, shape, and size**;
- (3) texture, **including grade, shape, and size**;
- (4) consistence;
- (5) kinds and numbers of organisms present; and
- (6) degree of acidity or alkalinity.

(Indiana Department of Health; 410 IAC 6-8.3-44; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-45.1 "Soil pit" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 45.1. "Soil pit" means an excavation made by a backhoe, excavator, or similar equipment, for the soil scientist to observe and describe the undisturbed wall of the pit to provide a description of the soil profile. (Indiana Department of Health; 410 IAC 6-8.3-45.1)

410 IAC 6-8.3-46 "Soil profile analysis" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 46. "Soil profile analysis" means the observation and evaluation of the physical characteristics of the soil horizons or layers, to:

- (1) a depth of at least five (5) feet; or
- (2) if shallower, a layer that cannot be readily penetrated.

(Indiana Department of Health; 410 IAC 6-8.3-46; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-47 "Soil scientist" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4; IC 25-31.5

Sec. 47. "Soil scientist" has the meaning set forth in IC 25-31.5-1-7. means an individual registered as a professional soil scientist (RPSS) with the Indiana Registry of Soil Scientists (IRSS) as provided for under IC 25-31.5. (Indiana Department of Health; 410 IAC 6-8.3-47; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-49 "Subsurface drainage system" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 49. "Subsurface drainage system" means any pipe with or without a layer of gravel, stone, or coarse sand, placed below the surface of the ground and designed or constructed in such a manner as to:

- (1) effectively lower a seasonal high water table; or
- (2) prevent movement of subsurface water into a soil absorption system site.

Interceptor drains, Perimeter drains and segment drains are types of subsurface drainage systems. (*Indiana Department of Health; 410 IAC 6-8.3-49; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-49.1 "Subsurface soil absorption trench" or "subsurface trench" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 49.1. "Subsurface soil absorption trench" or "subsurface trench" means an excavation that is a minimum of eighteen (18) inches to a maximum of thirty-six (36) inches wide and a minimum of ten (10) inches deep into which aggregate and pipe or chambers are placed to assist in distribution of effluent to the underlying soil for treatment and dispersal. (*Indiana Department of Health; 410 IAC 6-8.3-49.1*)

410 IAC 6-8.3-50.1 "Temporary Benchmark" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 50.1 "Temporary Benchmark" means any object whose elevation is assumed arbitrarily and is used as a point of reference until completion of the project. (*Indiana Department of Health; 410 IAC 6-8.3-50.1*)

410 IAC 6-8.3-50.2 "Two-compartment septic tank" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 50.1. "Two-compartment septic tank" means a watertight structure into which sewage is discharged for settling and anaerobic digestion which is split into two compartments by a divider wall. (*Indiana Department of Health; 410 IAC 6-8.3-50.2*)

410 IAC 6-8.3-50.3 "Upgraded Pipe" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 50.2 "Upgraded pipe" means pipes that meets the specifications in section 67(b) of this rule.

(*Indiana Department of Health; 410 IAC 6-8.3-50.3*)

410 IAC 6-8.3-50.4 "Voluntary" defined

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 50.3. "Voluntary" means an owner's intentional or deliberate action to modify or improve a dwelling or residential outbuilding.

(*Indiana Department of Health; 410 IAC 6-8.3-50.4*)

410 IAC 6-8.3-51 Administrative authority

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 51. (a) This rule shall be administered by the local boards of health through their health officer and ~~his or her~~ the health officer's authorized representatives.

(b) *[Voided by P.L. 167-2022, SECTION 16, effective July 1, 2022.]*

(c) Each local health department residential on-site sewage system permit program is subject to review by the department. Such review may include, but not be limited to, a review of the permits issued, supporting documentation, and a review of on-site sewage system installations.

(d) The department, its agent, or the health officer or ~~his or her~~ the health officer's agent shall be permitted to enter upon all ~~properties~~ premises at the proper time for the following purposes necessary to achieve compliance with this rule:

- (1) Inspection.
- (2) Observation.
- (3) Measurement.
- (4) Sampling.
- (5) Testing.

(e) This subsection applies to on-site sewage system technologies new to Indiana that have been approved by a technical review panel under IC 16-19-3-27.5 or by the department. The department may delegate, in writing, to a specific person or persons at a local health department, the plan review, approval, permit issuance, and inspection for residential on-site sewage systems that incorporate technologies new to Indiana when the local health department complies with the requirements of the department for plan review, approval, and permit issuance. Permit issuance and/or inspection of the permitted system may be done by others under the guidance of the specified person(s). The department may revoke, in writing, such delegation when a local health department fails to comply with the requirements of the department for plan review, approval, and permit issuance. Local health departments may review plans and issue permits based on delegation when the department has designated which on-site sewage system technologies new to Indiana are delegated to the local health department for plan review, approval, and permit issuance.

(f) Before a local health department can require compliance with the permissive sections of this rule in a local jurisdiction, the local health department must:

- (1) submit a justification that explains the reasons the permissive section is needed based on the conditions affecting onsite systems in the local health department's jurisdiction;
- (2) receive the written approval of the state department; and
- (3) have a local ordinance that adopts the permissive section.

A local health department seeking require compliance with a permissive requirement that was not enforced in the local jurisdiction prior to June 30, 2023, must include an explanation of the changed circumstances since June 30, 2023, that justify enforcement.

(g) Before approving a request in subsection (f), the state department must consult with the following group:

- (1) A local health department environmental specialist from a county other than the county making the request.
- (2) An Indiana professional engineer registered under IC 25-31-1 representing the American Council of Engineering Companies.
- (3) A representative of the Indiana Builders Association.
- (4) An Indiana registered professional soil scientist (as defined in IC 25-31.5-1-6) representing the Indiana Registry of Soil Scientists.

(5) A representative of an Indiana college or university with a specialty in engineering, soil science, environmental health or biology.

(6) A representative of the Indiana Onsite Wastewater Professional Association.

(7) An Indiana onsite sewage system contractor.

(8) A representative of the Indiana State Building and Construction Trades Council.

(h) A local health department requiring any of the permissive sections of this rule that complies with subsection (f) is not contravening the limitation imposed by IC 16-41-25-6.

(i) This rule does not require existing onsite sewage systems to comply with updates to this rule subsequent to the system's installation, except to the extent necessary to fix a malfunction or failure.

(Indiana Department of Health; 410 IAC 6-8.3-51; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-51.5 Professional standards

Authority: IC 16-19-3-4
Affected: IC 16-19-3-4

Sec. 51.5. (a) All installers, designers, evaluators, and service providers, whether or not required to be registered or certified individuals, shall abide by all associated requirements in state statutes, rules, and local ordinances regarding onsite sewage systems.

(b) A local health department may establish a program to require registration and/or certification by any onsite system installer, designer, evaluator, and/or service provider. A local health department may require a certified individual to maintain bonding or insurance.

(1) If a local health department has a program to register and/or certify individuals, the local health department shall require any onsite system installer, designer, evaluator, or service provider to be a registered individual and/or a certified individual in the county, multi-county, or city in which they install, repair, replace, alter, abandon, design, evaluate or service onsite sewage systems, sewage holding tanks, and sanitary vault privies.

(2) If a local health department has a program to certify individuals, certified individuals must pass a written proficiency examination regarding proper evaluation, installation, service, and/or repair/replacement/alteration of onsite sewage systems and attend all required local health department training sessions, both of which must be conducted by the local health department, or an entity approved by the local health department. The certified individual shall maintain certification through retesting or continuing education as required by the local health department.

(A) Evaluators should have sufficient experience and training to identify system compliance specified in the rule in effect at the time of the system permitting as well as any onsite sewage system failure or malfunction.

(B) Service providers shall be proficient in the design, operation, testing, maintenance, performance standards, and any operating permit issued by the local health department for the onsite sewage system for which they are to provide evaluation, testing, and maintenance.

410 IAC 6-8.3-52 General sewage disposal requirements

Authority: IC 16-19-3-4
Affected: IC 16-19-3-4

Sec. 52. (a) No person shall throw, run, drain, seep, or otherwise dispose into any of the surface waters or ground waters of this state, or cause, permit, or suffer to be thrown, run, drained, allowed to seep, or otherwise disposed into such waters, any organic or inorganic matter from a dwelling or residential on-site sewage system that would cause or contribute to a health hazard or water pollution.

(b) The:

- (1)** design;
- (2)** construction;
- (3)** installation;
- (4)** location;
- (5)** maintenance; and
- (6)** operation;

of residential on-site sewage systems shall comply with the provisions of this rule.

(c) A cesspool or a drywell, with or without a septic tank, is not a suitable means of residential sewage disposal.

(d) The local health department shall require any dwelling, duplex, or residential outbuilding to be connected to a municipal-owned, district-owned, private utility, or not-for-profit sanitary sewer if:

- (1)** there is an available sanitary sewer within three hundred (300) feet of the property line of the affected property;
- (2)** the local health department has given notice by certified mail to the property owner, at least ninety (90) days before the date specified for connection in the notice; and
- (3)** the sanitary sewer is available for connection at a construction cost and connection fee estimated by the local health department not to exceed one hundred fifty percent (150%) of the cost estimated by the local health department for installing a residential on-site sewage system to serve the dwelling, duplex, or residential outbuilding.

Upon connection to sanitary sewer, the owner shall abandon the on-site sewage system or other components previously

used for sewage disposal in compliance with section 90 of this rule.

(f) The local health department may require a set aside area be located and identified for a secondary residential on-site sewage system to secure an area for a replacement system on all new construction sites in the event the primary system should fail.

(1) The set aside area shall be:

- (A) evaluated by a soil scientist as described in section 56 of this rule;
- (B) suitable for a type of on-site sewage system described in this rule or approved TNI;
- (C) of adequate size to accommodate a full-sized replacement soil absorption field, including any required drainage and dispersal area, placed along the contour;
- (D) protected from disturbance for the life of the primary system; and
- (E) documented as an easement, or a declaration of on-site sewage system easement if both properties are owned by the same person, on the property deed for newly created parcels.

(2) For lots platted prior to the effective date of this rule, a set aside area must be identified, if possible. If a suitable set aside area is not available on the property platted prior to the effective date of this rule, the local health department shall not deny a permit based solely on the lack of a secondary set aside area.

(3) If sewer connection is not required as in subsection (c) above, an agreement to connect to an available sanitary sewer can be used in place of a suitable set aside area for any property requiring a set aside area.

(e) (g) All residential on-site sewage systems utilizing sanitary privies shall conform to department bulletin SE 11, "The Sanitary Vault Privy", 1986 2021 Edition.

(d) (h) Any dwelling that is not connected, or cannot be connected, to a sanitary sewerage system shall be provided with a residential on-site sewage system that includes a septic tank and a soil absorption system that has not failed. The local health department shall allow a dwelling without interior plumbing, including fixtures, water lines, waste collection piping, and/or residential drains, to be served only by a sanitary vault privy that conforms to department bulletin SE 11, "The Sanitary Vault Privy", 2021 Edition.

(1) All sewage, as defined in section 41, generated in a residence or a residential outbuilding shall be discharged to an on-site sewage system that has not failed.

(2) All septic tank effluent including effluent from tanks fitted with aeration units for aerobic digestion shall discharge into a soil absorption system or other treatment system as approved in accordance with section 52 of this rule.

(3) Water softener backwash shall be discharged to:

- (1) the building sewer;
- (2) a secondary treatment device;
- (3) the effluent sewer on the downstream side of either the septic tank or the secondary treatment device;
- (4) the dosing tank serving the soil absorption system; or
- (5) a separate soil absorption system constructed specifically for the water softener backwash. A soil absorption field receiving wastewater from a water softener only is not required to be preceded by a septic tank.

(e) A temporary sewage holding tank is an alternative method of sewage disposal subject to the written approval of the department, except as provided in subsection (f). A temporary sewage holding tank shall not be used as a primary means of residential sewage disposal except:

(1) where necessary to prevent continued discharge of sewage from a failed existing residential on-site sewage system;

(2) when soil conditions exist that preclude the prompt construction of a soil absorption system on a site that has already received a construction permit; or

(3) where the holding tank is operated by a conservancy district, sewer district, private utility, or municipality as a part of its sewage disposal plan; or

(4) for not more than one (1) year while connection to sanitary sewer is being secured. This one (1) year time frame may be extended upon documentation of satisfactory operation of the holding tank.

(5) The local health department shall require:

(A) an inspection of the temporary holding tank to confirm proper installation and to confirm the outlet of the last tank has been appropriately sealed prior to backfilling; and

(B) a high water alarm to be installed, wired in by an electrician, and verified operation, in the last tank in series.

(f) A temporary sewage holding tank may be approved by the local health department:

(1) as a temporary storage facility where occupancy of the home must continue while an existing residential on-site

~~sewage system is being replaced or renovated; or~~

~~(2) until soil conditions permit the installation of a soil absorption system for which a construction permit has been issued.~~

~~(g)~~ If any condition(s) precludes the installation of a residential on-site sewage system as described in this rule, the local board of health ~~may~~ shall not approve the use of any other residential on-site sewage system technology unless written approval from the department is:

- (1) issued, under subsection (h), ~~for to~~ a local health departments giving approval for the ~~to issue~~ issuance of construction permits for the use of the technology; or
- (2) obtained for specific applications.

~~(h)~~ In order to permit development of new or more efficient sewage treatment or disposal processes, the department may approve the installation of experimental and TNI equipment, facilities, or pollution control devices for which extensive experience or records of use have not been developed in Indiana. The applicant for such approval must submit evidence of sufficient clarity and conclusiveness to convince the department that the proposal has a reasonable and substantial probability of satisfactory operation without failure.

~~(i)~~ No portion of the residential on-site sewage system or its associated drainage system shall be constructed upon property other than that from which the sewage originates unless ~~an~~ easements, ~~or a declaration of on-site sewage system easement if both properties are owned by the same person~~, which grants permission for such construction and access for system maintenance, ~~have~~ has been obtained for that property and ~~have~~ has been legally approved and recorded by the proper authority or commission.

~~(j)~~ Residential on-site sewage systems shall not be used for the disposal of water from:

- (1) roof drains;
- (2) foundation drains;
- (3) swimming pool main drains;
- (4) hot tub ~~or~~ spa drains; ~~or~~
- (5) area drains:;
- (6) floor drains;**
- (7) storm drains**
- (8) dehumidifiers;**
- (9) sump pumps;**
- (10) waste from RV holding tanks which contain formaldehyde, emulsifiers, or other chemicals that will disrupt the septic tank function;**
- (11) HVAC condensate drains; or**
- (12) any other water that is not sewage**

Neither shall they be used for the disposal of chemical wastes in quantities that would pollute ground water or inhibit solids settling or digestion in the septic tank.

~~(k)~~ Any jetted bathtub with a capacity of greater than one hundred twenty-five (125) gallons shall be treated as an extra bedroom ~~with a design daily flow of one hundred fifty (150) gallons per day~~ for the on-site sewage system sizing requirements of this rule. (Indiana Department of Health; 410 IAC 6-8.3-52; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Apr 9, 2014, 9:51 a.m.: 20140507-IR-410130350FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-53 Construction permits

Authority: IC 16-19-3-4; IC 16-41-25-1

Affected: IC 16-19-3-4

Sec. 53. (a) For any dwelling or ~~place of residence~~ residential outbuilding that is not or will not be connected to a sanitary sewerage system, the owner or agent of the owner shall obtain a written construction permit, ~~of the appropriate type listed below~~, signed by the health officer, ~~prior to the~~ for construction, repair, replacement, or alteration of a residential on-site sewage system ~~prior to the sanitary vault privy, sewage holding tank or system abandonment as specified below~~:

- (1) **A construction permit for new construction of an on-site sewage system shall be obtained prior to the:**
 - (A) start of construction of a ~~residence~~ dwelling;
 - (2) (B) placement of a manufactured home, modular home, or mobile home;
 - (3) (C) construction or placement of a residential outbuilding that will include plumbing, ~~or~~
 - (D) the addition of plumbing to an existing ~~residential~~ dwelling ~~or~~ outbuilding;

(4) (E) the voluntary replacement or reconstruction of any dwelling, place of residence, or residential outbuilding that includes plumbing, with or without a change in the DDF;

(5) (F) the involuntary replacement or reconstruction of any dwelling, place of residence, or residential outbuilding that includes plumbing with an increase in DDF;

(6) (G) the voluntary expansion or remodeling of a residence that may increases the number of bedrooms or the DDF;

7) addition to, alteration of, replacement of, or repair of an existing residential on-site sewage system; or

(8) installation of an on-site sewage system for an existing residence that did not previously have a residential on-site sewage system as defined in section 32 of this rule.

(H) the voluntary expansion of a soil absorption field without failure;

(I) the voluntary replacement, movement, or relocation of system component(s) or

(J) the addition of a second home, for a total DDF less than or equal to 750 gallons per day, to an existing system.

(2) A construction permit for the replacement of an on-site sewage system including a soil absorption field shall be obtained prior to the:

(A) replacement of a failed on-site sewage system for an existing dwelling or residential outbuilding;

(B) involuntary reconstruction or replacement of any dwelling or residential outbuilding that includes plumbing, if the DDF will be the same or less than the DDF of the previous structure;

(C) installation of an on-site sewage system for an existing dwelling or residential outbuilding that did not previously have a residential on-site sewage system as defined in section 57 of this rule;

(D) enlargement of a soil absorption field or remediation of an existing on-site sewage system, without an increase in the DDF, if proposed to correct a failing or malfunctioning on-site sewage system addition to, alteration of, replacement of, or repair of an existing residential on-site sewage system; or

(3) A construction permit for the repair of an on-site sewage system shall be obtained prior to the:

(A) repair or replacement of any defective or malfunctioning component of an existing on-site sewage system other than a soil absorption field; or

(B) repair of a soil absorption field without an expansion.

(4) A construction permit for the alteration of an on-site sewage system shall be obtained prior to the connection or reconnection of a dwelling or residential outbuilding to an existing residential on-site sewage system which has been determined to not be in failure or malfunctioning.

(5) A construction permit for a sanitary vault privy shall be obtained prior to the start of construction of a dwelling or residential outbuilding that will be served by the sanitary vault privy for the installation, or prior to the replacement or modification of a sanitary vault privy.

(6) A construction permit for the installation or modification of a sewage holding tank, shall be obtained prior to installation, unless the sewage holding tank is part of a permitted on-site sewage system included in one of the subsections above.

(7) A construction permit for the abandonment of a septic tank and/or an on-site sewage system shall be obtained prior to the tank or system abandonment, if abandonment is not covered under another construction permit issued for the site, and if the local health department has a program for permitting and inspecting abandoned systems.

(b) All construction permits shall be posted in a conspicuous place at the site and plainly visible from the road serving the dwelling and/or residential outbuilding until the project is completed.

(c) Unless an exception is granted under IC 16-41-25-5(d), the local health department may require any dwelling, duplex, or residential outbuilding to be connected to a municipal-owned, district-owned, private utility, or not-for-profit sanitary sewer if:

(1) there is an available sanitary sewer within three hundred (300) feet of the property line of the affected property;

(2) the local health department has given notice by certified mail to the property owner, at least ninety (90) days before the date specified for connection in the notice; and

(3) the sanitary sewer is available for connection at a construction cost and connection fee estimated by the local health department not to exceed one hundred fifty percent (150%) of the cost estimated by the local health department for installing a residential on-site sewage system to serve the dwelling, duplex, or residential outbuilding.

Upon connection to sanitary sewer, the owner shall abandon the on-site sewage system or other components previously used for sewage disposal in compliance with section 90 of this rule.

~~(b)~~ (d) A local health department shall not issue a construction permit for a new on-site sewage system or for the repair of an on-site sewage system or replacement of a soil absorption system using TNI without the written approval of the department, except for the provisions of section 52(g) of this rule.

(e) The local health department shall require a site approval and/or an inspection of any property proposing to construct or modify a structure or the property in a manner which may cause damage to or interfere with the proper functioning of an on-site sewage system, if requested by the local building and zoning department, for a site that would not otherwise require an on-site sewage system construction permit.

(f) The local health department shall provide comments and/or recommendations for survey and subdivision plat reviews, if requested by the local building or zoning department.

~~(e)~~ (g) The approval of a site by the local plan commission or the county recorder does not constitute approval by the local health officer.

(h) When site limitations and soil information for the site have been determined, the owner is responsible for a complete application for a construction permit and a residential on-site sewage system design that, in accordance with this rule:

- (1) addresses the demands of the site; and**
- (2) meets local health department approval in accordance with this rule.**

~~(d) (i) The application for Prior to the issuance of a construction permit, an application for a construction permit shall be made on a form provided by to the local health department. The A complete application shall contain, or include as attachments, the following:~~

- (1) A form provided by the local health department which includes information on the following:**
 - (A) The name, and address, and contact information of the property owner, and agent, if applicable.
 - (B) The address, if available, or the specific location of the property.
 - (C) The number of bedrooms and bedroom equivalents.
- (D) The inclusion of pumps, garbage grinders, water softeners, self-cleaning toilets, or other water using appliances that affect the wasteflow characteristics or volume from the dwelling in the residential plumbing.**
- (2) The location and type of water supply source to serve the dwelling or residential outbuilding.**
- (3) A floor plan of the home.**
- (4) A detailed list of components and materials to be included in the on-site sewage system.**
- (5) A plat or legal description of the property.**
- ~~(2) (6) The on-site soils evaluation, as outlined in section 56 of this rule, for the site where the residential soil absorption system is to be constructed.~~
- ~~(3) (7) Written plans of the site and residential on-site sewage system with sufficient clarity that it can be verified that the design of the residential on-site sewage system shall comply with the provisions of this rule. The plan shall provide the location and the elevation assigned to the temporary benchmark for the project. The local health department may require the design to be:~~
 - (A) scaled; and/or
 - (B) reviewed, approved, and stamped by a professional engineer, architect, or land surveyor.
- (8) A seeding and final soil cover material agreement for the on-site sewage system signed by the owner or applicant indicating that proper soil cover material, finish grading, and stabilization will be completed in compliance with this rule.**
- (4) (9) Any other information deemed necessary by the health officer.**

(j) The local health department may require:

- (1) a site visit and evaluation prior to issuing a construction permit; and**
- (2) the system components to be marked at the site, protected, and identified at the site prior to the site visit.**

(e) When site limitations and soil information for the site have been determined, the owner is responsible for the residential on-site sewage system design that:

- (1) addresses the demands of the site in accordance with this rule; and
- (2) will meet local health department approval.

(f) The local health department may require scale drawings of the site and residential on-site sewage system as part of the application process.

