



## **Floor Drains**

### **Technical Guidance Document WMS 12-06-A**

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Floor drains, can be found in residences, farm and mechanical shops, and many different types of commercial and industrial buildings. They may receive such fluids as sewage, snow/ice melt, wash water, vehicle fluids, process water, spills and hazardous or radioactive waste. Wastewater disposal must comply with the minimum requirements as defined by Kansas Statutes Annotated (K.S.A.), Kansas Administrative Regulations (K.A.R.) and local codes and ordinances. This Technical Guidance Document (TGD) addresses acceptable floor drain waste disposal.

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#### **Background**

Floor drains installed in building basements and floors may receive emergency, intermittent or continuous flows. The quality of these flows can vary from ice/snow melt to hazardous waste. Floor drains may be connected to several different types of disposal systems. These systems include: a surface discharge pipe, cesspools or seepage pits, holding tanks, septic tank and lateral field, lagoons and municipal sewer lines.

#### **Sources of Floor Drain Wastewater and Disposal Options**

##### **Residential homes and garages (without home-based businesses)**

Floor drains in residences are typically installed in laundry rooms and service rooms (hot water, water softener and HVAC systems). Disposal options for these floor drains include:

- surface discharge (depending on the composition, discharge must be applied to the owners property, may not leave the property or create a nuisance and should be directed to a grassed or vegetated area)
- holding tank<sup>1</sup> (depending on the composition, wastewater may be applied to the owners property, it may not leave the property or create a nuisance and should be directed to a grassed or vegetated area)
- septic tank and lateral field<sup>1</sup> (provided the system is designed to accommodate the additional flow rate)
- lagoon<sup>1</sup> (provided the system is designed to accommodate the additional flow rate)
- municipal sewer lines<sup>2</sup>

Attached and detached garages may have floor drains to capture rain and ice and snow melt and occasional exterior car washing. Vehicle fluids and chemicals of any type are prohibited. Disposal options for these floor drains include:

- surface discharge (depending on the composition, discharge must be applied to the owners property, may not leave the property or create a nuisance and should be directed to a grassed or vegetated area)
- holding tank<sup>1</sup> (depending on the composition, wastewater may be applied to the owners property, it may not leave the property or create a nuisance and should be directed to a grassed or vegetated area)
- lagoon<sup>1</sup>(provided the system is designed to accommodate the additional flow rate)
- municipal sewer line<sup>2</sup>

## **Residences with Home-Based Businesses, Agricultural, Commercial and Industrial Buildings**

Floor drains servicing home-based businesses, agricultural, commercial and industrial buildings have the potential to receive various contaminants. **SURFACE WASTEWATER DISCHARGES from these businesses are prohibited. SUBSURFACE WASTEWATER DISCHARGES are considered Class V wells which are prohibited.** Pollution prevention techniques such as reducing, recycling or reusing wastes can be implemented to limit the amount of waste generated. For assistance, contact KDHE at (785) 296-4195 or the Pollution Prevention Institute at (800) 578-8898. Wastewater disposal options for floor drains, listed in the order of preference, include:

1. municipal sewer line<sup>2</sup>
  2. aboveground holding tank<sup>1</sup> with a sump (prior to installation, the owner must obtain permission from a municipality to accept the wastewater)
  3. underground holding tank<sup>1</sup> (prior to installation, the owner must obtain permission from a municipality to accept the wastewater). KDHE recommends secondary containment and release detection be utilized to prevent releases to the subsurface from occurring.
  4. KDHE permitted industrial wastewater lagoon that meets Minimum Design Standards
- Floor drains installed in restrooms, laundry rooms and service rooms (hot water, water softener and HVAC systems) in residences, agricultural, commercial and industrial buildings, may be directed to a septic tank and lateral field provided chemicals are not stored in these areas.
  - Floor drains connected to cesspools, seepage pits or septic tank and lateral fields or surface discharged must be reported to KDHE for investigation.
  - Many floor drains found in these settings also contain mud traps to collect mud, sand, and grit. Please refer to KDHE Bureau of Waste Management TGD SW-1994-G3 for proper handling and disposal of the mud and sediment.

<sup>1</sup>= Permitting through the local authority may be required.

<sup>2</sup>= Obtain permission from the municipality prior to connection.

### **Applicable Definitions, Statutes and Regulations**

*Class V Well* means a well used to inject non-hazardous fluids underground. Fluids are injected either into or above an underground source of drinking water.

*Cesspool* means a “drywell” which receives untreated sewage and sometimes has an open bottom and/or perforated sides.

*Drywell* means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids. These wells are commonly used for disposal of stormwater, but in the case of sewage disposal systems, they receive untreated or inadequately treated sewage.

