

Land application of business floor drain, trap, and holding tank wastes

Liquid and solid wastes held by floor drains, traps, holding tanks, and associated plumbing can present risks to human health and the environment if improperly managed. The Minnesota Pollution Control Agency (MPCA) regulates the management and disposal of these wastes.

General requirements for management of floor drain, separator and trap, and holding tank wastes, as well as explanations of the terms used in this fact sheet may be found in MPCA fact sheet #w-hw4-18, Floor Drains, Separators and Traps, and Holding Tanks, at <https://www.pca.state.mn.us/sites/default/files/w-hw4-18.pdf>.

Can trap and holding tank waste be disposed by land application?

The MPCA will allow land application of some floor drain, trap, and holding tank wastes if the businesses generating the waste meet eligibility criteria and the wastewater or sludge is land applied under the conditions discussed in this fact sheet.

Businesses that are ineligible and wastes not managed under these conditions must meet all otherwise applicable requirements of the Minnesota Statutes and Rules. Contact the MPCA to determine your requirements. See [More information](#) on page 3.

Is vehicle wash and storage wastewater subject to the same conditions?

Instead of the conditions in this fact sheet, vehicle wash and storage sites may be able to land apply their wastewater under the reduced requirements discussed in MPCA fact sheet #wq-Indapp2-08, Land Application of Vehicle Wash and Vehicle Storage Wastewater, at <https://www.pca.state.mn.us/sites/default/files/wq-Indapp2-08.pdf>.

What other businesses are eligible generator to land apply their wastes?

Your business is eligible to land apply your wastes under the conditions in this fact sheet if:

- Your site is not already subject to a state or federal water quality or waste disposal permit, including a National Pollutant Discharge Elimination System (NPDES), State Disposal System (SDS), or Solid Waste Permit, for any activity other than stormwater.
- It generates less than 50,000 gallons and 10 dry tons of trap or holding tank waste annually.
- Your trap or holding tank waste is not a biosolid (sewage sludge) or mixed with a biosolid.
- Your trap or holding tank waste is not potentially contaminated with perfluorochemicals (PFCs), including any waste from metal plating, semiconductor manufacturing, carpet or upholstery cleaning, or firefighting foams.
- You follow the [floor drain Best Management Practices](#) on page 7 of this fact sheet, [sample](#) and [characterize](#) your waste as described on page 2, ensure it does not exceed any of the [contaminant thresholds](#), land apply it only on [suitable sites](#) at [appropriate loading rates](#), and keep [records](#) of your waste management.

How do I sample my trap and holding tank waste?

Follow these directions to collect samples of the trap or holding tank waste you want to land apply.

Collect representative samples of your wastes from the same points of your drain system where you will pump the waste for land application. After the initial sampling, you do not need to collect further samples unless you make substantive changes at your site that could affect the contaminants in your waste.

Before sampling a trap or holding tank, ensure it does not contain floating oils or greases. If it does, remove and manage them as used oil. See MPCA fact sheet #w-hw4-30, Managing Used Oil and Related Wastes, at <https://www.pca.state.mn.us/sites/default/files/w-hw4-30.pdf>.

If your trap or tank is stratified, with bottom sludge layer and wastewater portion above, ensure you collect a sample of each. Your laboratory will need to test them separately for different contaminants.

If your trap or tank contains a suspended mixture of sludge and wastewater, called a slurry, collect a sample of the slurry. Your sample must then be separated into solid and liquid portions to be tested separately.

Follow the sample preservation and submittal directions of your chosen laboratory.

How do I characterize my trap and holding tank waste?

Send your wastewater sample to an analytical laboratory to test it. You must use a laboratory accredited by the Minnesota Department of Health (MDH), another National Environmental Laboratory Accreditation Program (NELAP) reviewing body, or by another laboratory accreditation program recognized by the MPCA. To identify an MDH-certified laboratory, visit the MDH at <http://www.health.state.mn.us/> or contact the MPCA. See [More information](#) on page 3.

Direct your chosen laboratory to test your waste for both:

- [Waste application criteria](#) in Table 1 on page 4
- [Contaminant thresholds](#) in Table 2 on page 4

Note: Contaminants are listed by their common chemical name. However, remember that chemicals may be known by several different names. The Chemical Abstract Service (CAS) Registry numbers for each contaminant are provided to assist you and your laboratory to identify the correct contaminants to test for.