(g) (k) In accordance with IC 16-41-25-1(a), the local health department shall issue or deny, in writing to the owner, a residential on-site sewage system construction permit within forty-five (45) thirty (30) days of receipt of a complete application and plan submittal.

(l) An incomplete application for a construction permit shall expire two (2) years after submittal.

(m) The local health department shall set an expiration time for construction permit that does not exceed two (2) years.

(n) The local health department may require a pre-construction meeting with the system installer prior to the installation of the on-site sewage system for which a permit has been issued.

(o) The installer shall confirm that the soil in the area of the soil absorption field does not exceed its plastic limit prior to the start of installation of the soil absorption field. The local health department may require the installer to contact the local health department to inspect and verify that the plastic limit of the soil is not exceeded prior to the installation of the soil absorption field.

(p) No Construction on the residential on-site sewage system may shall not take place if the residential on-site sewage system soil absorption field site is disturbed or altered after the on-site evaluation by the addition of fill material (other than construction necessary for the residential on-site sewage system soil absorption field) or by cutting, scraping, compacting on, or the removal of soil, until a new on-site evaluation has been conducted and a modified construction permit has been issued.

(q) A soil absorption system replacement for a residential on-site sewage system shall meet or exceed the minimum provisions of this rule. When a replacement soil absorption system is necessary due to on-site sewage system failure, and if the replacement soil absorption system cannot meet all of the provisions of this rule, deviations to this rule for a soil absorption system replacement may be made in accordance with the best judgment of the local department of health department, based on the following:

(1) Best judgment of the local health department shall be based on the following:

- (A) Limitations of the site.
- (B) Written results of an evaluation of the operational status of all of the on-site sewage system components and probable reasons for system failure.
- (C) Written results of an on-site soils evaluation.

(D) The least deviations to this rule as possible

(2) Soil absorption system replacements for a residential on-site sewage system shall not be: utilizing best judgment may have trenches constructed to a maximum depth of forty-eight (48) inches below grade, if necessary, and if the site and soil conditions allow.

(3) Soil absorption system replacement for a residential on-site sewage system shall not be contrary to sections 52(a) and 60(h) of this rule; and

(2) constructed to a depth greater than forty-eight (48) inches below final grade in any portion of a subsurface soil absorption system.

(4) Deviations to this rule for soil absorption system replacement shall be identified and recorded on the construction permit issued for the replacement soil absorption field.

(r) In the case of a residential on-site sewage system failure, the local health department may require an approved aeration unit, in compliance with subsection (s), for aerobic digestion after the septic tank and prior to the soil absorption field, if high strength waste is confirmed or suspected to be a contributing factor to the failure. The aeration unit manufacturer shall confirm that the specified unit will reduce the waste strength below that of high strength waste. No sizing reduction for the septic tank or soil absorption field shall be allowed for the use of an aeration unit in this manner. The aeration unit may not be required if the homeowner agrees to an appropriate plan to reduce the waste strength in another manner.

(s) Tanks fitted with aeration units for aerobic digestion shall:

- (1) conform to NSF/ANSI Standard 40-2020, Residential Wastewater Treatment Systems, for Class I plants or to standards of an equivalent third party product testing laboratory acceptable to the department that meet or exceed the NSF/ANSI standards;**
- (2) bear a current registered certification mark;**
- (3) provide a minimum aerobic treatment capacity of one hundred fifty (150) gallons per bedroom per day;**
- (4) be preceded by a septic tank that meets all of the requirements of this section and sections 60, 62.3 and 63 of this rule; and**
- (5) discharge into a soil absorption system or other treatment system as approved in accordance with section 52(h) of this rule.**

~~(k)~~ **(t) If it is determined that the proposed on-site sewage system design does not meet the minimum requirements of this rule, the permit ~~may~~ shall be denied in accordance with section 55(e) of this rule. Replacement, repair, or alteration of an existing system shall be meet the minimum requirements of this rule, but only to the extent needed by the replacement, repair, or alteration.**

~~(k)~~ **(u) The permittee or the installer shall notify the health officer or ~~his or her~~ the health officer's designee when the work is ready for final inspection:**

- (1) using the procedure published by the local board of health; or**
- (2) at least forty-eight (48) hours or two (2) working days, and no less than forty-eight (48) hours, before any subsurface portions are to be covered if the local health board has not published inspection procedures.**

~~(m)~~ **(v) The construction permit for a residential on-site sewage system in violation of this section may be revoked by the health officer in accordance with section 55(e) of this rule.** Requirements of permits issued for the construction of residential on-site sewage systems shall not be considered as fulfilled until the installation is completed to the satisfaction of the health officer or ~~his or her~~ **duly the health officer's** authorized representative **after at least one site visit to verify the installation is in accordance with the approved plans and this rule.** The local health department shall require multiple inspections to assess installation, if deemed necessary by the local health department.

(w) The construction permit for a residential on-site sewage system in violation of this section shall be revoked by the health officer in accordance with section 55(f) of this rule.

~~(n)~~ **(x) Individual lots in subdivisions designed to utilize residential on-site sewage systems, for which the plats were approved by the local plan commission, county health department, or the county recorder, and recorded prior to December 21, 1990, are exempt from the provisions of sections 70(b)(8) and 72(b)(7) of this rule if the soils on the individual lot have characteristics that would allow the soil to be rated slight or moderate in accordance with guidelines as set forth in the soils manuals and handbooks of the NRCS. The soil absorption system to serve each lot that is exempted by this section shall meet the sizing criteria as follows:**

Permeability Rating	Square Feet Needed in Trench Bottom per Bedroom
2 in. to 6 in. per hour	250 square feet per bedroom
1 in. to 2 in. per hour	330 square feet per bedroom

~~(o)~~ **(y) Individual lots in subdivisions designed to utilize residential on-site sewage systems, the plats for which were approved by the local plan commission and recorded prior to December 21, 1990, will be granted an exemption by the department from the provisions of section 70(b)(8) of this rule if the health officer of the county in which the development is located certifies to the department, in writing, that:**

- (1) the health department has reviewed and recommended approval to the local plan commission, either verbally, in writing, or by other locally acceptable routine procedure, when the subdivision plat was being considered by that agency; and**
- (2) no lots in the subdivision currently have on-site sewage system failures as defined in section 33 of this rule.**

The certification must be accompanied by a brief description of the on-site sewage system approved for each lot for which exemption is requested including information on the design of the on-site sewage system as well as information on the type of soil

on the site. An affirmative response to subdivisions (1) and (2) must be included in the certification for the exemption to the provisions of section 70(b)(8) of this rule to be granted. (*Indiana Department of Health; 410 IAC 6-8.3-53; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-54 Operating permits

Authority: IC 16-19-3-27

Affected: IC 16-19-3-4

Sec. 54. (a) Local health departments may require written operating permits ~~in accordance with IC 16-19-3-27(b)(2)~~, as follows: **for systems as described in this rule, for systems described in section 52 of this rule for which interim standards have been approved by the department, for systems approved with best judgment of the local health department, and for temporary and long-term sewage holding tanks as follows.**

(1) A written operating permit issued by a local health department shall be signed by the health officer.

(2) An operating permit shall be renewed as follows:

(A) At least once every three (3) years for on-site sewage systems having **mechanical components, other than a septic tank, requiring scheduled inspection and maintenance in addition to a septic tank and soil absorption filed. Mechanical components include, but are not limited to effluent pumps, floats, transducers, control panels, control sensors, blowers, and flush valves.**

(B) At least once every five (5) years for all **other gravity fed** on-site sewage systems **that contain only a septic tank and a soil absorption field with no mechanical components.**

(b) An operating permit shall identify all components of an on-site sewage system requiring inspection and maintenance.

(c) The records for an operating permit requiring scheduled inspection and maintenance shall contain the following:

(1) The name, address, and telephone number of the service company contracted to perform inspection and maintenance.

(2) A description of the operation and maintenance document or documents used for scheduled inspection and maintenance.

(d) The owner shall provide the local health department with the following:

(1) Written documentation of all scheduled and unscheduled inspection and maintenance within one (1) month of the date performed.

(2) A copy of the inspection and maintenance contract **upon initiation or renewal.**

(e) If a service contract is discontinued for any reason, the owner shall contact the local health department and a new service contract for operation and maintenance shall be provided to the local health department within one (1) month of lapse in contract.

~~(e) (f)~~ The operating permit for a residential on-site sewage system in violation of subsection (d) or (e) ~~may~~ shall be revoked by the health officer in accordance with section 55(e) of this rule. (*Indiana Department of Health; 410 IAC 6-8.3-54; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-55 Violations; permit denial and revocation

Authority: IC 16-19-3-4

Affected: IC 4-21.5

Sec. 55. (a) Should a residential on-site sewage system fail, the failure shall be corrected by the owner within the time limit set by the health officer.

(b) If any component of a residential on-site sewage system is found to be:

(1) defective;

(2) malfunctioning; ~~or~~

(3) missing; or

~~(3)~~ (4) in need of service;

the health officer ~~may~~ shall require the repair, replacement, or service of that component. The repair, replacement, or service shall

be conducted within the time limit set by the health officer. **The local health department shall require a construction permit for the repair or replacement of any component.**

(c) Any person found to be violating this rule ~~may~~ shall be served by the health officer with a written order stating the nature of the violation and providing a time limit for satisfactory correction thereof.

(d) After receiving an order in writing from the local board of health or the health officer, the owner of the property shall comply with the provisions of this rule as set forth in the order and within the time limit specified therein. The order shall be served on the owner or the agent of the owner, but may be served on any person who, by contract with the owner, has assumed the duty of complying with the provisions of an order.

(e) The health officer ~~may~~ shall deny an application for a construction or operating permit, or ~~may~~ shall revoke a permit previously issued, for reasons including, but not limited to, any of the following:

(1) An on-site sewage system design does not meet the minimum requirements of this rule or local sewage ordinances, or both.

(2) Failure to comply with any provisions of this rule or local sewage ordinances, or both.

(3) Failure to comply with limitations, terms, or conditions of a permit that has been issued.

(4) Failure to disclose all the facts relevant to the construction and use of an on-site sewage system.

(5) Misrepresentation.

(6) Any change relating to the design, construction, or use of the on-site sewage system not approved, in writing, by the local health department.

(7) Lapse of a required service contract.

(f) The written denial or revocation shall state the following:

(1) The basis for the denial or revocation.

(2) The method or methods available for compliance, if applicable.

(3) The time frame for compliance, if applicable.

(4) That the owner has the right to appeal the denial or revocation.

(5) The procedure for registering any such appeal.

(g) The parties involved ~~may agree to~~ shall use the appeal procedures set forth in IC 4-21.5, the Administrative Orders and Procedures Act. (*Indiana Department of Health; 410 IAC 6-8.3-55; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; errata filed Dec 12, 2012, 2:16 p.m.: 20121226-IR-410120156ACA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328FRA*)

410 IAC 6-8.3-56 On-site evaluation and soil profile analysis

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 56. (a) Before issuance of any permit for construction of a residential on-site sewage system or the replacement or **alteration expansion** of a soil absorption system, an on-site evaluation **and soil profile analysis**, which shall includes a **written** descriptions of the soil profiles, shall be conducted.

The soil profile analysis shall be made to:

(1) a depth of at least five (5) feet;

(2) if shallower, a layer that cannot be readily penetrated; or

(3) a depth of at least eighty (80) inches if drainage calculations are going to be used to determine subsurface drainage depth.

(b) Properties of the soil at each site shall be described by a soil scientist in a legible, written report using the guidelines set forth in the soil manuals, technical bulletins, and handbooks of the NRCS. All written reports that are to be used for on-site sewage system suitability and sizing determinations shall be certified by the soil scientist and submitted, by the soil scientist, directly to the local health department of the county or city in which the property is located.

(c) A minimum of three (3) soil borings and/or soil pits shall be evaluated and used to complete the soil profile analysis in the area of any proposed soil absorption field or set aside area.

(1) Soil pits shall be used to describe:

(A) Soils containing expansive clays.

(B) Mine soils.

(2) Soil pits excavation shall at least two (2) feet wide and sufficiently deep and long for the soil scientist to observe the undisturbed wall of the pit to provide a description of the soil profile.

(3) For all other soils, the local health department may require at least one description shall be made using a soil pit. In addition to the one soil pit, a minimum of two (2) additional evaluations must be made by the soil scientist in each proposed soil absorption field or set aside area.

(d) The local health department may require:

(1) the soil scientist to provide advance notice of scheduled soil evaluations in the county;

(2) to have staff of the local health department present for the soil evaluation;

(3) additional laboratory analysis of soil horizon samples to provide additional soil characteristics that are necessary to determine the suitability or soil loading rate of the soil for an on-site sewage system;

(4) both a primary and secondary, or set-aside area, to be evaluated by the soil scientist; and/or

(5) the soil report to be submitted to the local health department directly by the soil scientist.

(e) (e) Soil profile information shall be recorded:

(1) to a depth of five (5) feet; or

(2) until a layer is encountered that cannot be readily penetrated;

whichever is shallower.

(d) (f) The on-site evaluation shall be conducted before application and plan submittal.

(e) (g) The information in the written on-site soils evaluation report shall include the following:

(1) The address or specific location of the property.

(2) The property owner's name.

(3) The method of evaluation for each profile description.

(4) For topographic information, the following:

(A) The slope and slope aspect.

(B) Surface drainage characteristics and patterns including swales, ditches, and streams.

(C) The proposed or existing location of the house and well or other water supply.

(D) The location of other major features or structures, including, but not limited to, trees and landscaping that may impact the installation of an on-site sewage system.

(E) The location of water features, such as ponds, lakes, ditches, rivers, etc.

(F) The location of each soil evaluation sites boring or pit in relation to a fixed reference point and appropriate soil type boundaries. A fixed reference point used for such measurements shall remain intact until the onsite sewage system has been installed and approved. GPS coordinates may be used in place of a fixed reference point.

(G) The topographic position of the site.

(2) (5) For soil characteristics, the following:

(A) Parent material.

(B) The approximate depths of soil horizons.

(C) The soil color, structure, (including grade, shape, and size) and texture at each horizon.

(D) The horizon designation for each horizon.

(E) The depth to any layer that has a soil loading rate greater than seventy-five hundredths (0.75) gallons per day per square foot or less than twenty-five hundredths (0.25) gallons per day per square foot.

(F) The depth to any layer that has a soil loading rate greater than one and two-tenths (1.20) gallons per day per square foot.

(G) The depth to seasonal high ground water as indicated by soil wetness characteristics redoximorphic features.

(H) The depth to bedrock.

(I) The soil consistence at each horizon.

(J) The soil effervescence at each horizon.

(K) The percent coarse fragments at each horizon.

(L) The percent clay at each horizon, by field estimation, for any soil horizon where the percent coarse fragments are greater than thirty-five percent (35%) by volume or where expansive clay is identified.

(M) The presence or absence of roots.

- (M) (N) Frost penetration depth, if applicable.
- (O) The presence and depth of any compaction, including plow pans.
- (P) Characteristics of expansive clay mineralogy, pressure faces, including slickensides with dimensions and stress cutans, wedge-shaped pedds, and surface cracks.
- (Q) Depth to free water, if present at the time of evaluation.
- (R) The presence and depth of fill material.
- (S) The presence of hydric soils and wetland characteristics.

(f) (h) When soil characteristics are to be used for calculations for the depth of a subsurface drainage system, the following information shall be recorded to a depth of eighty (80) inches:

- (1) The information required in subsection (e)(2).
- (2) Particle size family.

(Indiana Department of Health; 410 IAC 6-8.3-56; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-57 Separation distances

Authority: IC 16-19-3-4
Affected: IC 16-19-3-4

Sec. 57. (a) All septic tanks, dosing tanks, lift stations, and soil absorption systems shall be located in accordance with Table I as follows:

Table I Separation Distances		
Minimum Distance in Feet from	Septic Tank and Other Treatment Units, Dosing Tank, Lift Station, and Soil Absorption Field	Soil Absorption System
Private water supply well ^{1,2} or cistern ¹	50	50
Private geothermal well ^{1,2}	50	50
Commercial water supply well ¹	100	100
Commercial geothermal well ¹	100	100
Public water supply well, lake, ^{1, 3, 4, 9} or reservoir ^{1, 3, 4, 9}	200	200
Other pond, retention pond, lake, or reservoir ³	50	50
Storm water detention area ^{3, 5}	25	25
River, stream, ditch, or drainage tile ⁶	25	25
Buildings, foundations, slabs, garages, patios, barns, aboveground and belowground swimming pools, retaining walls, closed loop geothermal systems, roads, driveways, parking areas, or paved sidewalks	10 ^{7,8}	10 ⁸
Front, side, or rear lot lines	5	5
Water supply lines continually under pressure	10	10
Suction water lines	50	50

¹ The distances enumerated shall be doubled for soil absorption systems constructed where there exist soil horizons, layers, or strata within thirty twenty-four (324) inches of the ground a subsurface absorptive surface with a soil loading rate greater than seventy-five hundredths (0.75) gallons per day per square foot as determined from Table IV of section 70(b)(8) of this rule, unless that hazard can be overcome through on site sewage system design.

² The separation distance to a private water supply well abandoned in accordance with 312 IAC 13-10-2(e) may be reduced to ten (10) feet.

³ Measured from the normal or ordinary high water mark.
⁴ See subsections (b) and (e).
⁵ Storm water detention area: area designated for the temporary detention of storm water, with the outlet located at the lowest elevation of the depression.
⁶ See section 59(f) of this rule for subsurface drainage system separation.
⁷ Patios without footers, aboveground swimming pools, and sidewalks may be located within ten (10) feet of a septic tank, as long as if no required access points are obstructed.
⁸ A minimum separation of ten (10) feet is required on all sites.
⁹ Water wells and public water supplies regulated by IDEM shall meet the separation distances in IDEM rules or IDOH rules, whichever are greater.
¹⁰ Any excavation within one hundred (100) feet of a cemetery shall be made in compliance with IC 14-21-1-26.5(b).

A local health department may require septic tanks, dosing tanks, lift stations, and soil absorption systems to be a minimum of twenty-five (25) feet from open or closed sink holes (karst topography).

(b) A residential on-site sewage system shall not be located within two hundred (200) feet of a public water supply lake or reservoir. However, any residential on-site sewage system that includes secondary treatment and meets the following requirements may be less than two hundred (200) feet, but not less than fifty (50) feet, from the normal or ordinary high water mark of the lake or reservoir:

- (1) Meets the minimum requirements of section 60(h)(1) through 60(h)(3) of this rule; or
- (2) Is a system component independent of the soil absorption field that meets the effluent quality requirements of NSF/ANSI for certification under Standard 40 as a Class I plant, and that is approved by the department under the provisions of section 52(h) of this rule.

~~(e) (3) Any residential on-site sewage system approved under the provisions of subsection (b) must be~~ Is maintained for the life of the system through an operating permit issued under the provisions of section 54 of this rule.

~~(d) (c) Residential sewers, effluent sewers, and effluent force mains~~ shall not be located within fifty (50) feet of any water supply well or subsurface pump suction line, except as follows:

- (1) Sewers constructed of ~~waterworks grade ductile iron pipe with tyton or mechanical joints, or PVC pressure sewer pipe with an SDR rating of twenty six (26) or less with compression gasket joints; upgraded piping~~ may be located within the fifty (50) foot distance.
- (2) In no case shall sewers be located closer than twenty (20) feet to dug and bored water supply wells, or closer than ten (10) feet to drilled and driven water supply wells or subsurface pump suction lines.

~~(e) (d) Water lines shall not be laid in the same trench as residential and sewers, effluent sewers, or effluent force mains. shall not be laid in the same trench; Separation distances and crossings shall be~~ as follows:

- (1) A horizontal separation of ten (10) feet shall be maintained between water lines and sewers **when possible**.
- (2) Where crossings are necessary, a minimum of eighteen (18) inches vertical clearance must be maintained with the water line positioned above the sewer line when possible.
- (3) When it is impossible to maintain proper horizontal and vertical separation, the sewer shall be constructed of ~~ductile iron pipe with mechanical joints or PVC pressure sewer pipe with an SDR rating of twenty six (26) or less, having mechanical or compression gasket joints upgraded piping~~ within ten (10) feet of the water line with the water line positioned above the sewer line when possible. The sewer shall be pressure tested to assure watertightness prior to back filling.

(Indiana Department of Health; 410 IAC 6-8.3-57; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Apr 9, 2014, 9:51 a.m.: 20140507-IR-410130350FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-58 Dispersal area

Authority: IC 16-19-3-4
Affected: IC 16-19-3-4

Sec. 58. (a) A dispersal area is required for ~~a~~ all soil absorption systems when as follows:

- (1) The minimum dispersal area for any soil absorption field shall be ten (10) feet.
(2) The dispersal area shall meet the sizing requirements of subsection (b) when:

(1) (A) the soil loading rate used to determine the size of the soil absorption system is five-tenths (0.5) gallons per day per square foot (gpd/ft²) or less; or

(2) (B) there is a horizon in the upper sixty (60) inches of the profile description with:

- (A) (i) bedrock;
(B) (ii) dense material;
(C) (iii) dense till;
(D) (iv) soil with fragic properties; or

(E) (v) layers transitional to dense till (horizons in a soil developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution), unless:

(i) (AA) the on-site soils evaluation report shows that the presence of the horizon is not detrimental to the proper functioning of an on-site sewage system; and

(BB) the determination in item (i) (AA) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department.

(b) When the conditions in subsection (a)(2) apply, **the dispersal area shall meet the** following requirements and Table II shall be met:

(1) For soil absorption system sites with a slope of one-half percent (1/2%) or less, a minimum dispersal area as described in Table II in subsection (e) shall be maintained on each side of the outside edge of the:

(A) outer trench parallel to the length of the trench; or

(B) INDOT Specification 23 sand and parallel to the long axis of the elevated sand mound.

(2) For soil absorption system sites with a slope of greater than one-half percent (1/2%), a minimum dispersal area as described in Table II in subsection (e) shall be maintained on the downslope side of the soil absorption system from the outside edge of the:

(A) downslope trench parallel to the length of the trench; or

(B) INDOT Specification 23 sand downslope and parallel to the long axis of the elevated sand mound.

(3) For soil absorption system sites with a subsurface perimeter drain installed in compliance with section 59 of this rule, a minimum dispersal area as described in Table II shall be maintained on the downslope side of the soil absorption system on sites with a slope of greater than one-half percent (1/2%), or on each side of the outside edge of the soil absorption system on sites with a slope of one-half percent (1/2%) slope, from the outside edge of the:

(A) downslope trench, or outer trench, parallel to the length of the trench; or

(B) INDOT Specification 23 sand parallel to the long axis of the elevated sand mound.