*Floor Drain* means a plumbing fixture that is installed in the floor of a structure, mainly designed to remove any fluids on the floor of the structure.

*Holding Tank* means a water-tight vessel designed to hold the contents until they are removed.

*Lateral Field* means an underground distribution system that allows fluids to seep into the soil.

*Lagoon* means an excavated or diked structures provided or used for retaining or treating domestic, municipal, commercial or industrial sewage, process wastewater, cooling water, or stormwater runoff.

*Municipal Sewer Line* means a water-tight pipe which carries sewage to a municipal wastewater treatment plant.

*Seepage Pit* means a “drywell” that receives inadequately treated sewage from a septic tank and has an open bottom and/or perforated sides and may be filled with a porous material.

*Septic Tank* means a covered, water-tight receptacle which allows solids to settle, retains floatable solids and scum and allows clarified liquids to discharge.

*Surface Discharge Pipe* means a pipe which discharges its contents directly to the surface of the ground.

K.S.A. 65-164(b) defines *sewage* as “any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human beings or animals, or chemicals or other wastes from domestic, manufacturing or other forms of industry.”

K.S.A. 65-165(a) provides KDHE with the general authority to permit sewage discharges that are in the interest of public health, do not detract from beneficial uses of the waters of the state, and meet applicable water quality and effluent standards.

K.S.A. 65-171d provides the KDHE with the general authority to develop rules and regulations to control the disposal of sewage by municipalities, corporations, companies, institutions, state agencies, federal agencies or individuals to prevent surface and subsurface water pollution and soil pollution detrimental to public health or to plant, animal, and aquatic life of the state and to protect the designated uses of waters of the state.

K.S.A. 65-171h provides KDHE with the general authority to develop and publish minimum design, construction and maintenance standards of sanitary water and sewage systems to protect the quality and the beneficial use of waters of the State.

K.A.R. 28-46-26a prohibits disposal of motor vehicle waste into shallow excavations.

K.A.R. 28-46-27 provides KDHE authority to prohibit the disposal of industrial wastes into a Class V injection well.

### **References**

K.S.A 65-164 [http://kansasstatutes.lesterama.org/Chapter\\_65/Article\\_1/65-164.html](http://kansasstatutes.lesterama.org/Chapter_65/Article_1/65-164.html)

K.S.A 65-165 [http://kansasstatutes.lesterama.org/Chapter\\_65/Article\\_1/65-165.html](http://kansasstatutes.lesterama.org/Chapter_65/Article_1/65-165.html)

K.S.A 65-171d [http://kansasstatutes.lesterama.org/Chapter\\_65/Article\\_1/65-171d.html](http://kansasstatutes.lesterama.org/Chapter_65/Article_1/65-171d.html)

K.S.A 65-171h [http://kansasstatutes.lesterama.org/Chapter\\_65/Article\\_1/65-171h.html](http://kansasstatutes.lesterama.org/Chapter_65/Article_1/65-171h.html)

K.A.R. 28-16-160 to 174 [http://www.kdheks.gov/water/download/28\\_16.pdf](http://www.kdheks.gov/water/download/28_16.pdf)

K.A.R. 28-46-26a and 27 [http://www.kdheks.gov/uic/download/Complete\\_Article\\_46\\_Regs\\_4-18-2012.pdf](http://www.kdheks.gov/uic/download/Complete_Article_46_Regs_4-18-2012.pdf)

KDHE Bureau of Water <http://www.kdheks.gov/water/index.html>

KDHE Local Environmental Protection Program (LEPP) <http://www.kdheks.gov/nps/lepp/>

KDHE Underground Injection Control (UIC) Class V program [http://www.kdheks.gov/uic/Class\\_5.htm](http://www.kdheks.gov/uic/Class_5.htm)

KDHE Industrial Programs <http://www.kdheks.gov/indust/index.htm>

The Pollution Prevention Institute at Kansas State University <http://www.sbeap.org/>

### **Companion Documents**

Class V UIC Flowchart [http://www.kdheks.gov/nps/lepp/download/LEP\\_Class\\_V\\_flowchart.pdf](http://www.kdheks.gov/nps/lepp/download/LEP_Class_V_flowchart.pdf)

Kennel Wastewater Permitting [http://www.kdheks.gov/nps/downloads/Kennel\\_TGD.pdf](http://www.kdheks.gov/nps/downloads/Kennel_TGD.pdf)

Veterinary Waste <http://www.kdheks.gov/uic/download/UICV-9.pdf>

Beauty Shop Waste <http://www.kdheks.gov/uic/download/UICV-10.pdf>