In addition, ensure that the laboratory tests your waste using the most current final version of the applicable test method (Method 6010 or 6010 for metals and Method 8260 for volatile organic compounds). See MPCA fact sheet #p-eao2-09c, Methods and Analytes Requiring Laboratory Certification, at <https://www.pca.state.mn.us/sites/default/files/p-eao2-09c.pdf>.

If the test results for your waste exceed any of the [contaminant thresholds](#), then it may not be land applied under the conditions in this fact sheet. Contact the MPCA to determine your requirements.

See [More information](#) on page 3.

Note: Check that the units in which the laboratory reports your test results match the units for the values in Table 2. If they do not match, you will need to convert the units from your laboratory report. Total milligrams of contaminant per kilogram of the waste (mg/kg) is equivalent to total parts per million (ppm). Total micrograms of contaminant per liter of liquid waste ($\mu\text{g/L}$) is equivalent to parts per billion (ppb).

Where may I land apply my waste?

You or a commercial applicator, sometimes known as a pumper/hauler, may land apply your wastewater at any site that meets all the criteria in Table 3, [Site suitability criteria](#), on page 6. The terms used in Table 3 are defined in the Soil Survey published by the Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture (USDA). You may also use the Soil Survey to identify the types and permeability of the soil at potential land application sites. You may find an online Soil Survey tool through the NRCS website at <https://www.nrcs.usda.gov/>.

Remember that even if you have other companies transport and land apply your wastewater, you remain responsible that all the conditions in this fact sheet, including site suitability and loading rates, are being met.

What are appropriate loading rates for my waste?

If your waste does not exceed any of the contaminant thresholds, it may be applied up to the limits listed in Table 4, [Loading rate limits](#), on page 6.

The loading rate limit for nitrogen is the Maximum Allowable Nitrogen Application (MANA) rate determined by the University of Minnesota Extension (Extension) in publication #BU-06240-S, Fertilizer Guidelines for Agronomic Crops in Minnesota, available through the Extension website at <http://www.extension.umn.edu/>.

Soil textures in Table 4 are based on USDA classifications.

Note: If the land application site already has been issued an SDS Permit, the land application must be supervised by a Type IV certified operator.

What records must I keep?

Both you, the transporter, and commercial applicator of your wastewater, if you use them, must keep the following records for at least three years from the last date the wastewater was land applied:

- [Waste application criteria](#) from Table 1 on page 4.
- Results of testing for the [contaminant thresholds](#) from Table 2 on page 4, including the sampling date and contact information for the laboratory that tested the waste.
- Documentation that each land application site met the [site suitability criteria](#) in Table 3 on page 6.
- Documentation that each land application event met the [loading rate limits](#) in Table 4 on page 7.
- Land application date and total volume.
- Identification of your business where the waste was generated, your transporter, and your commercial applicator, if you use them.

More information

Guidance and requirements in this fact sheet were compiled from Minn. R. ch. 7041, 7045, and 7050, and the MPCA's Soil Reference Values and the MDH's Human Health-based Water Guidance Table as of June 11, 2013, and incorporate regulatory interpretation decisions made by the MPCA on March 23, 2018. Visit the Office of the Revisor of Statutes at <https://www.revisor.mn.gov/pubs> to review applicable Minnesota Statutes and Rules.

For more information, contact the MPCA. The MPCA's Small Business Environmental Assistance Program can provide free, confidential compliance assistance for many businesses. The Minnesota Technical Assistance Program can assist you with waste minimization and pollution prevention. Report all spills of hazardous waste or other pollutants immediately to the Minnesota Duty Officer.

Minnesota Pollution Control Agency

Toll free (all offices)800-657-3864
All offices651-296-6300
.....<https://www.pca.state.mn.us/>

Small Business Environmental Assistance Program

Toll free800-657-3938
Metro651-282-6143
.....<https://www.pca.state.mn.us/sbeap/>

Minnesota Duty Officer

Toll free800-422-0798
Metro651-649-5451

Minnesota Technical Assistance Program

Toll free800-247-0015
Metro612-624-1300
.....<http://www.mntap.umn.edu>

Table 1. Waste application criteria

Criteria	Unit
Nitrogen, ammonia	Percent (%)
Nitrogen, Kjeldahl	%, Total
Sodium	mg/L, as Na
Solids	%, Total

Table 2. Contaminant thresholds

If your waste exceeds any of these thresholds, then it may not be land applied under the conditions in this fact sheet.

Note: Liquids do not need to be tested for contaminants marked with an asterisk * in the last column.