(e) For sites that do not meet the conditions of subsection (a), the minimum dispersal area shall be ten (10) feet. For sites that meet the conditions of subsection (a), the dispersal area shall be as indicated in Table II, as follows:

Table II - Minimum Dispersal Areas¹ for Soil Absorption Systems

Slope \leq 1/2 % ² : On-site sewage system without perimeter drain	One-fourth (1/4) width of soil absorption system ⁵
Slope $>$ 1/2 % ³ : On-site sewage system without perimeter drain	One-half (1/2) width of soil absorption system ⁵
Any slope: On-site sewage system with perimeter drain ⁴	Ten (10) feet or the distance to the perimeter drain

¹No buildings, foundations, slabs, garages, patios, barns, aboveground and belowground swimming pools, retaining walls, roads, driveways, parking areas, or paved sidewalks are allowed in the dispersal area.

²Dispersal area is located on each side of the outside edge of the outer trench parallel to the length of the trench, or on each side of the outside edge of the sand area and parallel to the long axis of an elevated sand mound.

³Dispersal area is located on the downslope side of the soil absorption system.

⁴For on-site sewage systems with a subsurface perimeter drain without a seasonal high water table, the design and construction of the drain shall meet the requirements of section 59 of this rule.

⁵Dispersal area width shall not be less than ten (10) feet. A dispersal area width of more than twenty-five (25) feet is not required.

(d) (c) Any disturbance within a dispersal area shall not create compacted soil material.

(e) (d) The location of the dispersal area shall meet the following requirements:

(1) A dispersal area shall be located on the property, or adjoining property with easement, or **declaration of easement for an on-site sewage system if both properties are owned by the same person, except that the easement or declaration of easement** is not required for lots platted prior to January 1, 2011.

(2) Nothing that would impede the flow of water shall be allowed in a dispersal area. This includes, but is not limited to, the following:

- (A) buildings;
- (B) foundations;
- (C) slabs;
- (D) garages;
- (E) patios;
- (F) barns;
- (G) aboveground and belowground swimming pools;
- (H) retaining walls;
- (I) roads;
- (J) driveways;
- (K) parking areas;
- (L) paved sidewalks;
- (M) closed loop geothermal systems; or
- (N) other structures.

(3) A dispersal area shall not be located in a closed depression where surface runoff or subsurface water movement will have an adverse effect on on-site soil absorption system performance or in areas subject to ponding.

(4) For soil absorption system sites with a slope of greater than one-half percent (1/2%), no part of the dispersal area may slope toward the soil absorption system.

(5) Dispersal areas shall not allow for convergent dispersal.

(Indiana Department of Health; 410 IAC 6-8.3-58; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-59 Drainage

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 59. (a) A surface diversion:

(1) shall be constructed if drainage from an adjoining upslope landscape affects the soil absorption system site;

(2) shall have a positive grade of at least two-tenths (0.2) feet and four tenths (2.4) inches per one hundred (100) feet, or a grade of two-tenths percent (0.2%);

(3) shall be **cut below final grade and be** of sufficient depth and width to move surface water away from the soil absorption system;

(4) shall be located:

(A) for subsurface trench on-site sewage systems that do not require additional soil cover **material**, at least ten (10) feet from the soil absorption system, as measured from the downslope edge of the surface diversion to the outside edge of the nearest soil absorption system trench;

(B) for subsurface trench on-site sewage systems that require additional soil cover **material**, at least ten (10) feet from the soil absorption system, as measured from the downslope edge of the surface diversion to the

upslope edge of the additional soil cover **material**; or
(C) for elevated sand mound on-site sewage systems, at least ten (10) feet from the soil absorption system, as measured from the downslope edge of the surface diversion to the upslope edge of the soil cover **material**; and
(5) may be used in combination with an on-site subsurface drainage system.

(b) Subsurface drainage may be required to be installed for a soil absorption field, or around portions of a soil absorption field, when redoximorphic features and/or soil wetness characteristics are described within twenty-four (24) inches of the absorptive surface of subsurface trenches or within twenty (20) inches of the ground surface for elevated sand mounds.

(c) If the site has a slope of equal to or less than two percent (2%), the subsurface drain shall surround the on-site sewage system. If the site slope exceeds two percent (2%), the subsurface drain may be constructed only on the upslope side of the on-site sewage system. The local health department may require subsurface perimeter drainage to be installed on sites with slopes of two percent (2%) or greater.

(d) When a subsurface drainage system is constructed, it shall be sufficiently deep to lower a seasonal high water table as required in subsection (d) or (e) at least twenty-four (24) inches below the subsurface trench bottoms in the center of a subsurface trench soil absorption field or at least twenty (20) inches below grade in the center of an elevated sand mound. The depth of the subsurface drain shall be sufficiently deep to account for the water mounding effect under the soil absorption field with minimum depth determined by one of the following methods:

(e) If the site has a slope of equal to or less than two percent (2%), the subsurface drain shall surround the on-site sewage system. If the site slope exceeds two percent (2%), the subsurface drain may be constructed only on the upslope side of the on-site sewage system.

(d) (1) If the seasonal high water table is perched, the subsurface drain trench shall be Optimally, the minimum required depth for subsurface drainage shall be to install the drain tile so that the invert of the drain tile is installed constructed at least two (2) inches into the deepest structureless massive compact clay with firm or very firm consistence; dense, compact glacial till; or fragipan or a soil horizon with fragic characteristics whenever site and soil conditions permit.

(2) When the drain cannot be constructed at least two (2) inches into the one or more soil profile descriptions in the area of the soil absorption field does not have structureless massive compact clay with firm or very firm consistence, dense, compact glacial till, or fragipan or a soil horizon with fragic characteristics described in the soil profile, or when elevations at the site do not allow for the subsurface drain tile to be installed at the depth required in subsection (1) and provide the minimum required slope throughout the drain tile and the drain tile outlet, the invert elevation depth of the drain tile shall be the following unless calculations are used to determine drain depth:

(1) (A) For trench on-site sewage systems, the invert elevation of the subsurface perimeter, interceptor, or segment drain shall be at least thirty-six (36) inches below the invert elevation of any adjacent soil absorption trench bottom for subsurface trench on-site systems, or;

(2) (B) For elevated sand mound on-site sewage systems, the invert elevation of the subsurface perimeter or interceptor drain shall be at least thirty-two (32) inches below existing grade for elevated sand mound on-site sewage systems.

(e) (3) If drainage calculations are used to determine drain depth, drainage formulas and calculations shall be submitted to the local health department as part of the plan submittal, showing a lowering of the seasonal high water table to the depth required in subsection (b).

(1) for subsurface trench on-site sewage systems, at least twenty-four (24) inches below the trench bottoms in the center of the soil absorption field; or

(2) for elevated sand mound on-site sewage systems, at least twenty (20) inches below original grade.

(f) (e) Subsurface drainage systems shall be located at soil absorption system sites as follows:

(1) All portions of a subsurface drainage system shall be installed at least ten (10) feet from any distribution box, effluent sewer after the distribution box, pressure manifold pipe, septic tank or dosing tank.

(2) All portions of a subsurface drainage system shall be installed at least ten (10) feet from the outside edge of any soil absorption trench.

(2) (3) All portions of a subsurface drainage system shall be installed at least ten (10) feet from the outside edge of the

INDOT Specification 23 sand **for an elevated sand mound**.

(3) (4) Spacing of subsurface perimeter drains and segment drains installed parallel to the trench lengths along the contour of the site for a subsurface trench system or parallel to the long axis of an elevated sand mound must be less than or equal to sixty-five (65) feet, unless a greater spacing is determined through calculations.

(4) (5) The subsurface drain shall not cross any portion of the soil absorption system.

(g) (f) The subsurface ~~drain~~ **drainage pipe tile** shall be:

- (1) at least four (4) inches in diameter;
- (2) slotted; and

(3) wrapped with a geotextile fabric with an effective opening size not smaller than two-tenths (0.2) millimeter and not larger than eighty-five hundredths (0.85) millimeter when ~~installed in the soil immediately surrounding any portion of the perimeter or segment drainage tile consists of:~~

- (A) sands;
- (B) loamy sands;
- (C) sandy loams;
- (D) fine sandy loams;
- (E) loams;
- (F) silt loams; or
- (G) silts.

(h) (g) The subsurface ~~drain~~ **drainage trench and drainage tile** shall:

- (1) have a positive slope of at least two-tenths (0.2) foot per one hundred (100) feet when a four (4) inch ~~drain pipe drainage tile~~ is used;
- (2) have a positive slope of at least one-tenth (0.1) foot per one hundred (100) feet when a six (6) inch ~~drain pipe drainage tile~~ is used; and
- (3) be constructed with no sags in the line.

(i) (h) ~~A~~ All subsurface ~~drain~~ **drainage trenches** installed upslope from a residential on-site sewage system shall be ~~backfilled~~: (1) ~~backfilled~~ to final grade, or to within six (6) inches of final grade, with aggregate that meets the minimum requirements of subsection (k); or

(2) filled to within six (6) inches of final grade with aggregate that meets subsection (k) and the final six (6) inches to final grade with cover soil material.

(j) ~~A~~ subsurface drain trench installed on sides or downslope, and segment drain trenches may be:

- (1) ~~backfilled~~ to final grade with aggregate that meets the minimum requirements of subsection (k); or
- (2) filled to within six (6) inches of final grade with aggregate that meets the minimum requirements of subsection (k) and the final six (6) inches to final grade with cover soil material.

(k) ~~The aggregate backfill for subsurface drain trenches shall meet the minimum requirements of one of the following:~~

- (1) section 68 of this rule;
- (2) washed aggregate with a gradation in the range of INDOT Specification 5, or 8 through 11; or
- (3) INDOT Specification 23 sand or equivalent.

(l) When INDOT Specification 23 sand is used for backfill, the drainpipe shall be wrapped with a geotextile fabric.

(m) (i) When the aggregate backfill does not extend to final grade, the aggregate used as backfill in the perimeter, interceptor, or segment drainage trenches described in subsections (i)(2) and (j)(2) shall be covered with a geotextile fabric barrier material that meets the minimum requirements in section 69 of this rule in such a manner as to prevent the aggregate from becoming clogged with the earth fill.

(j) When INDOT Specification 23 sand is used for backfill, the subsurface drain pipe shall be wrapped with a geotextile fabric.

(n) (k) The subsurface drainage trench and the associated **drainage** discharge piping shall be constructed to permit water to flow by gravity throughout its length. No pumps or siphons shall be utilized to effect the movement of the collected water.

(l) A local health department may require a sampling port to be installed in the outlet tile after it leaves the soil absorption field if the subsurface drainage tile is connected to an existing drainage tile, or the drainage tile outlet is not accessible to collect a sample of water for testing on the owner's property. The sampling port shall:

- (1) be a minimum of eight (8) inches in diameter;
- (2) be constructed of piping that meets the requirements of section 67(a);

- (3) extend above final grade with the ground surface sloping away in all directions;
- (4) have inlet and outlet pipes that extend at least one (1) inch, but no more than two (2) inches, into the inspection port; and
- (5) have the invert of the inlet pipe above the invert of the outlet port to allow for sampling.
- (6) be capped with a safely secured, easily removable cap or lid constructed of material compatible with the pipe used.
- (7) be adequately secured in the ground with rebar or similar so as to not come out of the ground when opened.

~~(e) (m)~~ Tile outlets shall be provided with rodent guards. (*Indiana Department of Health; 410 IAC 6-8.3-59; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-60 Septic tanks: general requirements

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 60. (a) ~~Septic tanks shall be:~~

- (1) watertight and constructed of durable material such as concrete, fiberglass, polyethylene, or polypropylene; and
- (2) protected from corrosion.

~~(b) Cast in place, concrete block, wood, or metal septic tanks are prohibited.~~

~~(e) Every septic tank shall have a minimum capacity below the water line as specified in Table III as follows:~~

Table III - Required Minimum Capacities for Septic Tanks	
Number of Bedrooms in Dwelling	Capacity of Tank in Gallons
2 or less	750
3	1,000
4	1,250
5	1,500
5 +	1,500 plus 300 multiplied by the number of bedrooms over 5

~~(d) All septic tank effluent including effluent from tanks fitted with aeration units for aerobic digestion shall discharge into a soil absorption system or other treatment system as approved in accordance with section 52(h) of this rule.~~

~~(e) Two-compartment tanks shall meet the following requirements:~~

~~(1) The liquid volume of the first compartment shall be between one-half (1/2) and two-thirds (2/3) of the total tank volume.~~

~~(2) The divider wall shall be:~~

- ~~(A) monolithically cast in the tank; or~~
- ~~(B) permanently secured within the tank body using noncorrosive fasteners or fittings.~~

~~(3) The transfer port or ports between the compartments shall consist of two (2) or more openings with a combined area of at least fifty (50) square inches. A continuous port across the width of the divider wall is also acceptable.~~

~~(4) The transfer port or ports shall be located in the middle twenty-five percent (25%) of the liquid depth.~~

~~(5) An access opening meeting the requirements of section subsection (l)61(e) of this rule must be provided above each compartment, including a riser meeting the requirements of section 61(p) 63 (d) of this rule, for maintenance pumping.~~

~~(fc) When multiple tanks are used in series, no single tank may be less than seven hundred fifty (750) gallons. The larger of the two (2) tanks must be upstream of the other.~~

~~(gd) When sewage is pumped into a septic tank using a grinder pump:~~

- ~~(1) a two-compartment tank must be used with the sewage pumped into the first compartment; or~~
- ~~(2) two (2) tanks in series must be used, with the sewage pumped into the first tank.~~

~~(h) Tanks fitted with aeration units for aerobic digestion shall:~~

~~(1) conform to NSF/ANSI Standard 40 2010, Residential Wastewater Treatment Systems, for Class I plants or to standards of an equivalent third party product testing laboratory acceptable to the department that meet or exceed the NSF/ANSI standards;~~

- (2) bear a current registered certification mark;
 - (3) provide a minimum aerobic treatment capacity of one hundred fifty (150) gallons per bedroom per day;
 - (4) be preceded by a septic tank that meets all of the requirements of this section and sections 61 and 63 of this rule; and
 - (5) discharge into a soil absorption system or other treatment system as approved in accordance with section 52(h) of this rule.
- (i) Water softener backwash shall be discharged to:
 - (1) the building sewer;
 - (2) a secondary treatment device;
 - (3) the effluent sewer on the downstream side of either the septic tank or the secondary treatment device;
 - (4) the dosing tank serving the soil absorption system; or
 - (5) a separate soil absorption system constructed specifically for the water softener backwash.

(e) The bottom of the septic tank inlet shall not be less than two (2) inches nor more than four (4) inches above the normal liquid level of the tank, which is the elevation of the invert of the tank outlet.

(af) The minimum water depth in any compartment shall be thirty (30) inches.

(bg) The maximum water depth for calculating septic tank capacity shall not exceed six and one-half (6 1/2) feet.

(eh) The septic tank shall have an inlet baffle or sanitary tee at the inlet end of the tank.

(1) The inlet baffle or sanitary tee shall:

- (A) be constructed of durable materials not subject to corrosion or decay;
- (B) extend eight (8) inches below the liquid level;
- (C) extend to the top of the inlet sewer;
- (D) have at least one (1) inch of clear space between the underside of the septic tank lid and the top of the inlet baffle or tee; and
- (E) not be more than twelve (12) inches nor less than four (4) inches from the inside of the inlet end of the tank.

(2) If a sanitary tee is used as the inlet baffle, the sanitary tee shall be:

- (A) at least four (4) inches in diameter, or the diameter of the residential sewer, whichever is greater; and
- (B) shall be accessible from the inlet access of the tank for maintenance.

(3) The residential sewer entering the septic tank shall completely penetrate the wall of the septic tank, and there shall be at least three (3) inches between the end of the sewer pipe and the inlet baffle.

(di) All new septic tanks shall be provided with an outlet filter that meets or exceeds the requirements of section 64 of this rule.

(ej) Any septic tank not provided with an outlet filter in the interior of the tank shall be provided with:

(1) an outlet baffle or sanitary tee that:

- (A) is constructed of durable materials not subject to corrosion or decay;
- (B) extends below the liquid level at least ten (10) inches, but not more than forty percent (40%) of the tank liquid depth; and
- (C) is no more than twelve (12) inches not less than four (4) inches from the outlet end of the tank; and
- (D) is readily accessible from the outlet access of the septic tank for maintenance; and

(2) a gas deflection baffle that is:

- (A) constructed of durable materials not subject to corrosion or decay; and
- (B) configured to deflect rising gas bubbles toward the interior of the tank.

(gk) Scum storage capacity (space between the liquid level and the top of the outlet baffle or tees) shall be not less than twelve and one-half percent (12.5%) of the liquid depth of the septic tank.

(ol) All septic tank access openings shall meet the following requirements:

(1) At least one (1) opening, eighteen (18) inches in minimum dimension per compartment for pumping access.

(2) An access opening shall be located over each of the following:

- (A) The inlet.
- (B) The outlet.
- (C) The baffle, if present, on the partition or divider wall of a two-compartment septic tank.

(3) All access openings shall be sized and positioned in such a way as to allow for maintenance, cleaning, and servicing of septic tanks and outlet filters.

(Indiana Department of Health; 410 IAC 6-8.3-60; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-62 Dosing tanks

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 62. (a) Dosing tanks:

~~(1) must be watertight and constructed of durable material such as concrete, fiberglass, polyethylene, or polypropylene; and~~

~~(2) shall be protected from corrosion.~~

~~(b) Cast in place, concrete block, wood, or metal dosing tanks are prohibited.~~

~~(c) Reinforced concrete dosing tanks shall be constructed of concrete with a compressive strength of four thousand (4,000) pounds per square inch or greater.~~

~~(d) Concrete dosing tank walls shall be at least two and one half (2 1/2) inches or greater in thickness. The design shall allow at least one (1) inch cover over reinforcing steel or welded wire fabric.~~

~~(ea) The required liquid holding capacity of the dosing tank shall not be considered as any portion of the required liquid volume of the septic tank.~~

~~(fb) The liquid holding capacity of a dosing tank must equal the dose volume required by this rule for each type of soil absorption system, in addition to the volume of liquid that will drain back from any effluent force main when pumping ceases. Additional capacity must be provided to:~~

~~(1) keep the dosing tank effluent pump submerged at all times; and~~

~~(2) provide sufficient freeboard for a high water alarm; and~~

~~(g) Dosing tanks shall be provided with pipe connectors that meet the following requirements:~~

~~(1) Each pipe penetration shall be sealed with a flexible, resilient rubber pipe connector that uses an expansion ring, tension band, or a take up device for mechanically compressing the resilient portion of the connector against the pipe.~~

~~(2) All metallic mechanical devices, including expansion rings, tension bands, take up devices, and screws, shall be constructed of series 300 stainless steel.~~

~~(3) Conform to:~~

~~(A) ASTM C 1644-06, Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes; or~~

~~(B) ASTM C 923-08, Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.~~

~~(hc) Each dosing tank shall be fitted with an effluent pump sized in conformance with section 65 and section 76(b), 78(d), 78(q), 82(b), or 82(j) of this rule, whichever is applicable, with controls, and with a high water alarm switch set at a level above the design high water mark. The alarm shall:~~

~~(1) be on a separate circuit from the effluent pump; and~~

~~(2) include an audible and visible alarm.~~

~~(d) The local health department may require the liquid holding capacity of the dosing tank to include a minimum reserve capacity of one hundred fifty (150) gallons above the position of the high water alarm.~~

~~(e) Each dosing tank shall have an access opening positioned over the effluent pump, of sufficient size to access and service the effluent pump and float tree or transducers, but no less than eighteen (18) inches in diameter.~~

(Indiana Department of Health; 410 IAC 6-8.3-62; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-62.1 Combination tanks

Authority: IC 16-19-3-4

Affected: IC 16-41-25-3

Sec. 62.1. (a) all combination tanks shall have:

(1) a septic chamber sized in compliance with section 60 of this rule:

- (2) a dosing chamber sized in compliance with section 60 of this rule; and
 - (3) a divider wall that only allows passage of effluent from the septic chamber to the dosing chamber through an outlet filter installed at the outlet of the septic chamber. The divider wall shall be:
 - (A) monolithically cast in the tank; or
 - (B) permanently secured within the tank body using noncorrosive fasteners or fittings.
- (b) An access opening, at least eighteen (18) inches in minimum dimension shall be provided for access to the outlet filter, in addition to access openings required in subsections 60(1) and 61(d) of this rule.
- (c) The septic chamber of a combination tank shall:
- (1) comply with the requirements for septic tanks in sections 60(e), 60(f), 60(g), 60(h), 60(i), 60(j), 60(k), and 60(l) of this chapter; and
 - (2) not receive sewage pumped from a grinder pump.
- (d) Any excess capacity in the septic chamber shall not be considered capacity for use in the dosing chamber.
- (e) Any reserve capacity in the dosing chamber shall not be considered capacity for the septic chamber.
- (f) The dosing chamber of a combination tank shall be fitted with an effluent pump sized in compliance with section 95(e).

410 IAC 6-8.3-62.2 Sewage holding tanks

Sec. 62.2 (a) All sewage holding tanks shall be minimally sized in accordance with Table III in section 96(a) of this rule.

(b) A temporary sewage holding tank is an alternative method of sewage disposal subject to the written approval of the department or the local health department. A temporary sewage holding tank shall not be used as a primary means of residential sewage disposal except:

- (1) where necessary to prevent continued discharge of sewage from a failed existing residential on-site sewage system;
- (2) when soil conditions exist that preclude the prompt construction of a soil absorption system for which a construction permit has been issued; or
- (3) for not more than one (1) year while connection to sanitary sewer is being secured. This one (1) year time frame may be extended upon documentation of satisfactory operation of the holding tank.

(c) A long-term sewage holding tank is an alternative method of sewage disposal subject to the written approval of the department or the local health department. A long-term sewage holding tank may be utilized when:

- (1) the holding tank is operated by a conservancy district, sewer district, private utility, or municipality as a part of its sewage disposal plan; or
- (2) where necessary to prevent continued discharge of sewage from a failed existing residential on-site sewage system where there is no option for system replacement.

(d) For all temporary and long-term sewage holding tanks, the local health department shall require:

- (1) an installation inspection to confirm proper installation and to confirm the outlet of the last tank has been appropriately sealed prior to backfilling; and
- (2) a high-water alarm to be installed at no more than the ninety-five percent (95%) level of the usable capacity in the holding tank or in the last tank in series. The alarm shall be wired in by an electrician and verified operational,

(e) Use of a temporary or long term sewage holding tank must be discontinued if:

- (1) Connection to an approved on-site sewage system becomes available to the owner; or
- (2) Connection to sanitary sewer becomes available within three hundred (300) feet of the property line on which the sewage holding tank is being used.

(f) Upon connection to an on-site sewage system or sanitary sewer, the sewage holding tank shall be abandoned unless it will be converted for use as a septic tank or a dosing tank in an on-site sewage system.

410 IAC 6-8.4-62.3 Tank Construction Requirements

Authority: IC 16-19-3-4

Affected: IC 16-41-25-3

Sec. 62.3. (a) All septic tanks, two-compartment septic tanks, dosing tanks, combo tanks, and sewage holding tanks shall:
(1) comply with the construction requirements of this section;
(2) be watertight;
(3) be constructed of durable material such as concrete, fiber-reinforced polyester (FRP), or thermoplastic; and
(4) be protected from corrosion

(b) Cast in place; concrete block, wood, or metal tanks are prohibited.

(c) All fiber-reinforced polyester and thermoplastic tanks shall comply with IAPMO Z1000-2019.

(d) Reinforced concrete tanks shall be constructed of concrete with a compressive strength of four thousand (4,000) pounds per square inch or greater.

(e) Concrete tanks shall not collapse, whether they are empty or full, when subjected to the soil and hydrostatic loads. Concrete tank walls, including divider walls in a two-compartment septic tank or a combo tank, and bases shall be designed with reinforcing steel rebar or welded wire fabric to withstand anticipated loads. At a minimum, concrete tank walls and bases shall be at least two and one-half (2 1/2) inches or greater in thickness. The design must allow at least one (1) inch cover over reinforcing steel or welded wire fabric.

(f) Concrete tank tops shall be designed and reinforced to withstand anticipated loads. At a minimum, the top shall be four (4) inches in thickness and reinforced with three-eighths (3/8) inch reinforcing rebar in a twelve (12) inch grid or equivalent.

(g) Type III fibers are permitted only as a secondary reinforcing material in concrete tanks. Fiber additions will be considered only for the purpose of resisting temperature and shrinkage efforts, and not as primary reinforcing material.

(h) All seams in precast concrete tanks shall be sealed with a preformed resilient flexible sealant which meets the minimum requirements of ASTM C990-09(2019) – Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealant.

(i) All tank inlets and outlets shall be provided with pipe connectors that meet the following requirements:

(1) Each pipe penetration shall be sealed with a resilient rubber pipe connector that uses an expansion ring, tension band, or a take-up device for mechanically compressing the resilient portion of the connector against the pipe.

(2) All metallic mechanical devices, including expansion rings, tension bands, take-up devices, and screws, shall be constructed of series 300 stainless steel.

(3) Connectors shall conform to:

(A) ASTM C 1644-06(2017), Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes; or

(B) ASTM C 923-09(2019), Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

410 IAC 6-8.3-63 Septic tanks and dosing tanks: Tank installation and maintenance requirements

Authority: IC 16-19-3-4

Affected: IC 16-41-25-3

Sec. 63. (a) All tanks and dosing tanks shall be installed level on:

(1) undisturbed soil;

(2) sand;

(3) aggregate not larger than one and one-half (1 1/2) inches in diameter; or

(4) an engineered base.

(b) All drain holes in septic tanks and dosing tanks shall be:

(1) fitted with a threaded fitting, cast in place, and plugged with a threaded plug; or

(2) plugged with an expandable pipe plug with a wing nut.

(c) When the top of any the septic tank or dosing tank is installed at or above grade, all access openings shall be fitted with watertight, securely fastened covers.

(d) When the top of any the septic tank or dosing tank is installed below grade, risers shall:

(1) be made of corrosion resistant materials and withstand anticipated external loads;

(2) have the lower section of the riser assembly:

- (A) cast into the lid of the tank, or
- (B) sealed to the top of the tank with a preformed resilient flexible sealant which meets the minimum requirements of ASTM C 990-09(2019) Standard Specifications for Joints for Concrete Pipe Manholes, and Precast Box sections Using Preformed Flexible Joint Sealant to provide a watertight seal.
- (43) be installed over all required access openings used for pumping and for maintenance of the outlet filter in the septic tanks and over the pump access port in a dosing tank or chamber;
- (24) be large enough for access to the tank through the access opening in the top of all the septic tank or dosing tanks to clean the tanks and to maintain floats, sensors, filters, and pumps;
- (3) have the lower section sealed to the top of the tank with butyl sealant meeting ASTM C 990-09 to provide a watertight seal, if the riser assembly is not cast into the tank lid;
- (45) have all riser assembly joints between riser sections, including the seal for the riser cover, sealed with a performed resilient flexible sealant which meets the minimum requirements of ASTM C990-09(2019) – Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealant to provide a watertight seal. in accordance with the manufacturer's instructions so as to be watertight;
- (56) extend to or above final grade;
- (67) be fitted with a watertight cover securely fastened to the riser; and
- (87) comply with the requirements of IC 16-41-25-3.

(e) Final grade over and around all tanks should direct surface water away from the tank, but not toward the soil absorption field.

(ef) Septic tanks and dosing tanks shall not be installed with the top of the riser below the ~~RBFE~~.

(fg) All joints in the sewer connecting septic tanks in series or septic tanks to dosing tanks shall be sealed in accordance with the manufacturer's instructions in order to be watertight and to withstand the pressures exerted on them. (Indiana Department of Health; 410 IAC 6-8.3-63; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-64 Outlet filters

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 64. (a) An outlet filter shall be installed in the septic tank, or in a secondary structure, of new on-site sewage systems and existing on-site sewage systems requiring a new septic.

(b) For on-site sewage systems requiring repair, or soil absorption systems requiring replacement, the local health department may require an outlet filter to be installed in the existing septic tank, or in a secondary structure. The outlet filter, if required by the local health department, must meet the requirements of this section.

(c) Outlet filters shall be located in at the outlet end of:

- (1) a single septic tank when not used in series;
- (2) the second compartment of two-compartment septic tanks;
- (3) the last septic tank when two (2) or more tanks are used in series; or
- (4) a secondary watertight structure located after the last septic tank and prior to a dosing tank, distribution box, or secondary treatment unit.

(d) An access opening of eighteen (18) inches in minimum dimension shall be:

- (1) located over the outlet filter; and
- (2) provided with a riser to grade that meets the minimum requirements of section 63(d) of this rule.

(e) Outlet filters shall:

- (1) conform to NSF/ANSI Standard 46-2011a, Evaluation of Components and Devices Used in Wastewater Treatment Systems, maintain a current product listing with an ANSI accredited third-party certifier, and bear a listing mark;
- (2) be rated by the manufacturer for a daily flow equal to or greater than the liquid capacity of the septic tank;
- (3) prevent the passage of solids larger than one-eighth (1/8) of an inch;
- (4) have inlets and outlets of at least four (4) inches in diameter;
- (5) function without a bypass of unfiltered sewage, sludge, or scum, during normal use and during servicing;
- (6) be made of a noncorrosive material designed for use in sewage applications;
- (7) maintain structural integrity, not tearing or distorting so as to make it inoperable during normal operation, throughout

the life of the device; **and**

(8) have removable outlet filter cartridges; **and**;

(9) be fitted with a filter removal device when installed more than eighteen (18) inches below the riser lid.

(f) The outlet filter housing shall:

(1) connect to the outlet pipe or structure wall with noncorrosive fasteners;

(2) extend at least five (5) inches above the liquid level of the tank;

(3) be installed so the bottom of the filter inlet extends below the

liquid level at least ten (10) inches, but not more than forty percent (40%) of the septic tank liquid depth;

(4) include a gas deflection device that remains in place when the filter cartridge is removed; and

(5) be solvent welded to a PVC Schedule 40 outlet pipe that meets the minimum requirements of section 67(a)(1) or 67(a)(2) of this rule, creating a watertight and mechanically sound joint.

(g) The local health department may require an outlet filter alarm may be installed in the septic tank to indicate when the outlet filter is in need of needs service. All electrical connections for the alarm shall be made outside of the septic tank and riser, in an outdoor weatherproof box meeting or exceeding NEMA 4X standards.

(h) An outlet filter with cartridge shall remain in service for the life of the septic tank.

(i) Outlet filter manufacturers shall provide installation and maintenance instructions with each outlet filter. Outlet filters shall be:

(1) installed according to manufacturer's recommendations;

(2) located so they do not interfere with pumping and cleaning of the septic tank; **and**

(3) placed to allow accessibility for routine maintenance without entering the septic tank or outlet structure if separate from the septic tank; **and**

(4) be easily accessible and removable from the septic tank outlet through the tank access and riser.

(j) Outlet filters shall be serviced according to the manufacturer's service recommendations, but no less frequently than each time the septic tank is cleaned, as follows:

(1) The outlet filter shall be:

(A) cleaned and washed so that the filter waste enters the septic tank; or

(B) exchanged with a clean filter.

(2) All contaminated effluent filters shall be treated as untreated sewage and handled properly during the cleaning or exchange process.

(Indiana Department of Health; 410 IAC 6-8.3-64; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Apr 9, 2014, 9:51 a.m.: 20140507-IR-410130350FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-65 Effluent pumps and controls

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 65. (a) All effluent pumps shall be:

(1) submersible **effluent** pumps suitable for use in a corrosive atmosphere;

(2) sized to deliver the total design flow rate while meeting the total dynamic head requirements of the on-site sewage system;

(3) connected to pump discharge piping that is adequately secured; and

(4) installed in such a manner as to allow for removal without entering the dosing tank or dewatering the dosing tank.

(b) Effluent pumps shall be provided with a suitable means of quick, convenient disconnection from the discharge piping, as follows:

(1) Fittings and valves shall be of compatible corrosion resistant material. **Disconnects made of brass are prohibited.**

(2) A quick disconnect coupling, breakaway flange, or similar disconnect device shall be provided for each pump discharge pipe.

(3) **Quick disconnect couplings and valves shall be readily accessible from the ground surface without entering the dosing tank, no more than (18) inches below the riser lid.**

(c) A weephole shall be installed in the discharge line in the dosing tank to allow the force main to completely drain between doses if the discharge pipe extends above the tank outlet.

(4d) Submersible pumps shall be provided with a corrosion resistant lifting apparatus such as a rope or chain to facilitate

removal of the pump.

(ee) **Floats that are comparable to mercury level switches or transducers shall be used for effluent pump start and stop controls, and for high water alarms.** All floats and transducers used for pump operation shall be mounted according to manufacturer's specifications using fasteners manufactured for that purpose, **excluding zip ties, electrical tape, and steel hose clamps; and mounted on a float tree that is:**

- (1) made of noncorrosive materials designed for use in sewage applications;
- (2) in contact with the dosing tank floor;
- (3) separate from the pump discharge pipe; and
- (4) Installed in such a manner that prevents the floats or transducers from becoming entangled with the pump, other switches or sensors, or any of the associated electrical cords.

(f) The local health department may require the installation of double floats for all on-site systems that are demand dosed. All floats and sensors shall be rated to meet or exceed the ratings of the specified effluent pump.

(eg) Controls other than liquid level sensors floats and transducers shall not be located within the dosing tank or in the dosing tank riser.

(eh) All electrical connections for the pump, high water alarm, and float or transducers shall be made outside of the dosing tank and riser. The electrical enclosure ~~Junction~~ boxes shall be rated as ~~a~~ meet or exceed NEMA 4X, National Electrical Manufacturers Association, NEMA 250-2008 standards.

(i) All connectors to the ~~junction box~~ electrical enclosure shall form a watertight seal:

- (1) to the ~~junction box~~ electrical enclosure; and
- (2) between connector openings and incoming wires.

(fj) Any connector not used for wiring shall be fitted with a watertight plug.

(k) The electrical service disconnect shall be located outside of the structure within line of site of the dosing tank if electrical breakers are not installed within the electrical enclosure. The electrical service disconnect shall be located in an outdoor weatherproof box, meeting or exceeding NEMA 4X standards and shall meet all requirements of the National Fire Protection Association (NFPA) 70 National Electrical Code.

(l) All underground wiring providing electrical power to the components of an on-site system shall be installed in PVC conduit unless underground feeder ("UF-B") grade wire is used. The conduit must:

- (1) extend from the system component to the structure where the power source is located;
- (2) be large enough in diameter to pull wires through when replacement is required; and
- (3) be sealed at both ends so that gases from the dosing tank cannot travel to the electrical enclosure.

(m) The gauge of wire used to supply power from the structure to the OSS components shall meet the standards supplied by Department.

(Indiana Department of Health; 410 IAC 6-8.3-65; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-66 Distribution box specifications

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 66. (a) Concrete distribution boxes shall be constructed of concrete with a compressive strength of four thousand (4,000) pounds per square inch or greater. Other materials may be considered on a case-by-case basis **by the local health department**. All materials must:

- (1) be resistant to corrosion and decay; **and**
- (2) have sufficient structural strength to contain sewage, and resist lateral compressive and bearing loads; **and**
- (3) **be of sufficient weight, or have a means of stabilizing the box, to prevent the movement of the box during installation and operation.**

(b) The minimum interior dimension of a distribution box shall be twelve (12) inches.

(c) The distribution box shall be fitted with a safely secured, watertight, **and** removable lid for access. **The If the top of the distribution box is below grade, the box shall** ~~may~~ be fitted with a riser which extends to the ground surface. **The riser shall allow full access to the interior of the distribution box** The riser joints and the lid connection to the riser must be watertight. **The final grade around the distribution box must slope away from the box in all directions.**

(d) The interior bottom of the distribution box shall be at least four (4) inches below the invert elevation of the effluent

ports. A minimum of eight (8) inches freeboard above the invert elevation of the effluent port shall be provided.

(e) The influent port shall be located or baffled to prevent unequal distribution of effluent to the distribution system.

Options for baffling the inlet include:

(1) **Concrete baffles with** ~~If baffles are provided, the baffles and their mounts or retainers~~ **that** shall:

- (4A) provide a passageway for effluent between the box bottom and the bottom edge of the baffle of not more than two (2) inches; and
- (2B) extend to one (1) inch above the top of the inlet.

(f2) An elbow or sanitary tee in the vertical position may be used in place of a baffle, as follows: that shall:

(1) ~~If an elbow is used, the elbow must:~~

- (A) be a ninety (90) degree elbow;
- (B) be turned down into the distribution box with the end of the elbow not more than two (2) inches above the bottom of the distribution box; and
- (C) include a weep hole of sufficient size to break any vacuum, in the upper part of the elbow; or

(23) ~~If a sanitary tee is used tee in the vertical position, with the bottom of the sanitary tee:~~ ~~must be~~

- (A) not more than two (2) inches above the bottom of the distribution box; and
- (B) the top of the sanitary tee at least one (1) inch below the lid.

(g) Each distribution box shall be designed to split the effluent flow equally among the effluent ports. All effluent ports shall be:

- (1) at the same elevation or be fitted with leveling devices manufactured for that purpose with all outlets at the same elevation;
- (2) of the same diameter; and
- (3) located at an elevation at least one (1) inch lower than the influent port.

(Indiana Department of Health; 410 IAC 6-8.3-66; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-67 Pipe specifications

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 67. (a) Piping used in a residential on-site sewage system shall meet or exceed the following applicable standards:

(1) Gravity sewer pipe and gravity effluent sewer pipe shall meet the following standards **or standards in subsection (a)(2) or subsection (b):**

(A) For PVC pipe, the following:

- (i) ASTM D 2665-~~420~~ for four (4) inch and six (6) inch pipe only.
- (ii) ~~ASTM F 891-10 SDR 35 for four (4) inch through eight (8) inch cellular core pipe with minimum pipe stiffness of 50 (PS 50).~~
- (iii) ~~ASTM D 3034-08 for the following: for (AA) SDR 26 and SDR 35 for four (4) inch through fifteen (15) inch pipe.~~
- (BB) ~~SDR 26 with gasketed compression type joints for special crossings above or below potable water lines where the vertical clearance of eighteen (18) inches required in section 57(e)(2) of this rule cannot be met.~~

(B) For ABS pipe, the following:

- (i) ASTM D 2661-~~421~~ for four (4) inch and six (6) inch pipe only.
- (ii) ASTM D 2680-01 (Reapproved 2009) for eight (8) inch through fifteen (15) inch pipe.
- (iii) ~~ASTM D 2751-05 SDR 23.5 or SDR 35 for four (4) inch and six (6) inch pipe only.~~

(C) ASTM F 480-~~4214(2022)~~, Schedule 40 and 80.

(D) Waterworks grade ductile iron pipe with mechanical or tyton joints.

(2) Pressure sewer, effluent force main, manifold, and pressure distribution lateral pipe shall meet the following standards:

(A) For PVC pipe, the following:

- (i) ASTM D 2241-~~209~~ SDR 13.5, SDR 17, SDR 21, or SDR 26.
- (ii) ASTM D 1785-~~0621a~~ Schedule 40, 80, or 120.

(B) For ABS pipe, the following:

- (i) ASTM D 1527 99 (Reapproved 2005) Schedule 40, 80, or 120, with solvent weld fittings.**
- (ii) ASTM D 2282 99 (Reapproved 2005) SDR 13.5, SDR 17, SDR 21, or SDR 26.**

(B) ASTM D 3035-21 DR 7, 9, 11, 13.5, 17 or 21 with any required heat fusion joints being made in accordance with ASTM F2620-20ae2.

(C) Pressure rated fittings shall be used for all pressure rated pipe applications.

(b) Gasketed compression-type joints must be used on pressure sewers when they are located ten (10) feet or less from a water line. Upgraded piping shall consist of one of the following:

(1) waterworks grade ductile iron pipe with tyton or mechanical joints, or

(2) PVC pressure pipe listed in subsection (2)(A) or (2)(C) of this section with an SDR rating of twenty-six (26) or less and compression gasket joints.

(3) ASTM D 3035 DR 7, 9, 11, 13.5, 17 or 21 high density HDPE heat fusion pipe with any heat fusion joints being made in accordance with ASTM F 2620-20ae2.

(c) Soil absorption system gravity distribution laterals shall meet one (1) of the following standards:

(1) Four (4) inch diameter sewer pipe listed in subsection (a)(1) and (a)(2) of this section.

(2) Four (4) inch diameter PVC pipe meeting ASTM D 2729-11.

(3) Four (4) inch diameter smooth interior wall polyethylene pipe meeting ASTM F 810-07 or AASHTO M252-09 Type SP.

(d) Gravity distribution laterals shall have two (2) or three (3) rows of holes separated by one hundred twenty (120) degrees with five-eighths (5/8) inch or three-quarters (3/4) inch hole diameter with holes spaced at five (5) inches or less.

(e) Pipe for subsurface drainage systems shall meet the following standards for polyethylene pipe:

(1) ASTM F 405-05.

(21) ASTM F 667-1216(2021).

(32) NRCS 606, September 2003.

(f) All sewer, effluent sewer, and effluent force main joints shall be sealed according to the manufacturer's recommendations in order

to be watertight and to withstand the pressures exerted on them.

(g) Flexible couplings which are secured mechanically to the sewer pipe by steel hose clamps shall not be used in a residential on-site sewage system outside five (5) feet of the dwelling's foundation.

(Indiana Department of Health; 410 IAC 6-8.3-67; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-68 Aggregate specifications

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 68. (a) Aggregate to be used in soil absorption systems shall be gravel, stone, or other materials listed by the department **and shall meet the requirements for Coarse Aggregates of the INDOT 2022 standard Specifications, Section 904, Aggregates.** Crushed limestone aggregate, if used, shall be rated as forty percent (40%) or less on the Los Angeles abrasion quality requirement of the INDOT 2022 Standard Specifications, Section 904, Aggregates.

(b) Aggregate used in soil absorption systems shall be:

(1) INDOT Spec 2 or shall be a mixture with no aggregate smaller in size than one-half (1/2) inch in diameter nor any aggregate larger than two and one-half (2 1/2) inches in diameter; and

(2) must be larger than the openings in the gravity distribution laterals.

(c) Tire chips may be used in place of stone for soil absorption systems on a one-for-one basis, volumetrically. Tire chips used for soil absorption systems:

(1) must have a nominal size of two (2) inches with chip dimensions being not less than ~~one-half (1/2) three-fourths (3/4)~~ inch and not greater than four (4) inches; and

(2) will have protruding wires which shall be removed from the ground surface during site cleanup.

(d) Fines, sand, and clay shall be removed from the aggregate prior to its placement in the subsurface trench, aggregate bed, or subsurface drainage system. *(Indiana Department of Health; 410 IAC 6-8.3-68; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)*

410 IAC 6-8.3-69 Barrier materials

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 69. (a) The physical characteristics of barrier materials shall have the following minimum average roll values (MARV):

- (1) A grab tensile strength equal to or greater than eighty (80) pounds in machine direction (MD) and cross-machine direction (CD) in accordance with ASTM D 4632-**15a08**.
 - (2) A grab tensile elongation ~~@ at a~~ break of equal to or greater than fifty percent (50%) in MD and CD in accordance with ASTM D 4632-**15a08**.
 - (3) A trapezoidal tear strength equal to or greater than thirty (30) pounds in MD and CD in accordance with ASTM D 4533-**151**.
 - (4) A CBR puncture resistance equal to or greater than one hundred seventy-five (175) pounds in accordance with ASTM D 6241-**104** (Reapproved 2009).
 - (5) A permittivity of equal to or greater than 0.5 sec^{-1} in accordance with ASTM D 4491-**2299a** (Reapproved 2009).
 - (6) A water flow rate equal to or greater than one hundred fifty (150) gallons per minute per square foot in accordance with ASTM D 4355-**2107**.
 - (7) A UV resistance at five hundred (500) hours equal to or greater than seventy percent (70%) strength retained in accordance with ASTM D 4491-**2299a** (Reapproved 2009).
 - (8) An apparent opening size (AOS) (U.S. Sieve) equal to or greater than forty (40) and equal to or less than seventy (70) sieve in accordance with ASTM D 4751-**21a04**.
- (b) The chemical characteristics of barrier materials shall be:
- (1) nonbiodegradable;
 - (2) resistant to acids and alkalies within a pH range of four (4) to ten (10); and
 - (3) resistant to common solvents.

(Indiana Department of Health; 410 IAC 6-8.3-69; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-70 Subsurface trench on-site sewage system site suitability

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 70. (a) On-site sewage system feasibility, location, and selection shall be based on the:

- (1) site evaluation;
- (2) information obtained from the on-site soils evaluation; and
- (3) DDF.