Contaminant	CAS Registry Number	Solids maximum threshold (mg/kg)	Liquids maximum threshold (µg/L)
Metals			
Arsenic	7440-38-2	5.8	5000.0
Barium	7440-39-3	1684.0	2000.0
Cadmium	7440-43-9	8.8	4.0
Chromium	7440-47-3	36.2	100.0
Copper	7440-50-8	702.0	*
Lead	7439-92-1	100.0	5000.0
Mercury	7439-97-6	1.5	200.0
Molybdenum	7439-98-7	16.1	*
Nickel	7440-02-0	176.2	100.0
Selenium	7782-49-2	2.6	30.0
Silver	7440-22-4	7.9	30.0
Zinc	7440-66-6	3004.0	2000.0
Organic compounds			
Acetone	67-64-1	8.4	4000.0
Allyl chloride	107-05-1	0.2	30.0
Benzene	71-43-2	0.1	2.0
Bromochloromethane	74-97-5	0.3	*
Bromodichloromethane	75-27-4	0.1	6.0
Bromoform	75-25-2	0.1	40.0
Bromomethane	74-83-9	0.1	10.0
n-Butylbenzene	104-51-8	92.0	*
sec-Butylbenzene	135-98-8	70.0	*
tert-Butylbenzene	98-06-6	90.0	*
Carbon tetrachloride	56-23-5	0.1	1.0
Chlorobenzene	108-90-7	1.2	100.0

Table 2. Contaminant thresholds (continued)

If your waste exceeds any of these thresholds, then it may not be land applied under the conditions in this fact sheet.

Contaminant	CAS Registry Number	Solids maximum threshold (mg/kg)	Liquids maximum threshold (µg/L)
Chlorodibromomethane	124-48-1	0.1	10.0
Chloroethane	75-00-3	3000.0	*
Chloroform	67-66-3	0.1	30.0
Chloromethane	74-87-3	0.1	*
2-Chlorotoluene	95-49-8	436.0	*
1,2 Dibromoethane (EDB)	106-93-4	0.1	0.004
1,2 Dichlorobenzene	95-50-1	10.6	600.0
1,3 Dichlorobenzene	541-73-1	10.4	*
1,4 Dichlorobenzene	106-46-7	0.2	10.0
1,2 Dichloroethane	107-06-2	0.1	1.0
cis-1,2 Dichloroethene	156-59-2	0.2	50.0
1,2 Dichloropropane	78-87-5	0.1	5.0
1,3 Dichloropropane	542-75-6	0.1	2.0
Dibromomethane	74-95-3	1860.0	*
Dichlorodifluoromethane	75-71-8	36.7	700.0
1,1 Dichloroethane	75-34-3	0.4	4.0
trans-1,2 Dichloroethene	156-60-5	0.4	40.0
1,1 Dichloroethene	75-35-4	1.4	200.0
Ethyl ether	60-29-7	0.5	200.0
Ethylbenzene	100-41-4	1.0	50.0
Hexachlorobutadiene	87-68-3	0.1	1.0
Isopropylbenzene	98-82-8	9.5	300.0
Methyl Ethyl Ketone (MEK)	78-93-3	8.8	4000.0
Methyl Isobutyl Ketone (MIBK)	108-10-1	0.8	300.0
Methylene chloride	75-09-2	0.1	5.0
Naphthalene	91-20-3	4.5	70.0
n-Propylbenzene	103-65-1	93.0	*
Styrene	100-42-5	2.0	*
1,1,1,2 Tetrachloroethane	630-20-6	0.4	70.0
1,1,2,2 Tetrachloroethane	79-34-5	0.1	2.0
Tetrachloroethylene (Perchloroethylene)	127-18-4	0.1	5.0
Tetrahydrofuran (THF)	109-99-9	0.2	*

Table 2. Contaminant thresholds (continued)

If your waste exceeds any of these thresholds, then it may not be land applied under the conditions in this fact sheet.