~~If site conditions are acceptable, subsurface trench soil absorption systems are the systems of choice.~~

(b) All of the following site conditions in this section must be met if subsurface trench on-site sewage systems are to be constructed:

- (1) Sufficient area exists on the lot for an appropriately sized subsurface trench on-site sewage system, while meeting the:
 - (A) separation distances of section 57 of this rule; and
 - (B) dispersal area requirements of section 58 of this rule.
- (2) The topographic position of the site on which the on-site sewage system is to be built is convex, hill slope, or flat. If surface and subsurface drainage can be diverted around the site, a toe slope position can be used.
- (3) The site has a slope of fifteen percent (15%) or less.
- (4) Site conditions permit distribution of effluent to each trench of the subsurface soil absorption system so that each trench can be loaded with a proportionate volume of effluent.
- (5) Site conditions permit any seasonal high water table at the site of the proposed subsurface trench soil absorption system to be lowered to at least thirty-four (34) inches below original grade, in accordance with section 59 of this rule.
- (6) ~~When~~ There are no **restrictive or poor filter limiting layers** from original grade to thirty-four (34) inches below

original grade as determined from Table IV below, in a soil developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(A) the on-site soils evaluation report shows that the presence of the horizon is not detrimental to the proper functioning of an on-site sewage system; and

(B) the determination in clause (A) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department.

(7) When there are no soil horizons at the site from the original grade to thirty-four (34) inches below the original grade with:

(A) less than twenty percent (20%) clay by volume and greater than thirty-five percent (35%) coarse fragments by volume; or

(B) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume.

(8) All soil horizons at the site from the original grade to thirty-four (34) inches below the original grade have a soil loading rate of not less than twenty-five hundredths (0.25) and not more than one and twenty hundredths (1.20) gallons per day per square foot as determined from Table IV, as follows:

Table IV - Soil Loading Rates for Subsurface Trench On-Site Sewage Systems (in gpd/ft ²)								
SOIL STRUCTURE CLASSES								
SOIL TEXTURE CLASSES ³	Single Grain	Granular	Strong: Angular, Sub-Angular Blocky, Prismatic	Moderate: Angular, Sub-Angular Blocky, Prismatic	Weak: Angular, Sub-Angular Blocky, Prismatic; Platy ¹	Fragile Characteristics: Very Coarse Prismatic	Structureless, Massive, Friable, V. Friable	Structureless, Massive, Compact, Firm, V. Firm; Platy ²
Gravel, Coarse Sand	>1.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loamy Coarse Sand, Medium Sand	1.20	1.20	N/A	N/A	1.20	N/A	N/A	N/A
Fine Sand, Loamy Sand, Loamy Fine Sand	0.75	0.60	N/A	0.75	0.75	N/A	0.75	N/A
Very Fine Sand, Loamy V. Fine Sand	0.50	0.50	N/A	0.75	0.60	N/A	0.60	N/A
Sandy Loam, Coarse Sandy Loam	N/A	0.75	N/A	0.60	0.60	0.00	0.60	0.00
Fine Sandy Loam, V. Fine Sandy Loam	N/A	0.75	N/A	0.60	0.60	0.00	0.60	0.00
Loam	N/A	0.75	0.75	0.50	0.50	0.00	0.50	0.00
Silt Loam,	N/A	0.75	0.75	0.50	0.30	0.00	0.30	0.00

Silt								
Sandy Clay Loam	N/A	0.60	0.60	0.50	0.30	0.00	0.30	0.00
Silty Clay Loam, Clay Loam, Sandy Clay	N/A	0.60	0.60	0.30	0.25	0.00	0.25	0.00
Silty Clay, Clay	N/A	0.60	0.50	0.30	0.25	N/A	0.25	0.00
Organic Soil Materials	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A
Limnic Soil Materials, Muck, Marl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00
Bedrock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A NOT APPLICABLE								
¹ Naturally occurring platy structure.								
² Platy structure caused by mechanical compaction has a soil loading rate of 0.00 gpd/ft ² unless broken up by methods approved by the department.								
³ Fill, regardless of the presence of relict structure, is not assigned a soil loading rate.								

(c) Subsurface trench soil absorption systems shall not be constructed as follows:

- (1) In areas where surface runoff or subsurface drainage will have an adverse effect on the on-site sewage system, unless the surface runoff or subsurface drainage can be effectively diverted around the system.
- (2) With the bottom of any of the trenches below the **BFE**.
- (3) In areas subject to ponding.
- (4) Wholly or partly located in a drainage way.
- (5) Where compacted soil material is identified in the soil at a depth greater than twelve (12) inches, unless the compaction is broken up by a method approved by the department.

(Indiana Department of Health; 410 IAC 6-8.3-70; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-71 Subsurface trench on-site sewage system type selection criteria

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 71. (a) On-site sewage system feasibility, location, and selection shall be based on the:

- (1) site evaluation;
- (2) information obtained from the on-site soils evaluation; and
- (3) DDF.

(b) A subsurface trench gravity **soil absorption** system may be constructed **for a project with a DDF equal to or greater than four hundred fifty (450) gallons per day** if the:

- (1) ~~DDF of the project is equal to or greater than four hundred fifty (450) gallons per day;~~
- (2) soil loading rate of the site is equal to or greater than twenty-five hundredths (0.25) gallons per day per square foot and equal to or less than seventy-five hundredths (0.75) gallons per day per square foot, as determined from Table IV in section 70(b)(8) of this rule;
- (23) **subsurface** trench bottoms will be at least thirty (30) inches above any **soil** horizon with a **restrictive or poor filter limiting layer**;
 - (A) a soil loading rate less than twenty-five hundredths (0.25) gallons per day per square foot or greater than seventy-five hundredths (0.75) gallons per day per square foot;

(B) any soil horizon in a soil developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(i) the on-site soils evaluation report shows that the presence of the horizon is not detrimental to the proper functioning of an on-site sewage system; and

(ii) the determination in item (i) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department;

(C) less than twenty percent (20%) clay by volume and greater than thirty-five percent (35%) coarse fragments by volume; or

(D) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume; and

(3) subsurface trench bottoms will be at least twenty-four (24) inches above an unamended seasonal high water table, or the seasonal high water table can be lowered to at least twenty-four (24) inches below the entire soil absorption field, in accordance with section 59 of this rule; and

(4) soil absorption system, including either half of a subsurface trench alternating field on-site sewage system, is designed with a total ~~subsurface absorption~~ trench length that does not exceed five hundred (500) ~~lineal~~ linear feet.

(c) A subsurface trench gravity soil ~~on-site sewage absorption~~ system may also be constructed for a project with a DDF less than four hundred fifty (450) gallons per day if the:

(1) DDF of the proposed on-site sewage system is less than four hundred fifty (450) gallons per day;

(2) site has a soil loading rate of equal to or greater than twenty-five hundredths (0.25) gallons per day per square foot and equal to or less than seventy-five hundredths (0.75) gallons per day per square foot, as determined from Table IV in section 70(b)(8) of this rule;

(23) subsurface trench bottoms will be at least twenty-four (24) inches above any ~~restrictive or poor filter limiting layer~~ soil horizon with:

(A) a soil loading rate less than twenty-five hundredths (0.25) gallons per day per square foot or greater than seventy-five hundredths (0.75) gallons per day per square foot;

(B) any soil horizon in a soil developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(i) the on-site soils evaluation report shows that the presence of the horizon is not detrimental to the proper functioning of an on-site sewage system; and

(ii) the determination in item (i) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department;

(C) less than twenty percent (20%) clay by volume and greater than thirty-five percent (35%) coarse fragments by volume; or

(D) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume; and

(3) subsurface trench bottoms will be at least twenty-four (24) inches above an unamended seasonal high water table, or the seasonal high water table can be lowered to at least twenty-four (24) inches below the entire soil absorption field, in accordance with section 59 of this rule; and

(4) soil absorption system, including either half of a subsurface trench alternating field ~~on-site sewage~~ soil absorption system, is designed with a total ~~absorption system~~ ~~subsurface~~ trench length that does not exceed five hundred (500) ~~lineal~~ linear feet.

(d) A subsurface trench ~~soil absorption~~ ~~on-site sewage~~ system that utilizes alternating fields or is ~~flood~~ dosed ~~using~~ pump assisted distribution may be constructed if the:

(1) soil loading rate of the site is equal to or greater than twenty-five hundredths (0.25) gallons per day per square foot and equal to or less than seventy-five hundredths (0.75) gallons per day per square foot, as determined from Table IV in section 70(b)(8) of this rule; and

(2) ~~subsurface~~ trench bottoms will be at least twenty-four (24) inches above any ~~restrictive or poor filter limiting layer~~ horizon with:

(A) a soil loading rate less than twenty-five hundredths (0.25) gallons per day per square foot;

(B) any soil horizon in a soil developed from Wisconsin glacial till that shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(i) the on-site soils evaluation report shows that the presence of the horizon is not detrimental to the

~~proper functioning of an on site sewage system; and
(ii) the determination in item (i) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department;~~

- ~~(C) less than twenty percent (20%) clay by volume and greater than thirty five percent (35%) coarse fragments by volume; or
(D) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume.~~

(3) subsurface trench bottoms will be at least twenty-four (24) inches above an unamended seasonal high water table, or the seasonal high water table can be lowered to at least twenty-four (24) inches below the entire soil absorption field, in accordance with section 59 of this rule.

(e) If any soil absorption system, including either half of an alternating field ~~soil absorption~~ on-site sewage system, is designed with a total **subsurface** trench length greater than five hundred (500) ~~linear~~ linear feet, the absorption system shall be ~~flood~~ dosed using pump assisted distribution.

(f) A **subsurface trench soil absorption system using pressure distribution may be constructed if the:** ~~If any soil horizon within twenty-four (24) inches of the proposed trench bottom has a soil loading rate of one and twenty hundredths (1.20) gallons per day per square foot as determined from Table IV in section 70(b)(8) of this rule, the on-site sewage system shall utilize pressure distribution.~~

(1) soil loading rate of the site is equal to or greater than twenty-five hundredths (0.25) gallons per day per square foot and equal to or less than one and twenty hundredths (1.20) gallons per day per square foot, as determined from Table IV in section 70 of this rule;

(2) there is a soil loading rate equal to one and two-tenths (1.20) gallons per day per square foot, as determined from Table IV in section 70(b)(8) of this rule ~~within twenty-four (24) inches of the subsurface trench bottom, pressure distribution shall be used;~~

(3) subsurface trench bottoms will be at least twenty-four (24) inches above any restrictive or poor filter soil horizon; and

(4) subsurface trench bottoms will be at least twenty-four (24) inches above an unamended seasonal high water table, or the seasonal high water table can be lowered to at least twenty-four (24) inches below the entire soil absorption field, in accordance with section 54 of this rule.

(Indiana Department of Health; 410 IAC 6-8.3-71; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-72 Elevated sand mound on-site sewage system site suitability

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 72. (a) On-site sewage system feasibility, location, selection, and design shall be based on the:

- (1) site evaluation;
- (2) information obtained from the on-site soils evaluation; and
- (3) DDF.

(b) Elevated sand mound on-site sewage systems may be constructed if the following site conditions are met:

(1) Sufficient area exists on the lot for an appropriately sized elevated sand mound on-site sewage system, while meeting the:

- (A) separation distances of section 57 of this rule; and
- (B) dispersal area requirements of section 58 of this rule.

(2) The topographic position of the site on which the elevated sand mound ~~on-site sewage~~ **soil absorption** system is to be built is convex, hill slope, or flat. If surface and subsurface drainage can be diverted around the site, a toe slope position can be utilized.

(3) The site on which the elevated sand mound ~~on-site sewage~~ **soil absorption** system is to be built has a slope of six percent (6%) or less.

(4) Site conditions permit any seasonal high water table at the site of the proposed elevated sand mound on-site sewage system to be lowered to at least twenty (20) inches below original grade, in accordance with section 59 of this rule.

(5) ~~When no soil horizon from the ground surface to twenty (20) inches below the ground surface in a soil developed~~

from Wisconsin glacial till shows effervescence when treated with a ten percent (10%) hydrochloric acid solution, unless:

(A) the on site soils evaluation report shows that the presence of the horizon is not detrimental to the proper functioning of an on site sewage system; and

(B) the determination in clause (A) is made using the guidelines as set forth in the soil manuals, technical bulletins, and handbooks of the NRCS guidelines and as approved by the department.

(6) When there are no soil horizons from the ground surface to twenty (20) inches below the ground surface with:

(A) less than twenty percent (20%) clay by volume and greater than thirty five percent (35%) coarse fragments by volume; or

(B) greater than or equal to twenty percent (20%) clay by volume and greater than sixty percent (60%) coarse fragments by volume.

(75) All soil horizons from the original grade to twenty (20) inches below the original grade have a soil loading rate of not less than twenty-five hundredths (0.25) gallons per day per square foot and not more than one and twenty-hundredths (1.20) gallons per day per square foot as determined from Table V. as follows:

(6) When there are no restrictive or poor filter limiting layers within twenty (20) inches of original grade.

Table V Soil Loading Rates for Elevated Sand Mound On-Site Sewage Systems (in gpd/ft²)

SOIL STRUCTURE CLASSES								
SOIL TEXTURE CLASSES ³	Single Grain	Granular	Strong: Angular, Sub-Angular Blocky, Prismatic	Moderate: Angular, Sub-Angular Blocky, Prismatic	Weak: Angular, Sub-Angular Blocky, Prismatic; Platy ¹	Fragic Characteristics: Very Coarse Prismatic	Structureless, Massive, Friable, V. Friable	Structureless, Massive, Compact, Firm, V. Firm; Platy ²
Gravel, Coarse Sand	>1.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loamy Coarse Sand, Medium Sand	1.20	1.20	N/A	N/A	1.20	N/A	N/A	N/A
Fine Sand, Loamy Sand, Loamy Fine Sand	0.60	0.60	N/A	0.60	0.60	N/A	0.60	N/A
Very Fine Sand, Loamy V. Fine Sand	0.50	0.50	N/A	0.50	0.50	N/A	0.50	N/A
Sandy Loam, Coarse Sandy Loam	N/A	0.60	N/A	0.60	0.60	0.00	0.60	0.00
Fine Sandy Loam, V. Fine Sandy Loam	N/A	0.60	N/A	0.60	0.60	0.00	0.60	0.00
Loam	N/A	0.50	0.50	0.50	0.50	0.00	0.50	0.00
Silt Loam, Silt	N/A	0.50	0.50	0.50	0.50	0.00	0.50	0.00

Sandy Clay Loam	N/A	0.50	0.50	0.50	0.50	0.00	0.50	0.00
Silty Clay Loam, Clay Loam, Sandy Clay	N/A	0.25	0.25	0.25	0.25	0.00	0.25	0.00
Silty Clay, Clay	N/A	0.25	0.25	0.25	0.25	N/A	0.25	0.00
Organic Soil Materials, Muck, Marl	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A
Limnic Soil Materials	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00
Bedrock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A NOT APPLICABLE								
¹ Naturally occurring platy structure.								
² Platy structure caused by compaction has a soil loading rate of 0.00 gpd/ft ² unless broken up by methods approved by the department.								
³ Fill, regardless of the presence of relict structure, is not assigned a soil loading rate.								

(c) Elevated sand mound soil absorption systems shall not be constructed as follows:

- (1) In areas where surface runoff or subsurface drainage will have an adverse effect on the on-site sewage system, unless the surface runoff or subsurface drainage can be effectively diverted around the system.
- (2) Where the original grade is below the **RBFE**.
- (3) In areas subject to ponding.
- (4) Wholly or partly located in a drainage way.
- (5) Where compacted soil material is identified in the soil at a depth greater than twelve (12) inches, unless
 - (A) the compaction is broken up by a method approved by the department; and
 - (B) for every inch of compaction below twelve (12) inches, the limiting layer shall be one inch deeper than the twenty (20) inch minimum required for an elevated sand mound.

(Indiana Department of Health; 410 IAC 6-8.3-72; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-73 Table for on-site sewage system selection

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 73. On-site sewage system selection is summarized in Table VI as follows:

Table VI - Table for On-Site Sewage System Selection Based on Requirements of 410 IAC 6-8.3

Site Requirements	Subsurface Trench On-Site Sewage Systems				Elevated Sand Mound On-Site Sewage Systems (Sec. 72)
	Gravity Flow ¹ (Sec. 70, 71)	Flood Dosing or Alt. Fields ¹ (Sec. 70, 71)	Flood Dosing ¹ (Sec. 70, 71)	Pressure Dist. (Sec. 70, 71)	
Slope	≤ 15%	≤ 15%	≤ 15%	≤ 15%	≤ 6%
Design Daily Flow	≥ 450	< 450	Any	Any	Any

Acceptable Loading Rate Range for Determining System Size	≥ 0.25	≥ 0.25	≥ 0.25	≥ 0.25	≥ 0.25	≥ 0.25
	≤ 0.75	≤ 0.75	≤ 0.75	≤ 0.75	≤ 1.20	≤ 1.20
Distance from Trench Bottom (Ground Surface for Mounds) to Layer with a Soil Loading Rate < 0.25 gpd/ft ²	≥ 30	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Distance from Trench Bottom (Ground Surface for Mounds) to Layer with a Soil Loading Rate > 1.20 gpd/ft ²	≥ 30 ²⁴	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Distance from Trench Bottom (Ground Surface for Mounds) to Layer with a Soil Loading Rate = 1.20 gpd/ft ²	≥ 30 ²⁴	≥ 24	≥ 24	≥ 24	Press. Dist. required for SLR = 1.20	≥ 0
Distance from Trench Bottom (Ground Surface for Mounds) to a Soil Horizon Developed from Wisconsin Glacial Till That Shows Effervescence ³	≥ 30	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Distance from Trench Bottom (Ground Surface for Mounds) to Soil Horizon with < 20% Clay and > 35% Coarse Fragments by Volume	≥ 30	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Distance from Trench Bottom (Ground Surface for Mounds) to Soil Horizon with > 20% Clay and > 60% Coarse Fragments by Volume	≥ 30	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Distance from Trench Bottom (Ground Surface for Mounds) to Seasonal High Water Table ²	≥ 24	≥ 24	≥ 24	≥ 24	≥ 24	≥ 20
Total Linear Feet of Trench	≤ 500	≤ 500	≤ 500 for Alt. Fields	Any	Any	N/A

¹These conditions are also suitable for subsurface trench pressure distribution on-site sewage systems.

²For subsurface trench systems, if the distance from trench bottom to seasonal high water table is less than twenty-four (24) inches, drainage must be installed in accordance with section 59 of this rule. For elevated sand mound systems, if the depth of the seasonal high water table is less than twenty (20) inches below the ground surface, drainage must be installed in accordance with section 59 of this rule.

³See Sections 58(a)(2)(E), 70(b)(6), 71(b)(3)(B), 71(c)(3)(B), 71(d)(2)(B) and 72(b)(5).

This chart does not include considerations such as the specific landscape features that must be met, the size of the soil absorption system, the size of the area necessary for construction of the soil absorption system on the contour with necessary setback and separation distances, dispersal area, the diversion of surface drainage, the feasibility of subsurface drainage, the ability to obtain easements, etc.

This chart does not take into consideration the necessity to pump the effluent to overcome differences in elevation (when a subsurface trench gravity system might otherwise be constructed).

(Indiana Department of Health; 410 IAC 6-8.3-73; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; errata filed Dec 12, 2012, 2:16 p.m.: 20121226-IR-410120156ACA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 74. (a) The minimum absorption area (in square feet) required for each subsurface trench soil absorption system shall be based on the following:

(1) The number of bedrooms and bedroom equivalents in the dwelling.

(2) The appropriate soil loading rate (in gallons per day per square foot) determined from Table IV in section 70(b)(8) of this rule. The soil loading rate used for this computation shall be the soil loading rate of the most restrictive **soil** horizon in the first twenty-four (24) inches below the trench bottom.

(3) The absorption area shall be computed using the following formula:

$$\text{Area} = \frac{\text{DDF} (150 \text{ g} \times \text{number of bedrooms and bedroom equivalents})}{\text{Soil loading rate in gpd/sq. ft. gpd/ft.}^2}$$

(b) Subsurface trench soil absorption systems shall be as long and narrow as the site permits while not exceeding maximum trench length.

(c) All subsurface trench ~~on-site sewage~~ **soil absorption** systems shall be located in accordance with the separation distances shown in Table I in section 57(a) of this rule.

(d) **Before the start of any construction on the property, the following areas must be protected from disturbance:**

(1) **The soil absorption system area.**

(2) **The dispersal area.**

(3) **The subsurface drainage system area.**

(4) **The set-aside area (if required in the approved plan).**

(5) **Areas designated for future expansion (if required in the approved plan).**

(e) **The local health department may require any or all of the items in subsection (d) to be marked at the site.**

(f) Special caution shall be taken to prevent wheeled and tracked vehicles from compacting the area selected for placement of the soil absorption system before, during, and after construction of the **subsurface** trenches, especially during wet weather. Alteration of soil structure by movement of vehicles, **or by other means**, may be grounds for rejection of the site or the soil absorption system, or both.

(g) Subsurface soil absorption systems shall not be constructed during periods of wet weather when the soil is sufficiently wet at the depth of installation to exceed its plastic limit, as follows:

(1) This **subsection** applies to soils classified as the following:

- (A) Sandy loam.
- (B) Silt loam.
- (C) Loam.
- (D) Clay loam.
- (E) Silty clay loam.
- (F) Sandy clay.
- (G) Silty clay.
- (H) Clay.

(2) Sufficient samples shall be evaluated throughout the soil absorption system site, from the soil surface to the proposed depth of the **subsurface** soil absorption system trench bottoms, to assure that the plastic limit of the soil is not exceeded.

(3) The plastic limit of a soil shall be considered to have been exceeded when the soil can be rolled between the palms of the hands to produce threads one-eighth (1/8) inch in diameter without breaking apart and crumbling.

(h) **Excessive smearing of the usable absorption trench sidewalls or bottom during construction may:**

(1) **result in irreversible damage to the soil infiltrative surface; and**

(2) **be grounds for rejection of the site or the on-site sewage system, or both.**

(i) Vegetation, **including trees**, at the soil absorption system site that would interfere with the **on-site** soils evaluation, system layout, or system construction shall be cut and removed prior to the **on-site soil evaluation, system layout, or system** installation without causing compacted soil material.

(j) If trees are present within the proposed soil absorption system

(1) **soil absorption** **Subsurface** trenches may be routed around trees provided the trenches follow the contour of the site;

or

(2) Tree stumps and root balls may be removed provided the resulting excavation will not exceed the permit requirements for width and depth of the soil absorption trench. **The local health department may require the soil absorption system area to be re-evaluated by the soil scientist after tree removal to ensure there is no compaction created at the site.**

(h) ~~Excessive smearing of the usable absorption trench sidewalls or bottom during construction may:~~

(1) ~~result in irreversible damage to the soil infiltrative surface; and~~

(2) ~~be grounds for rejection of the site or the on-site sewage system, or both.~~

(ik) The residential sewer shall be a minimum of four (4) inches in diameter. Four (4) inch sewers shall be installed with a positive slope of:

(1) not less than four (4) inches in twenty-five (25) feet; and

(2) not more than thirty-six (36) inches in twenty-five (25) feet.

(jl) A six (6) inch residential sewer, if utilized, shall be installed with a positive slope of:

(1) not less than two (2) inches in twenty-five (25) feet; and

(2) not more than thirty-six (36) inches in twenty-five (25) feet.

(km) A vertical drop may be installed in a residential sewer. Each vertical drop shall have a cleanout located immediately upslope.

(hn) Effluent sewers shall meet the following requirements:

(1) Effluent sewers shall be a minimum of four (4) inches in diameter.

(2) Effluent sewer pipe shall have a positive grade of at least two and four-tenths (2.4) inches per one hundred (100) feet or a grade of two-tenths percent (0.2%).

(mo) All sewer and effluent sewer joints shall be sealed according to the manufacturer's recommendations in order to be watertight and to withstand the pressures exerted on them.

(np) The absorption trenches of a subsurface trench soil absorption system shall be constructed along the contour.

(eq) The minimum depth from original grade to the bottom of a trench of a subsurface trench soil absorption system shall not be less than ten (10) inches, ~~and~~ The maximum depth from final grade to the bottom of a trench of a subsurface trench soil absorption system shall not be more than thirty-six (36) inches.

(pr) All subsurface trench soil absorption systems shall be designed to utilize trenches with a minimum width of eighteen (18) inches and a maximum trench width of thirty-six (36) inches.

(qs) There shall be a minimum separation of seven and one-half (7 1/2) feet, on center, between soil absorption system trenches, measured perpendicular to the trenches.

(rt) No single absorption trench in a subsurface trench soil absorption system shall exceed one hundred (100) feet in length, except for subsurface trench pressure distribution on-site sewage systems.

(su) Each trench and distribution lateral in a subsurface trench soil absorption system shall be uniformly level throughout its length and width.

(tv) The distal ends of distribution laterals and **subsurface** trenches shall not be tied together.

(tw) The distal end of each distribution lateral shall be capped, with the cap joint sealed according to the manufacturer's recommendations in order to be watertight and to withstand the pressures exerted on it.

(vx) Perforated pipe distribution laterals in the absorption trench of a subsurface trench soil absorption system shall be completely surrounded by aggregate that meets the specifications in section 68 of this rule. There shall be at least six (6) inches of aggregate below the pipe.

(wy) The minimum depth of aggregate above the distribution laterals shall be:

(1) two (2) inches throughout the entire length and width of trenches having a depth of twelve (12) inches or greater; or

(2) two (2) inches above the distribution lateral for the entire length of trenches having a depth of ten (10) inches to twelve (12) inches.

(z) The aggregate used in a subsurface trench soil absorption system shall be covered with a geotextile fabric barrier in such a manner as to prevent the aggregate from becoming clogged with the earth fill. The barrier material shall:

(1) meet the minimum requirements in section 69 of this rule;

(2) be placed on the aggregate to prevent soil particle movement into the aggregate; and

(3) cover the aggregate from side to side and from end to end.

(aa) **A local health department may require an inspection pipe to be installed at the distal end of one subsurface trench in each separate distribution network in the system. The inspection pipe shall:**

(1) be at least eight (8) inches in diameter;

- (2) be constructed of piping which meets the requirements of section 67(a);
 - (3) extend above final grade with the ground surface sloping away in all directions;
 - (4) be capped with a safely secured, easily removable cap or lid constructed of material compatible with the pipe used;
 - (5) be extended to the absorptive surface; and
 - (6) be adequately secured in the trench with rebar or similar material to ensure the inspection pipe does remains stable and is not pulled out of the ground when opened.
- (bb) A minimum of twelve (12) inches of **soil cover material** shall be provided over the aggregate in the trenches, and any fill required to provide cover shall be crowned over the entire soil absorption system to promote surface runoff. **The minimum soil cover material does not apply to residential sewers, effluent sewers, or distribution boxes.**
- (cc) Tire chips, if used for aggregate, will have protruding wires and shall be removed from the ground surface during site cleanup.
- (dd) **All subsurface soil absorption system sites shall be seeded or sodded with grasses adapted to the area. If seeded, the site shall be protected by a cover of straw, burlap, or some other biodegradable material that will protect it against erosion.** (Indiana Department of Health; 410 IAC 6-8.3-74; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-75 Subsurface trench gravity ~~on-site sewage~~ **soil absorption** systems: design and construction requirements

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

- Sec. 75. (a) Subsurface trench gravity ~~on-site sewage~~ **soil absorption** systems shall meet all of the requirements of:
- (1) section 74 of this rule; and
 - (2) this section.
- (b) A distribution box or series of distribution boxes shall be installed between the septic tank and the subsurface soil absorption system, and each ~~absorption system~~ **subsurface soil absorption** trench shall be connected directly to a distribution box using an effluent sewer **pipe**.
- (c) Distribution boxes shall be installed level on either undisturbed soil, sand, sand mix, aggregate not larger than one-half (1/2) inch in diameter, or engineered base, and the outlets shall be checked to assure that they are at a uniform elevation.
- (d) Effluent sewer pipe in a subsurface trench gravity on-site sewage system shall meet the following requirements:
- (1) For installation prior to a distribution box, effluent sewer pipe shall be bedded **and stabilized** according to manufacturer requirements and backfilled with debris-free soil material or aggregate without damaging the pipe.
 - (2) For installation after a distribution box, effluent sewer pipe shall be **bedded and stabilized, bedded, and backfilled according to manufacturer requirements, and backfilled** without damaging the pipe with debris-free soil material to prevent the movement of effluent along the outside of the pipe.
- (e) The invert elevation of the end of each effluent sewer pipe connected to a distribution box shall be at the same elevation so that each gravity distribution lateral receives an equal volume of effluent.
- (f) Each effluent sewer **pipe** from an outlet of a distribution box that directly serves a trench shall extend into the aggregate in the trench **or into the first chamber in the trench**.
- (g) All soil absorption system gravity distribution laterals shall have an internal diameter of four (4) inches.
- (h) Gravity distribution laterals in the aggregate trenches shall be installed level along their length **and meet the following requirements:**
- (1) For two (2) hole gravity distribution laterals, the laterals shall be placed in the aggregate with the rows of holes located at one hundred twenty (120) and two hundred forty (240) degrees from vertical (rows of holes at four (4) o'clock and eight (8) o'clock);
 - (2) For three (3) hole gravity distribution laterals, the laterals shall be placed in the aggregate with the rows of holes located at one hundred twenty (120), two hundred forty (240), and three hundred sixty (360) degrees from vertical (rows of holes at four (4) o'clock, eight (8) o'clock, and twelve (12) o'clock).
- (i) In order to provide equal flow distribution in gravity feed subsurface soil absorption **trench** systems, each absorption field trench must be individually connected to a distribution box. The distribution box shall be at least five (5) feet from the proximal end of each soil absorption field trench and shall be connected to the absorption field trench by unperforated pipe that is laid with an **aggregate- gravel** free backfill to the point where the unperforated pipe enters the aggregate **or the chamber** in the

trench. All absorption trenches served by a common distribution box must be constructed so that each trench served by the distribution box is loaded with an equal volume of effluent. **Effluent shall be distributed proportionately to each square foot of absorptive area throughout the soil absorption field.** (*Indiana Department of Health; 410 IAC 6-8.3-75; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-76 Subsurface trench flood dosed ~~on-site sewage~~ **soil absorption** systems: design and construction requirements

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 76. (a) Subsurface trench flood dosed on-site sewage systems shall meet all of the requirements of:

- (1) sections 74 and 75 of this rule; and
- (2) this section.

(b) When a subsurface trench flood dosed soil absorption system is used, the dosing effluent pump shall be sized, and its controls set to deliver the DDF to the soil absorption field in each dose. Effluent pump selection shall be based on manufacturer's pump curves for the required discharge rate from Table VII, as follows, at the total **dynamic** head imposed on the pump:

Table VII – Required Effluent Pump Discharge Rates for Subsurface Trench Flood Dosed On-Site Sewage Soil Absorption Systems	
Number of Bedrooms	Discharge Rate in Gallons per Minute
1-2	30-35
2	30-35
3	30-45
4	30-60
5	38-75
6+	45-90

(c) The total **dynamic** head for a subsurface trench flood dosed soil absorption system shall be the elevation difference between the effluent pump off **position** and the highest point in the force main or the outlet of the effluent force main in the distribution box, whichever is the highest elevation, in addition to the friction loss in the effluent force main expressed in feet.

(d) The effluent force main shall drain unless it is installed below the frost line, as listed in Table VIII, as follows, and designed so that no effluent remains in any portion of the effluent force main located above the frost line:

Table VIII – Frost Penetrations in Indiana (in inches)							
Adams	60	Franklin	48	Lawrence	48	Rush	54
Allen	60	Fulton	60	Madison	60	St. Joseph	60
Bartholomew	48	Gibson	42	Marion	54	Scott	36
Benton	60	Grant	54	Marshall	60	Shelby	54
Blackford	60	Greene	54	Martin	48	Spencer	36
Boone	54	Hamilton	54	Miami	60	Starke	60
Brown	48	Hancock	54	Monroe	48	Steuben	60
Carroll	60	Harrison	36	Montgomery	60	Sullivan	54
Cass	60	Hendricks	54	Morgan	48	Switzerland	42
Clark	36	Henry	54	Newton	60	Tippecanoe	60
Clay	54	Howard	60	Noble	60	Tipton	60
Clinton	54	Huntington	60	Ohio	42	Union	48
Crawford	36	Jackson	48	Orange	42	Vanderburgh	36
Daviess	48	Jasper	60	Owen	54	Vermillion	60
Dearborn	48	Jay	60	Parke	60	Vigo	60
Decatur	48	Jefferson	42	Perry	36	Wabash	60
DeKalb	60	Jennings	48	Pike	42	Warren	60

Delaware	60	Johnson	54	Porter	60	Warrick	36
Dubois	42	Knox	48	Posey	42	Washington	36
Elkhart	60	Kosciusko	60	Pulaski	60	Wayne	54
Fayette	54	LaGrange	60	Putnam	54	Wells	60
Floyd	36	Lake	60	Randolph	54	White	60
Fountain	60	LaPorte	60	Ripley	48	Whitley	60

(e) In addition to the liquid holding capacity of a dosing tank stated in section 62(b) of this rule the following shall apply:

(1) If the effluent force main drains to the soil absorption system, or if it does not drain between doses, the **total** dose volume shall be the DDF.

(2) If the effluent force main drains back to the dosing tank, the **total** dose volume shall be the DDF plus the volume contained in the **portion of the effluent force main that drains back to the dosing tank**.

(f) The distal end of the effluent force main in the distribution box must be ~~fitted with an elbow turned down or a sanitary tee, or else the distribution box must be baffled~~. **baffled in accordance with subsection 66(e) of this rule**.

(g) The minimum inside diameter of the effluent force main shall be one (1) inch. The maximum inside diameter of the effluent force main shall be four (4) inches.

(h) Tables IX and X, as follows, shall be used in determining friction losses in the effluent force mains and manifold when plastic pipe is used:

Table IX – Friction Losses in Plastic Pipe (per 100 feet of pipe)														
Pipe Diameter, Flow (gpm), Velocity (v) ² , and Friction Loss Head (H _f) ¹														
Flow (gpm)	1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"	
Q	v	H _f	v	H _f	v	H _f	v	H _f	v	H _f	v	H _f	v	H _f
1	0.37	0.11												
2	0.74	0.38	0.43	0.10										
3	1.11	0.78	0.64	0.21	0.47	0.10								
4	1.49	1.31	0.86	0.35	0.63	0.16								
5	1.86	1.92	1.07	0.52	0.79	0.24								
6	2.23	2.70	1.29	0.71	0.95	0.33	0.57	0.10						
8	2.97	4.59	1.72	1.19	1.26	0.56	0.77	0.17						
10	3.71	6.90	2.15	1.78	1.58	0.83	0.96	0.25	0.67	0.11				
15	5.57	14.7	3.22	3.76	2.37	1.74	1.43	0.52	1.01	0.22				
20	7.43	25.2	4.29	6.42	3.16	2.96	1.91	.87	1.34	0.37	0.87	0.13		
25	9.28	38.6	5.37	9.74	3.94	4.46	2.39	1.29	1.68	0.54	1.09	0.19		
30			6.44	13.6	4.73	6.27	2.87	1.81	2.01	0.76	1.30	0.26		
35			7.51	18.2	5.52	8.40	3.35	2.42	2.35	1.01	1.52	0.35	0.88	0.10
40			8.59	23.6	6.30	10.7	3.83	3.12	2.68	1.28	1.74	0.44	1.01	0.12
45					7.09	13.5	4.30	3.85	3.02	1.54	1.95	0.55	1.13	0.15
50					7.88	16.5	4.78	4.68	3.35	1.93	2.17	0.67	1.26	0.18
60					9.47	23.6	5.74	6.62	4.02	2.72	2.60	0.94	1.51	0.25
70						6.70	8.86	4.69	3.67	3.04	1.25	1.76	0.33	
80						7.65	11.5	5.36	4.69	3.47	1.59	2.02	0.42	
90						8.60	14.3	6.03	5.83	3.91	1.99	2.27	0.52	
100								6.70	7.13	4.34	2.42	2.52	0.63	
125									8.38	10.9	5.43	3.72	3.15	0.96
150											6.51	5.16	3.78	1.34
175											7.60	6.90	4.41	1.79

200								8.68	8.93	5.04	2.27
225										5.67	2.84
250										6.30	3.37
275										6.93	4.13
300										7.56	4.87
325										8.19	5.70

¹ This figure is based on flows for PVC Schedule 40 pipe (flow coefficient: C-150). Other values for friction loss may be used if documentation from the pipe manufacturer is provided with the plan submittal. Calculations using the Hazen-Williams equation may be used if provided with the plan submittal.

² Flow velocity must be at least 2 fps; flow velocities above 5 fps should be avoided.

Table X - Plastic Pipe Fittings: Friction Loss - Equivalent Length of Straight Pipe (ft.) *

Fitting:	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
90° elbow, standard sharp, inside radius	5.3	6.7	7.5	8.6	9.3	11.1	13.1
90° elbow, long sweep radius	2.5	3.8	4.0	5.7	6.9	7.9	12.0
45° elbow, standard	1.4	1.8	2.1	2.6	3.1	4.0	5.1
Tee Flow (run flow)	1.7	2.3	2.7	4.3	5.1	6.2	8.3
Tee Flow (branch flow)	6.0	7.0	8.0	12.0	15.0	16.0	22.0
Gate Valve	0.6	0.8	1.0	1.5	1.6	2.0	3.0
Male/Female adapter	2.0	2.8	3.5	4.5	5.5	6.5	9.0

*Assigned values. Other values for friction loss may be used if documentation from the pipe manufacturer is provided with the plan submittal.

(Indiana Department of Health; 410 IAC 6-8.3-76; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Apr 9, 2014, 9:51 a.m.: 20140507-IR-410130350FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-77 Subsurface trench alternating field ~~on-site sewage~~ soil absorption systems: design and construction requirements

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 77. (a) Subsurface trench alternating field on-site ~~sewage~~ soil absorption systems shall meet all of the requirements of:

- (1) sections 74 and 75 of this rule; and
- (2) this section.

(b) Each side of the soil absorption system shall contain the total square footage of soil absorption area calculated from section 74(a) of this rule.

(c) A diversion valve shall be installed between the septic tank and the distribution boxes. An access riser, extending to the ground surface, shall be installed over the diversion valve.

(d) **Only one soil absorption field shall be used at a time. The diversion valve shall be turned to alternate flows when necessary, but no less often than once per year.** (Indiana Department of Health; 410 IAC 6-8.3-77; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-78 Subsurface trench pressure distribution ~~on-site sewage~~ soil absorption systems: design and construction requirements

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 78. (a) Subsurface trench pressure distribution ~~on-site sewage~~ soil absorption systems shall meet all of the requirements of:

- (1) section 74 of this rule; and
- (2) this section.
- (b) Each pipe connected to an outlet in the manifold of a subsurface pressure distribution on-site sewage system shall be counted as a separate distribution lateral.
- (c) An inline residual pressure of two and five-tenths (2.5) to three (3) feet of head shall be maintained in the pressure distribution lateral at the highest elevation in the soil absorption system during pumping.
- (d) The effluent pump shall be sized and its controls set as follows:
- (1) When a subsurface pressure distribution ~~on-site sewage~~ **soil absorption** system is designed using a soil loading rate of less than one and two-tenths (1.2) gallons per day per square foot, the pump shall deliver the DDF to the soil absorption field in each dose.
- (2) When a subsurface pressure distribution on-site ~~sewage~~ **soil absorption** system is designed using a soil loading rate of one and two-tenths (1.2) gallons per day per square foot, the pump shall deliver ~~four (4) doses each day, each dose being approximately one-fourth (1/4) of the DDF in each dose to the soil absorption field, with a maximum of four (4) doses per day.~~
- (e) The effluent force main shall drain unless it is installed below the frost line, as listed in Table VIII in **subsection 76(d)** of this rule and designed so that no effluent remains in any portion of the effluent force main located above the frost line.
- (f) The liquid holding capacity of the dosing tank shall be determined as follows:
- (1) If the effluent force main drains to the subsurface pressure distribution on-site sewage system, or if it does not drain between doses, the dosing tank volume shall be the dose calculated using **subdivision subsection** (d)(1) or (d)(2), whichever is applicable.
- (2) If the effluent force main drains back to the dosing tank, the dosing tank volume shall be the dose calculated using subsection (d)(1) or (d)(2), whichever is applicable, plus the volume contained in the effluent force main **that drains back to the dose tank.**
- (3) Additional dosing tank capacity must be provided to:
- (A) keep the dosing tank effluent pump submerged at all times; ~~and~~
- (B) provide sufficient freeboard for a high water alarm; ~~and~~
- (C) **the local health department may require a minimum reserve capacity of one hundred fifty (150) gallons above the on position of the high water alarm.**
- (g) For installation for a subsurface trench pressure distribution on-site sewage system, the effluent force main shall be stabilized and backfilled **per manufacturer's requirements** without damaging the pipe with debris-free soil material to prevent the movement of effluent along the outside of the pipe.
- (h) The minimum inside diameter of the effluent force main shall be one and one-half (1 ½) inches. The maximum inside diameter of the effluent force main shall be four (4) inches.
- (i) Tables IX and X in section 76(h) of this rule shall be used in determining friction losses in the effluent force mains and manifold when plastic pipe is used.
- (j) The minimum inside diameter of the manifold shall be one (1) inch. The maximum inside diameter of the manifold shall be six (6) inches. The manifold pipe diameter shall be determined from Table XI, as follows:

Table XI - Manifold Diameters (in.) for Various Manifold Lengths, Number of Laterals and Discharge Rates

Flow/Lateral (gpm)	Manifold Length (ft.)																		Flow/Lat (gpm)																		
	Number of Laterals with Central Manifold																																				
5	10	15	20	25	30	35	40	45	50	6	8	10	12	14	6	8	10	12	14	16	6	8	10	12	14	16	18	20	6	8	10	12	14	16	18	20	22
Central Manifold	5	1"	1 1/4"	1 1/2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	4"	10			
	10	1 1/4"	1 1/2"	2"	2"	2"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	20			
	15	1 1/2"	2"	3"	3"	3"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	30			
	20	2"	3"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	40				
	25	3"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	50				
1 3 2 3 4 5 2 3 4 5 6 3 4 5 6 7 3 4 5 6 7 3 4 5 6 7 8 3 4 5 6 7 8 9 3 4 5 6 7 8 9 10 3 4 5 6 7 8 9 10 11																																					
Number of Laterals with End Manifold																																					
Computed for plastic pipe only. That Hazen-Williams equation was used to compute headlosses through each segment (Hazen-Williams C 150). The maximum manifold length for a given lateral discharge rate and spacing was defined as that length at which the difference between the heads at the distal and supply ends of the manifold exceeded ten percent (10%) of the head at the distal end.																																					

(k) The minimum inside diameter of the pressure distribution laterals from the manifold shall be one (1) inch. The maximum inside diameter of the pressure distribution laterals shall be three (3) inches.

(l) Table XII, as follows, **or specific information provided by the pipe supplier, shall** ~~may~~ be used to calculate pipe volumes:

Table XII – Pipe Volume for Various Diameter Pipes (gal/ft)

Pipe Diameter (in)	1	1 1/4	1 1/2	2*	3*	4*
Volume (gal/ft)	.045	.078	.106	.174	.384	.650

*These diameters and pipe volumes are for calculating the total volume of the effluent force main. They are not used for calculating volumes of pressure distribution laterals.

(m) The pressure distribution laterals shall have one (1) row of holes spaced in accordance with Table XIII as follows:

Table XIII – Soil Loading Rates Versus Pressure Distribution Lateral Hole Spacing for Subsurface Trench Pressure Distribution **Soil Absorption** Systems

Soil Loading Rates used for system sizing: Gallons per Day per Square Foot	Lateral Hole Spacing Feet Between Holes
1.2	3
0.75	3 to 5
0.5 and 0.6	3 to 6
0.25 and 0.3	3 to 7

(n) The holes in the pressure distribution laterals shall be placed in the **subsurface** trenches facing down, and all burrs shall be removed from the edges of the holes.

(o) The hole size in the pressure distribution laterals shall be one-fourth (1/4) inch.

(p) The perforation discharge rate shall be determined in accordance with the formula used to compute the flow from a hole in the pressure distribution lateral at inline head as follows:

$$Q = 11.78(d^2)(\sqrt{H})$$

Where: $Q = \frac{\pi D^2 H}{4}$
 D = the diameter of the hole in the pipe.
 H = the inline head at the hole.

Table XIV, as follows, gives the discharge rates at varying heads that would be obtained using the formula above in which "d" equals one-fourth (1/4) inch diameter holes:

Table XIV – Perforation Discharge Rates in GPM at Varying Inline Heads for 1/4 Inch Diameter Hole Size	
Inline Head (feet)	Perforation Discharge Rate (gallons per minute)
2.5	1.17
3.0	1.28
3.5	1.38
4.0	1.47
4.5	1.56
5.0	1.65
5.5	1.73

(q) Effluent pump selection for soil absorption systems using pressure distribution shall be based on the manufacturer's pump curves for the required pump discharge rate at the total **dynamic** head imposed on the pump. The pump discharge rate for level ~~on-site sewage~~ soil absorption systems, **where all trench bottoms are installed with no more than six (6) inches of elevation difference**, is calculated by using the following formula:

$$\text{Pump discharge rate (gpm)} = \text{Perforation discharge rate (gpm)} \times \text{total number of perforations}$$

To obtain the pump discharge rate required for sloping sites, **where elevations of trench bottoms vary more than six (6) inches**, the pump discharge rate must be calculated individually for each pressure distribution lateral using the pump discharge rate formula based on the pressure on that line, and the sum of the calculated discharge rates determined for each individual line.

(r) The end of each pressure distribution lateral shall be capped, and a one-fourth (1/4) inch hole shall be drilled in the upper half of the end cap.

(s) All joints, including the end cap, shall be sealed according to manufacturer's recommendations in order to be watertight and to withstand the pressures exerted on them. (*Indiana Department of Health; 410 IAC 6-8.3-78; filed Oct 19, 2012, 2:06 p.m.; 20121114-IR-410120156RFA; readopted filed Sep 26, 2018, 2:48 p.m.; 20181024-IR-410180328RFA*)

410 IAC 6-8.3-79 Elevated sand mound ~~on-site sewage~~ soil absorption systems: design of the aggregate bed

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 79. (a) **On-site sewage system feasibility, location, and selection shall be based on the:**

- (1) site evaluation;**
- (2) information obtained from the on-site soils evaluation; and**
- (3) DDF.**

(b) The size of the aggregate bed shall be determined from the following:

(1) The minimum area of the aggregate bed shall be calculated as:

$$\text{DDF} = \frac{150 \text{ gal/gpd} \times \text{number of bedrooms and bedroom equivalents}}{1.2 \text{ gpd/ft}^2}$$

~~Minimum aggregate bed area (ft²) (AB) = 1.2 gpd/ft²~~

(2) The dimensions of the aggregate bed shall be as long and narrow as the site allows, while not exceeding the maximum bed width calculated in **subdivision clause (b)(3)(A)**.

(3) The maximum width of the aggregate bed shall meet the following requirements:

$$(A) \text{ The maximum aggregate bed width (ft.)} (AB_w) = 0.83 \text{ ft}^2/\text{gpd} \times \sqrt{\frac{\text{DDF (gpd)} \times \text{SLR (gpd/ft}^2)}{n}}$$

where: 0.83 is a conversion factor (ft^2/gpd)

SLR is soil loading rate, and

where: DDF is design daily flow, and

n is determined by the DDF in this chart

DDF (gpd)	n
≤ 1500	3
1501-3000	4
3001-4000	5

This number may be rounded down to the nearest whole number.

(B) For on-site sewage systems with a DDF of seven hundred fifty (750) gallons per day or less, the width of the aggregate bed shall be at least four (4) feet and not greater than ten (10) feet. The aggregate bed width shall not exceed the maximum bed width calculated in clause (A).

(C) For on-site sewage systems with a DDF of greater than seven hundred fifty (750) gallons per day, the following apply:

(i) If the soil loading rate is fifty-hundredths (0.50) gallons per day per square foot (gpd/ft^2) or less, the width of the aggregate bed shall be not greater than fifteen (15) feet, and shall not exceed the maximum **aggregate** bed width calculated in clause (A).

(ii) If the soil loading rate is greater than fifty-hundredths (0.50) gallons per day per square foot (gpd/ft^2), the width of the aggregate bed shall be not greater than twenty (20) feet, and shall not exceed the maximum **aggregate** bed width calculated in clause (A).

(4) The minimum length of the aggregate bed shall be calculated as:

$$\frac{\text{Minimum aggregate bed area (ft}^2) (AB)}{\text{Maximum aggregate bed width (ft)} (AB_w)} = \frac{\text{Minimum length of the aggregate bed (AB}_L)}{}$$

(5) The depth of the aggregate bed shall be at least the sum of:

(A) at least six (6) inches of aggregate below the pressure distribution lateral;

(B) the outside diameter of the pressure distribution lateral; and

(C) at least two (2) inches of aggregate above the pressure distribution lateral.

(b) The aggregate bed shall be installed on the INDOT Specification 23 sand in the basal area, as ~~listed~~ described in Table XV in section 80(j) of this rule.

(e) The location of the aggregate bed shall be:

(1) for sites with slopes of one-half percent (1/2%) or less, with its length positioned along the long axis in the center of the basal area; and

(2) for sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%), with its length positioned along the long axis at the upslope side of the basal area.

(d) The design of the aggregate bed shall comply with the following:

(1) The long axis of the aggregate bed shall be constructed along the contours of the **soil** absorption system site.

(2) The bottom of the aggregate bed shall be level along its length and width.

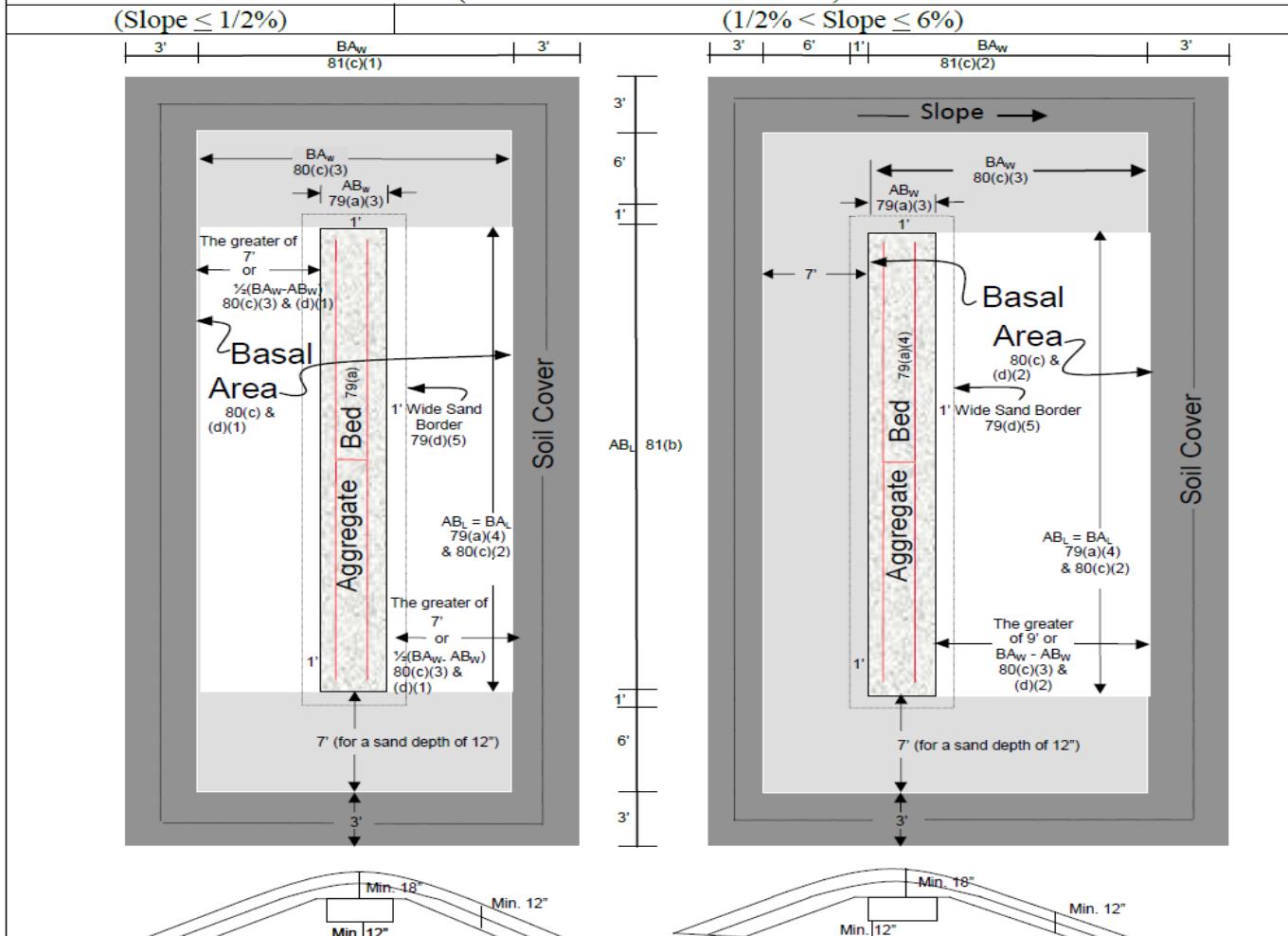
(3) Aggregate used in the aggregate bed shall comply with the requirements of section 68 of this rule.

(4) If more than one (1) aggregate bed is constructed, each of the aggregate beds shall be equal in area.

(5) A one (1) foot wide border of INDOT Specification 23 sand, level with the top of the aggregate bed, shall surround the aggregate bed.

Figure 1, as follows, presents a visual depiction of the location of the aggregate bed within the basal area:

Figure 1
Plan View of Sand Mound
(Based on Minimum Dimensions)



Legend: AB = Area of the Aggregate Bed, AB_L = Length of the Aggregate Bed, AB_w = Width of the Aggregate Bed, BA = Area of the Basal Area, BA_L = Length of the Basal Area, BA_w = Width of the Basal Area. Schematic is for a sand depth of 12 inches below the aggregate bed, and an aggregate bed depth of 6 inches below the laterals, plus the diameter of the laterals, plus 2 inches above the laterals.

(Indiana Department of Health; 410 IAC 6-8.3-79; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-41012015FRA; errata filed Apr 23, 2013, 11:44 a.m.: 20130508-IR-410130165ACA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-80 Elevated sand mound ~~on-site sewage~~ soil absorption systems: design of basal area

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 80. (a) The dimensions of the basal area shall be as long and narrow as the site allows, in compliance with the requirements of subsection (c).

(b) Numerical dimensions provided in this section for basal area and elevated sand mound size are rounded up to the nearest whole number.

(c) The size of the basal area shall be determined from the following:

(1) The minimum size of the basal area shall be calculated as:

$$\text{Minimum basal area (ft}^2\text{)}(\text{BA}) = \frac{\text{DDF (150 gal.gpd} \times \text{number of bedrooms and bedroom equivalents)}(\text{in gpd})}{\text{soil loading rate (gpd/ft}^2\text{)} (\text{SLR})}$$

using the soil loading rates from Table V in section 72(b)(67) of this rule. The soil loading rate used for this computation shall be the soil loading rate of the most restrictive **soil** horizon in the first twenty (20) inches below the ground surface.

(2) The ~~minimum~~ length ~~for~~ of the basal area (BA_L) shall equal the length of the aggregate bed (AB_L).

(3) The minimum width of the basal area (BA_W) shall be calculated as the greater of:

$$(A) \text{Minimum basal area width} = \frac{\text{minimum basal area (ft.}^2\text{)} (\text{BA})}{\text{length of aggregate bed (ft)} (\text{AB}_L)} ; \text{ or}$$

Slope	Minimum Basal Area Width (BA_W)
$0\% \leq \text{slope} \leq \frac{1}{2}\%$	Aggregate bed width + 14 ft.
$\frac{1}{2}\% < \text{slope} \leq 6\%$	Aggregate bed width + 9 ft.

(C) The dimensions determined from clause (A) or (B) for the INDOT Specification 23 sand shall maintain a ~~minimum~~ sideslope grade ~~of~~ **no steeper than** three-to-one (3:1).

(d) The location of the basal area within the elevated sand mound shall be:

(1) on **level** sites with slopes of one-half percent (1/2%) or less, the area under the aggregate bed and extending an equal distance from each side along the length of the aggregate bed; and

(2) on **sloping** sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%), the area under the aggregate bed and extending directly downslope from the aggregate bed.

(e) The design of the basal area shall be ~~for~~:

(1) **level on** sites with slopes one-half percent (1/2%) or less; or

(2) **sloping on** sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%).

(f) The basal area shall be constructed on the tilled surface of the soil absorption system site in accordance with the provisions of section 87 of this rule.

(g) The long axis of the basal area and elevated sand mound shall be constructed along the contour of the soil absorption system site.

(h) The minimum depth of the INDOT Specification 23 sand under the aggregate bed shall be twelve (12) inches.

(i) The INDOT Specification 23 sand shall have a ~~minimum~~ final grade on all sides ~~of~~ **no steeper than** three-to-one (3:1).

(j) The INDOT Specification 23 sand used in the elevated sand mound **basal area** shall meet the following standard:

Table XV – INDOT Specification 23 Sand*

Sieve Sizes	Percent (%) Passing Sieve (by Weight)
3/8 in (9.50 mm)	100
No. 4 (4.75 mm)	95 – 100
No. 8 (2.36 mm)	80 – 100
No. 16 (1.18 mm)	50 – 85
No. 30 (600 μm)	25 – 60
No. 50 (300 μm)	5 – 30
No. 100 (150 μm)	0 – 10

No. 200 (75 μm)	0 – 3
*The sand shall not have more than forty-five percent (45%) retained between any two (2) consecutive sieves.	

(k) Figure 1 in section 79(d) of this rule presents a visual depiction of the location of the basal area within the elevated sand mound. (*Indiana Department of Health; 410 IAC 6-8.3-80; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-81 Elevated sand mound ~~on-site sewage~~ soil absorption systems: dimensions of the elevated sand mound

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 81. (a) Numerical dimensions for the soil **cover** material ~~cover~~ from the edge of the basal area to the edge of the elevated sand mound are based on a final grade of three-to-one (3:1) ~~on level sites~~. The plan views and numerical dimensions are for a simple slope (a slope that forms a plane). Elevated sand mounds sited on complex slopes are more difficult to design and construct on contour.

(b) The minimum length of an elevated sand mound shall be the sum of the following:

(1) The length of the aggregate bed (AB_L).

(2) Plus fourteen (14) feet, representing the two sideslopes of INDOT Specification 23 sand at both ends of the aggregate bed (including the one (1) foot level borders). ~~An~~ **minimum** endslope grade ~~of~~ **no steeper than** three-to-one (3:1) shall be maintained on the INDOT Specification 23 sand.

(3) Plus six (6) feet, representing the soil **cover** material ~~cover~~ at both ends of the aggregate bed. ~~An~~ **minimum** endslope grade ~~of~~ **no steeper than** three-to-one (3:1) shall be maintained on the soil cover material.

(c) The minimum width of the elevated sand mound shall be determined from the following:

(1) On **level** sites with slopes one-half percent (1/2%) or less, the minimum width of an elevated sand mound is the sum of the following:

(A) The basal area width (BA_w) as determined in **subdivision section** 80(c)(3) of this rule.

(B) Plus six (6) feet, representing the soil **cover** material ~~cover~~ on both sides of the aggregate bed.

(2) On **sloping** sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%), the minimum width of an elevated sand mound shall be the sum of the following:

(A) The basal area width (BA_w) as determined in **subdivision section** 80(c)(3) of this rule.

(B) Plus seven (7) feet, representing the sideslope of INDOT Specification 23 sand on the upslope side of the aggregate bed (including the one (1) foot level border), and shall maintain a ~~minimum~~ sideslope grade ~~of~~ **no steeper than** three-to-one (3:1).

(C) Plus six (6) feet, representing the soil **cover** material ~~cover~~ on both sides of the aggregate bed. A ~~minimum~~ sideslope grade **no steeper than** ~~of~~ three-to-one (3:1) shall be maintained on the soil cover material.

(*Indiana Department of Health; 410 IAC 6-8.3-81; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-82 Elevated sand mound ~~on-site sewage~~ soil absorption systems: pressure distribution network

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 82. (a) The effluent force main shall drain unless it is installed below the frost line, as listed in Table VIII in section 76(d) of this rule, and designed so that no effluent remains in any portion of the effluent force main located above the frost line.

(b) The effluent pump shall be sized, and its controls set, to deliver ~~approximately~~ one-fourth (1/4) of the DDF per dose.

(c) The liquid holding capacity of the dosing tank shall be determined as follows:

(1) If the effluent force main and manifold:

(A) do not drain to the dosing tank, the **total dose dosing tank** volume shall be one-fourth (1/4) of the DDF; or

(2) **If the effluent force main and manifold** drain to the dosing tank, the **total does dosing tank** volume shall be one-fourth (1/4) of the DDF plus the volume of the **portion of the effluent force main and manifold that drain back to the dose tank**; and

(23) Additional dosing tank capacity must be provided to:

- (A) keep the dosing tank effluent pump submerged at all times; **and**
- (B) provide sufficient freeboard for a high water alarm; **and**

(C) the local health department may require a minimum reserve capacity equal to one hundred fifty (150) gallons above the position of the high water alarm.

(d) The minimum inside diameter of the effluent force main shall be one and one-half (1 1/2) inches. The maximum inside diameter of the effluent force main shall be four (4) inches.

(e) Tables IX and X in section 76(h) of this rule, or equivalent tables provided by the pipe manufacturer, shall be used in determining friction losses in the effluent force main and manifold when plastic pipe is used. The Hazen-Williams equation may also be used to determine friction loss in the effluent force main and manifold.

(f) The design of the pressure distribution network shall meet the following requirements:

(1) The effluent force main shall approach the elevated sand mound as follows:

- (A) On **level** sites with slopes of one-half percent (1/2%) or less, from either end.
- (B) On **sloping** sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%), from the upslope side. If approach from the upslope side of the elevated sand mound is not possible due to site limitations, the effluent force main may approach from either end.

(2) The design (location) of the effluent force main shall provide for minimal disturbance of the basal area during installation.

(g) Manifolds shall be installed between the effluent force main and the pressure distribution laterals as follows:

(1) The manifold shall be located in the aggregate bed.

(2) The manifold pipe shall:

- (A) for on-site sewage systems with a DDF of seven hundred fifty (750) gallons per day or less, have a diameter of two (2) inches; or
- (B) for on-site sewage systems with a DDF of greater than seven hundred fifty (750) gallons per day, have the same diameter as the effluent force main or a diameter of two (2) inches, whichever is greater, but no greater than four (4) inches.

(h) The pressure distribution laterals shall meet the following requirements:

(1) Each pressure distribution lateral shall connect directly to the manifold.

(2) The length of each **pressure distribution** lateral shall be calculated as: Lateral length (L_{Lat}) = $(AB_L - 3)/2$

(3) No single pressure distribution lateral (from the manifold to the end cap) shall exceed fifty-five (55) feet in length.

(4) The diameter of the pressure distribution laterals shall be determined from Table XVI, as follows:

Table XVI - Pressure Distribution Lateral Diameter for Elevated Sand Mounds*

Lateral Length, L (ft.)	$L \leq 25$ ft.	$25 \text{ ft.} < L \leq 40$ ft.	$40 \text{ ft.} < L \leq 55$ ft.
Diameter (in.)	1 in.	1 1/4 in.	1 1/2 in.

*Pressure distribution lateral diameters for one-quarter (1/4) in. holes spaced at three (3) ft. on centers.

(5) Pressure distribution laterals shall have one (1) row of holes with three (3) feet on center spacing.

(6) The holes in the pressure distribution laterals shall be one-quarter (1/4) inch in diameter.

(7) The number of holes per lateral, including the hole in the end cap, shall be calculated as:

$$\text{Number of holes per lateral} = (L_{Lat} - 1.50)/3 + X;$$

where:

L_{Lat} is always rounded down to the next whole number;

$X = 1$ if $R < 0.5$; and $X = 2$ if $R \geq 0.5$; and

R = the remainder from the mathematical equation.

The number of holes calculated includes the hole in the end cap of the pressure distribution lateral.

(8) The first hole in each lateral shall be eighteen (18) inches from the center of the manifold.

(9) The last hole in the pressure distribution lateral before the end cap shall be at not less than eighteen (18) inches and not more than thirty-six (36) inches from the end cap.

(10) The end of each lateral shall be capped, and a one-fourth (1/4) inch hole shall be drilled in the upper half of the end cap.

(11) Burrs shall be removed from the edges of all holes and from the interiors of all **pressure distribution** laterals. **Care must be taken when drilling and deburring holes as a slight increase in hole diameter will increase the required**

system flow.

(12) All pressure distribution laterals shall be:

- (A) at the same elevation; and
- (B) level throughout their lengths.

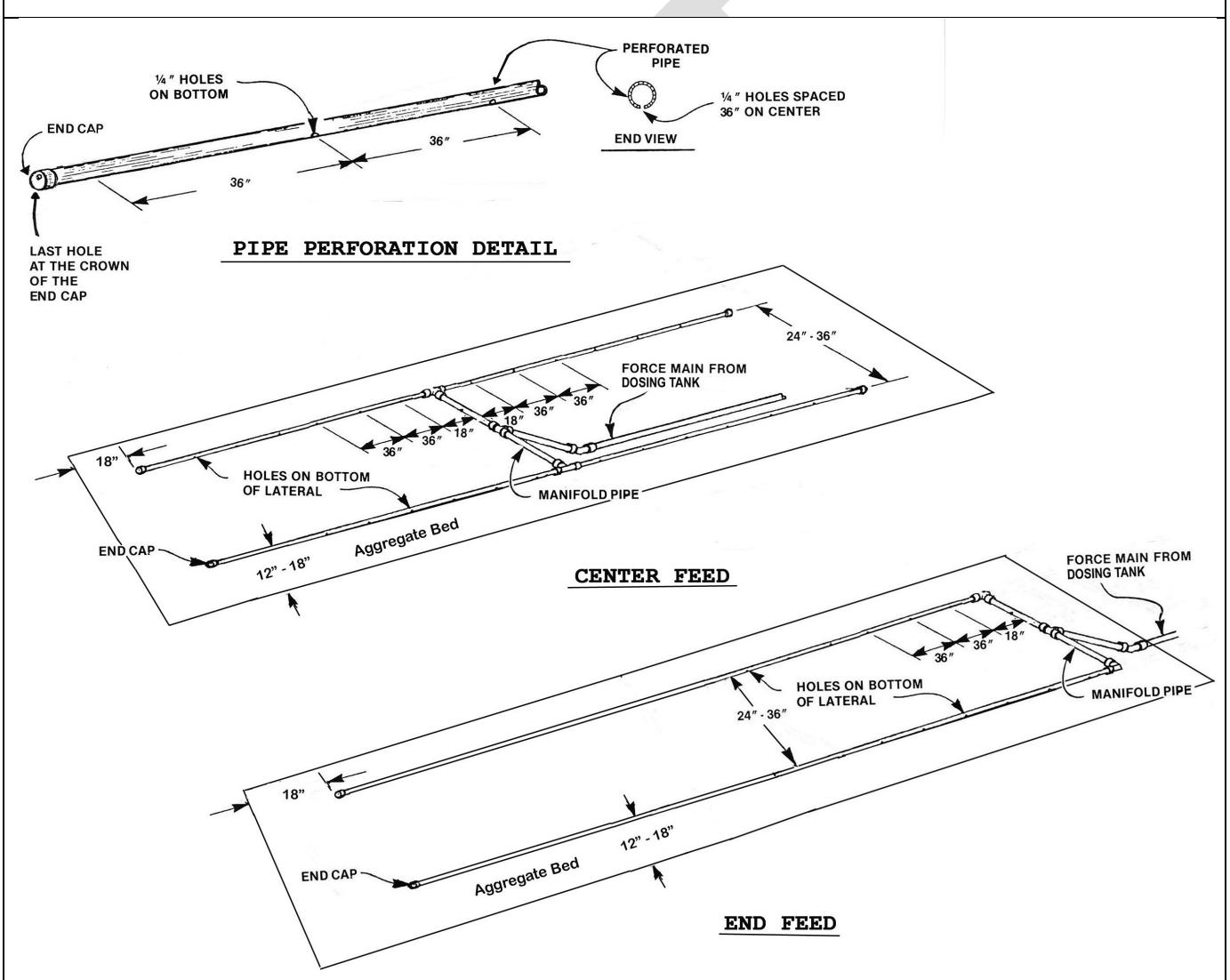
(13) **After any required pressure check(s) have been completed to the satisfaction of the local health department,** the pressure distribution laterals shall be placed in the aggregate bed with all holes, except the end cap holes, facing down.

(i) Pressure distribution laterals shall be laid out as shown in Figure 2, as follows:



- (1) The separation distance between pressure distribution laterals shall be not less than twenty-four (24) inches and not more than thirty-six (36) inches.
- (2) Pressure distribution laterals shall be located not less than twelve (12) inches and not more than eighteen (18) inches from the sides of the aggregate bed along the length of the **pressure distribution** lateral.
- (3) Pressure distribution laterals shall be attached to the manifold using nondirectional fittings designed to withstand the required pressures exerted on them.
- (4) The end of each pressure distribution lateral with the hole in the end cap of the lateral shall be eighteen (18) inches from the end of the aggregate bed.
- (5) All joints, including the end caps, shall **be sealed according to the manufacturer's recommendations in order to be watertight and to withstand the pressures exerted on them.**

Figure 2 – Plan View of Pressure Distribution Laterals in an Aggregate Bed of an Elevated Sand Mound



- (j) Effluent pump selection for elevated sand mound on-site sewage systems shall be based on the manufacturer's pump curves for the required pump discharge rate at the total dynamic head imposed on the **effluent** pump, as follows:
 - (1) The total discharge rate of the effluent pump shall be the total number of one-quarter (1/4) inch holes in all **pressure**

distribution laterals (including the holes in the end caps) times one and twenty-eight hundredths (1.28) gallons per minute (gpm).

(2) The total dynamic head imposed on the pump shall be the sum of the following:

(A) ~~The design head shall be three (3) feet. An inline residual pressure of at least three (3) feet of head shall be maintained in the pressure distribution laterals at the elevation of the pressure distribution laterals in the soil absorption system during pumping.~~

(B) Plus friction loss in the effluent force main and manifold as determined by Tables IX and X in section 76(h) of this rule when plastic pipe is used.

(C) Plus the static head which is the difference in elevation from the effluent pump **off position** and the highest point in the effluent force main or the connection to the manifold, whichever is the highest elevation.

(Indiana Department of Health; 410 IAC 6-8.3-82; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-83 Elevated sand mound ~~on-site sewage~~ soil absorption systems: protection of the site

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 83. (a) Before the start of any construction on the property, the following areas must be ~~staked out~~ marked and protected from disturbance:

(1) The soil absorption system area.

(2) The dispersal area.

(3) The subsurface drainage system area.

(4) The set-aside area (if required in the approved plan).

(5) Areas designated for future expansion (if required in the approved plan).

(b) Special caution shall be taken to prevent wheeled and tracked vehicles from compacting the area selected for placement of the elevated sand mound soil absorption system before, during, and after construction, especially during wet weather. Alteration of soil structure by movement of vehicles, **or by other means**, may be grounds for rejection of the site or the on-site sewage system, or both. (Indiana Department of Health; 410 IAC 6-8.3-83; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-84 Elevated sand mound ~~on-site sewage~~ soil absorption systems: requirements for system construction

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 84. (a) Elevated sand mound on-site sewage systems shall meet all of the requirements of:

(1) section 57 of this rule;

(2) sections 74(j) through (n) of this rule; and

(3) sections 79-89 of this rule.

(ab) Site preparation, tilling, construction, finish grading, and soil stabilization shall:

(1) be performed in accordance with the approved plans; and

(2) not be performed when the soil is frozen **or when the soil is sufficiently wet to have exceeded its plastic limit.**

(bc) Elevated sand mound soil absorption systems shall not be constructed during periods of wet weather when the soil is sufficiently wet **from the ground surface to at least five (5) inches below the maximum depth of tillage at the depth of installation** to exceed its plastic limit, as follows:

(1) This subsection applies to soils classified as the following:

(A) Sandy loam.

(B) Silt loam.

(C) Loam.

(D) Clay loam.

(E) Silty clay loam.

(F) Sandy clay.

(G) Silty clay.

(H) Clay.

(2) Sufficient samples shall be evaluated throughout the soil absorption system site, from the soil surface to the depth of tilling, to assure that the plastic limit of the soil is not exceeded.

(3) The plastic limit of a soil shall be considered to have been exceeded when the soil can be rolled between the palms of the hands to produce threads one-eighth (1/8) inch in diameter without breaking apart and crumbling.

(Indiana Department of Health; 410 IAC 6-8.3-84; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-85 Elevated sand mound ~~on-site sewage~~ soil absorption systems: installation of the effluent force main

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 85. (a) To minimize disturbance of the basal area, the effluent force main must be brought above grade prior to entering the basal area and it must be extended upward through the INDOT Specification 23 sand to the point where it will enter the aggregate bed. The effluent force main shall be laid in the aggregate bed to the point of connection to the manifold.

(b) If the effluent force main is installed prior to tilling of the elevated sand mound site, the following apply:

(1) The effluent force main must be installed a minimum of sixteen (16) inches below existing grade from the outlet of the dosing tank to the point where it comes up through the INDOT Specification 23 sand, outside of the basal area.

(2) The end of the effluent force main shall be fitted with a temporary vertical pipe extending at least three (3) feet above grade and temporarily capped during the construction process.

(3) The portion of the effluent force main which comes above existing grade must be bedded and stabilized properly as the sand is applied.

(c) If the effluent force main is installed after tilling of the site and placement of the INDOT Specification 23 sand, the following apply:

(1) The excavation must be hand dug through the INDOT Specification 23 sand.

(2) Dirt, sand, and debris must be prevented from entering the effluent force main during installation.

(3) The portion of the effluent force main that is installed in the INDOT Specification 23 sand must be properly bedded and stabilized in the underlying soil and in the INDOT Specification 23 sand.

(Indiana Department of Health; 410 IAC 6-8.3-85; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-86 Elevated sand mound ~~on-site sewage~~ soil absorption systems: preparation of the site

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 86. (a) For all elevated sand mound sites, the following requirements shall be met for site preparation:

(1) Vegetation that would interfere with the soils evaluation, system layout, or system construction shall be cut and removed (not scraped) prior to installation without causing compaction.

(2) Trees **within the sand or soil cover material footprint, or within the subsurface drain**, shall be cut off at the ground surface and removed, with only stumps left in place. The local health department may require scarring of the tree stumps.

(3) Tree roots that protrude above the tilled surface shall be cut off and removed without causing compacted soil material.

(4) **After confirming that the soil has not exceeded its plastic limit**, the portion of the elevated sand mound site receiving INDOT Specification 23 sand shall be tilled along the contour of the site to a depth of seven (7) inches to fourteen (14) inches. ~~with a moldboard or chisel plow, or a bulldozer with a ripper. A backhoe may be used to till sites with special considerations as noted in subsection (b).~~ The department or local health department may require field supervision of tilling operations as follows; ~~as follows:~~

(A) **If compacted soil material is identified in the soil from the surface to a depth of twelve (12) inches, tilling of the soil shall be to a depth of at least two (2) inches below the bottom of the compacted soil material.**

(B) **If compacted soil material is identified in the soil at a depth greater than twelve (12) inches, the site is unsuitable for elevated sand mound construction, unless:**

- (i) the compaction is broken up by a method approved by the department; and
 - (ii) for every inch of compaction below twelve (12) inches, the limiting layer shall be one (1) inch deeper than the twenty (20) inch minimum required for an elevated sand mound.
- (5) Tillage of the site should result in soil that is loosened and fluffed without destroying the primary soil structure. Tillage should allow some INDOT Specification 23 sand to fall into the tilled soil to incorporate the sand into the upper soil horizon. This intermingling of sand and soil will promote effluent migrating through the sand to enter into the upper horizon of soil for final treatment and dispersal. Any method of tillage that does not meet the intended goals shall be denied for the site.
- (6) To ensure the tillage method is accomplishing the goals specified in subdivision (5), it is recommended to test the proposed method of tilling the site in similar soils, but outside of the basal area and dispersal area. Acceptable methods of tilling the site include the following:
- (A) ~~If a~~ A chisel plow or a bulldozer with a ripper ~~if the following requirements are met: is used, tillage shall be across the site along the contour of the site.~~
 - (i) The rips in the soil made by the chisels or rippers shall be spaced no less than twelve (12) inches and no more than eighteen (18) inches on center.
 - (ii) Multiple passes may be made to achieve the required spacing. Tires or tracks should avoid previous rips made or the area of tracking shall be re-ripped.
 - (iii) The chisels or rippers shall plow to the required depth with a single pass.
 - (B) ~~If a~~ A moldboard plow ~~if the following requirements are met: is used:~~
 - (i) ~~The moldboard plow~~ shall have at least two (2) bottoms and make only one (1) pass across the area, along the contour of the site; and
 - (ii) ~~On sloping~~ sites with slopes greater than one-half percent (1/2%), the furrows shall be turned upslope.
- (bC) For wooded sites, and sites that limit the use of larger equipment, a backhoe **or excavator** may be used to till the site if the following requirements are met:
- (4i) The use of a backhoe **or excavator** shall be approved, in writing, by the department or local health department **prior to permit issuance**.
 - (2ii) Tilling shall be performed along the contour of the site.
 - (3iii) The surface of the ground shall be tilled with the chisel teeth fitted onto the ~~baekhoe~~ bucket **of the backhoe or excavator**.
 - (4iv) The backhoe **or excavator** shall remain on untilled soil.
- (D) Other equipment may be used to till the site with approval from the local health department as long as the goals of tilling listed in subdivision (a)(5) and the following are met:
- (i) Rototillers and other equipment that destroy soil structure are not approved for tilling.
 - (ii) The method of tilling shall be to the required depth with one pass unless the local health department approves multiple passes and will not cause compaction or disturb previously plowed soil.
 - (iii) Tilling shall be along the contour.
 - (iv) The method of tilling shall not cause compaction to the plowed layer or the soil below.

(5) If a moldboard plow, chisel plow, or bulldozer with a ripper is used to till the site, the provisions of subsection (a)(4) must be utilized.

(c) If compacted soil material is identified in the soil from the surface to a depth of twelve (12) inches, tilling of the soil shall be to a depth of at least two (2) inches below the bottom of the compacted soil material. If compacted soil material is identified in the soil at a depth greater than twelve (12) inches, the site is unsuitable for elevated sand mound construction, unless the compaction is broken up by a method approved by the department. (Indiana Department of Health; 410 IAC 6-8.3-86; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Aug 28, 2013, 10:23 a.m.: 20130925-IR-410120615FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-87 Elevated sand mound ~~on-site sewage~~ soil absorption systems: placement of the sand on the basal area

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 87. (a) The basal area shall be covered using **INDOT Specification 23** sand that meets the requirements listed in Table XV in section 80(j) of this rule.

(b) INDOT Specification 23 sand shall be placed on the tilled area immediately after tilling the site to protect the tilled surfaces ~~from damage by precipitation~~.

(c) The depth of the INDOT Specification 23 sand under the aggregate bed shall be at least twelve (12) inches. On **sloping** sites with slopes greater than one-half percent (1/2%), the depth of INDOT Specification 23 sand beneath the downslope side of the aggregate bed will be greater than twelve (12) inches.

(d) INDOT Specification 23 sand shall be placed on the tilled surface as follows:

(1) On **level** sites with slopes one-half percent (1/2%) or less, from the ends of the elevated sand mound **only**.

(2) On **sloping** sites with slopes greater than one-half percent (1/2%) and less than or equal to six percent (6%), from the ends or upslope edge of the elevated sand mound.

(3) The placement of the INDOT Specification 23 sand on the tilled surface shall not be completed from the dispersal area(s) of the system.

(e) At least ~~six~~-twelve (612) inches of INDOT Specification 23 sand shall be kept between the vehicle tracks or tires and the tilled soil of the site ~~if trafficking of the elevated sand mound is required~~.

(f) The depth of INDOT Specification 23 sand around the aggregate bed shall be the sum of:

(1) the depth of the sand under the aggregate bed; and

(2) the depth of the aggregate bed.

(g) A one (1) foot wide border of INDOT Specification 23 sand shall surround the aggregate bed, level with the top of the aggregate bed. (*Indiana Department of Health; 410 IAC 6-8.3-87; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-88 Elevated sand mound ~~on-site sewage-soil absorption~~ systems: construction of the aggregate bed

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 88. (a) The surface of the INDOT Specification 23 sand at the sand/aggregate interface shall be smooth and free of ruts and depressions before the placement of the aggregate.

(b) The depth of aggregate in the aggregate bed from side to side and end to end shall be at least:

(1) six (6) inches below the pressure distribution laterals;

(2) plus the outside diameter of the pressure distribution laterals; and

(3) plus two (2) inches above the pressure distribution laterals.

(c) Prior to the aggregate bed being completed, the local health department may conduct a pressure check of the pressure network to ensure that at least three (3) feet of residual head is attained, all holes have been properly deburred, and hole spacing is correct.

(ed) The aggregate bed shall be covered with a barrier material which meets the minimum requirements of section 69 of this rule. The barrier material shall cover the aggregate bed from side to side and from end to end. If multiple passes must be made with the barrier material, edges shall overlap at least six (6) inches.

(e) The local health department may require an inspection pipe to be installed in the aggregate bed. The inspection pipe shall:

(1) be at least eight (8) inches in diameter;

(2) be constructed of piping which meets the requirements of section 67(a);

(3) extend above final grade with the ground surface sloping away in all directions;

(4) be capped with a safely secured, easily removable cap or lid constructed of material compatible with the pipe used.

(5) be extended to the bottom of the aggregate bed; and

(6) be adequately secured in the aggregate bed with rebar or similar material to ensure the inspection pipe remains stable and is not pulled out of the ground when opened. (*Indiana Department of Health; 410 IAC 6-8.3-88; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA*)

410 IAC 6-8.3-89 Elevated sand mound ~~on-site sewage~~ soil absorption systems: placement of the soil **cover** material and final grade

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 89. (a) If the ground surface along the perimeter of the INDOT Specification 23 sand was not tilled during preparation of the elevated sand mound site, the perimeter shall be prepared by tilling in accordance with the requirements of section 86 of this rule.

(b) The soil **cover** material-~~cover~~ shall:

(1) have a texture other than sand or loamy sand;

(2) be capable of sustaining plant growth; and

(3) be placed on the INDOT Specification 23 sand without causing compacted soil material.

(c) Prior to placement of the soil cover material, the surface of the INDOT Specification 23 sand shall be prepared by:

(1) maintaining a ~~minimum~~ grade of at least ~~no steeper than~~ three-to-one (3:1); and

(2) preparing the surface of the INDOT Specification 23 sand so that it is smooth and free of ruts and depressions.

(d) The aggregate and sand of the elevated sand mound shall be covered with a minimum of twelve (12) inches of soil material. An additional six (6) inches of ~~that~~ soil **cover** material, for a total of eighteen (18) inches, shall be placed over the center line of the long axis of the aggregate bed and crowned to promote surface runoff away from the elevated sand mound.

(e) Soil **cover** material shall be placed on the tilled portion of the sand perimeter and graded ~~according to the requirements of subsection (f).~~

(f) ~~The soil material cover shall have a minimum to maintain a final grade on all sides no steeper than of~~ three-to-one (3:1).

(gf) The elevated sand mound shall be seeded or sodded with grasses adapted to the area. If seeded, the elevated sand mound shall be protected by a cover of straw, burlap, or some other biodegradable material that will protect it against erosion. (Indiana Department of Health; 410 IAC 6-8.3-89; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-90 Abandonment of an on-site sewage system

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 90. (a) **The local health department may issue a permit and require an inspection for the abandonment of an on-site sewage system in accordance with subdivision 53(a)(7) of this rule, unless the local health department does not have a program for system abandonment.**

(b) When the use of an on-site sewage system is discontinued, the following procedure ~~must shall~~ be followed for all tanks and electrical service:

(1) Electrical power must be disconnected at the source. All controls and panels must be removed.

(2) All above ground electrical lines that will not be used for other purposes must be removed.

(3) A licensed ~~septic tank cleaner must~~ ~~wastehauler shall~~ pump all contents from all tanks **and distribution boxes** in the on-site sewage system.

(4) The tanks must ~~either~~ be:

(A) **be removed and disposed of at a licensed landfill; or**

(B) **have their** ~~the~~ lids crushed into the tanks and the holes or tanks backfilled with debris-free sand or other granular material, concrete, or soil material that is compacted to prevent settling (if a sand mound is being abandoned, sand, aggregate and soil cover from the sand mound may be used for filling the tank or tanks); or

(BC) **be** filled with flowable fill.

(5) Properly grade and establish vegetative cover.

(bc) **If there are no plans to use the area for other purposes**, the components of the soil absorption system may be left intact ~~if there are no plans to use the area for other purposes~~. Vegetative cover must be maintained.

(ed) If effluent has surfaced, those areas must be covered with hydrated lime followed by top soil and a vegetative cover.

(de) If components of the soil absorption system are to be removed, the following procedure must be used:

- (1) A licensed septic tank cleaner must pump all contents from all distribution boxes in the on site sewage system.
- (12) Allow sufficient time after the on-site sewage system is taken out of service and the tanks pumped to make sure the entire soil absorption system is completely dry.
- (32) A contractor must remove the distribution network, aggregate, and sand (if any) from the site all piping, chambers, and distribution boxes.
- (4) The contractor must and dispose of these materials at a licensed landfill.
- (3) Any aggregate, sand, and soil cover material may be used for fill material, including filling of tanks, after it has been allowed to sufficiently dry.
- (54) The site of the abandoned soil absorption field must be properly graded and a vegetative cover established.
- (fe) Written documentation of tank pumping and system abandonment must be provided to the local health department by the homeowner in the form of a receipt from the contractor and landfill, if used, regardless of whether or not a permit is required by the local health department. (Indiana Department of Health; 410 IAC 6-8.3-90; filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; filed Apr 9, 2014, 9:51 a.m.: 20140507-IR-410130350FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

410 IAC 6-8.3-91 Matters incorporated by reference

(NOTE: This section will be updated before proposed rule is published.)

Authority: IC 16-19-3-4

Affected: IC 16-19-3-4

Sec. 91. (a) Bulletin SE 11, "The Sanitary Vault Privy", 1986 2021 Edition, is incorporated by reference as part of this rule. It is available at the department at 2 North Meridian Street, Indianapolis, Indiana 46204.

(b) NSF/ANSI Standard 40-2010 and Standard 46-2010a are incorporated by reference as part of this rule. Two (2) copies of each standard are available for reference in the files of the department. Copies of the standards may be obtained by mailing a request to the National Sanitation Foundation, 789 North Dixboro Road, P.O. Box 130140, Ann Arbor, Michigan 48113-0140, or at:

www.techstreet.com/cgi-bin/joint.cgi/nsf

(c) ASTM Standards C 923-08, C 990-09, C 1644-06, D 1527-99 (Reapproved 2005), D 1785-06, D 2241-09, D 2282-99 (Reapproved 2005), D 2661-11, D 2665-12, D 2680-01 (Reapproved 2009), D 2729-11, D 2751-05, D 3034-08, D 4355-07, D 4491-99a (Reapproved 2009), D 4533-11, D 4632-08, D 4751-04, D 6241-04 (Reapproved 2009), F 405-05, F480-12, F 667-12, F 810-07, F 891-10 and **ASTM F2620-20ae2** are incorporated by reference as part of this rule. Two (2) copies of each standard are available for reference in the files of the department. ASTM standards may be obtained at:

<http://www.astm.org/Standard/index.shtml>

(d) AASHTO Standard M252-09 is incorporated by reference as part of this rule. Two (2) copies of the standard are available for reference in the files of the department. This standard may be obtained at:

<http://www.transportation.org>

(e) NRCS Standard 606, September 2003, is incorporated by reference as part of this rule. Two (2) copies of the standard are available for reference in the files of the department. This standard may be obtained at:

<http://efotg.nrcs.usda.gov/references/public/AL/tg606.pdf>

(f) INDOT 2012 Standard Specifications, Section 904, Aggregates is incorporated by reference as part of this rule. Two (2) copies of the standard are available for reference in the files of the department. The standard may be obtained at:

<http://www.in.gov/dot/div/contracts/standards/book/sep11/sep.htm>

(g) NEMA 250-2008 is incorporated by reference as part of this rule. Two (2) copies of the standard are available for reference in the files of the department. The standard may be obtained at: http://webstore.ansi.org/RecordDetail.aspx?sku=NEMA%20250-2008&source=google&adgroup=nema&gclid=CKe9-66a368CFSWFQAodnnii_A

(h) IAPMO Z1000-2019, Prefabricated Septic Tanks is incorporated by reference as part of this rule. Two (2) copies of the standard are available for reference in the files of the department. The standard may be obtained at:

https://webstore.ansi.org/SDO/IAPMO?gclid=EA1aIQobChMI-8P-vZLJ-QIVn8mUCR2xTQxTEAAYASAAEgJ9K_D_BwE

(i) Soil Survey Staff. 2015. Illustrated guide to soil taxonomy. U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska (Indiana Department of Health; 410 IAC 6-8.3-91;

filed Oct 19, 2012, 2:06 p.m.: 20121114-IR-410120156FRA; readopted filed Sep 26, 2018, 2:48 p.m.: 20181024-IR-410180328RFA)

SECTION XX. 410 IAC 6-8.3-20, 410 IAC 6-8.3-30, AND 410 IAC 6-8.3-61 ARE REPEALED.

DRAFT