Contaminant	CAS Registry Number	Solids maximum threshold (mg/kg)	Liquids maximum threshold (µg/L)
Toluene	108-88-3	2.5	200.0
1,2,4 Trichlorobenzene	120-82-1	0.2	4.0
1,1,1 Trichloroethane	71-55-6	55.7	9000.0
1,1,2 Trichloroethane	79-00-5	0.1	3.0
Trichloroethylene (TCE)	79-01-6	0.1	0.4
Trichlorofluoromethane	75-69-4	35.0	2000.0
1,2,3 Trichloropropane	96-18-4	0.3	0.003
1,1,2 Trichlorotrifluoroethane	76-13-1	5430.0	200,000.0
1,2,4 Trimethylbenzene	95-63-6	2.7	100.0
1,3,5 Trimethylbenzene	108-67-8	2.7	100.0
Vinyl chloride	75-01-4	0.1	0.2
Xylene (all isomers)	1330-20-7	130.0	300.0

Table 3. Site suitability criteria

The site...	Must be...
Slope: <ul style="list-style-type: none"> When ground is not frozen or snow-covered When ground is frozen or snow-covered 	6% or less 2% or less
Depth to: <ul style="list-style-type: none"> Seasonal High Water Table for soils that are not highly permeable Seasonal High Water Table in highly permeable soil bedrock for soils that are not highly permeable bedrock in highly permeable soil 	3 feet or more 5 feet or more 3 feet or more 5 feet or more
Distance from: <ul style="list-style-type: none"> Drinking water wells Residences Nearest surface water when ground is not frozen or snow-covered Nearest surface water when ground is frozen or snow-covered 	200 feet or more 300 feet or more 200 feet or more 600 feet or more

The site must also:

- Be clearly identified at the time of application with easily seen markers such as stakes or fence tags to identify the boundaries of the actual land application.
- Not include public roads or public right-of-ways.
- Not be ponded with rain, meltwater, or wastewater.
- Be notified in writing to the county and township of location prior to the initial land application.

Table 4. Loading rate limits

You may apply...	Only up to...
Nitrogen	MANA (see appropriate loading rates on page 3)
Sodium	170 pounds per acre per year (lb/acre/year)
Total daily volume per acre: <ul style="list-style-type: none"> • When ground is not frozen or snow-covered: <ul style="list-style-type: none"> ○ Fine soil texture (clay, sandy clay, silty clay, clay loam and silty clay loam) ○ Medium soil texture (loam, silt, silt loam, and sandy clay loam) ○ Coarse soil texture (sand, loamy sand, and sandy loam) • When ground is frozen or snow-covered 	10,000 gallons per acre per day (gal/acre/day) 15,000 gal/acre/day 25,000 gal/acre/day 15,000 gal/acre total over entire period
<p>In addition, your waste must:</p> <ul style="list-style-type: none"> • Be applied evenly over the entire application area. • Not be allowed to run off from the application area. • Stop being applied if ponding begins to occur at the site. • Be injected or incorporated immediately after application if the: <ul style="list-style-type: none"> ○ Site is prone to flooding ○ Surface soil horizon permeability rate is less than 0.2 inch per hour 	

Floor drain best management practices

If you...	Then...
Are connected to a city sanitary sewer (POTW)	Notify the city's sewage treatment plant (POTW) operator about your floor drain wastes. Comply with any conditions required by the POTW.
Have a septic system at your site	Collect all floor drain waste in a holding tank. Ensure that no floor drain waste is discharged to the septic system or a 'daylighted' open drain.
Use aerosol-dispensed solvents or degreasers	<p>Clean parts over a drip pan, not the floor. Transfer the drip-off from the pan immediately after use to a closed waste container. Manage the waste container as instructed in MPCA fact sheet #w-hw1-05, Accumulate Hazardous Waste, at https://www.pca.state.mn.us/sites/default/files/w-hw1-05.pdf</p> <p>You may also consider cleaning parts in a parts washer instead of using aerosol-dispensed solvents and degreasers whenever possible.</p>
Change vehicle fluids (motor oil, brake fluid, etc.)	<p>Use drip pans under vehicles to collect fluids. Manage motor oil, brake fluid, and transmission fluid as used oil as instructed in MPCA fact sheet #w-hw4-30, Used Oil and Related Wastes, at https://www.pca.state.mn.us/sites/default/files/w-hw4-30.pdf.</p>
Clean shop floors	<p>Use dry sweeping compounds if needed instead of hosing floors down. Manage used sweeping compounds and other absorbents contaminated with fuels or used oil, such as floor dry, as used oil-related wastes as instructed in MPCA fact sheet #w-hw4-30, Used Oil and Related Wastes, at https://www.pca.state.mn.us/sites/default/files/w-hw4-30.pdf.</p>
Spill products or wastes	<p>Clean up all spills immediately, even small ones.</p> <p>Maintain appropriate spill control equipment and perform required emergency planning for your hazardous waste generator size. See MPCA emergency planning fact sheets for:</p> <ul style="list-style-type: none"> • Very Small Quantity Generators #w-hw1-08a https://www.pca.state.mn.us/sites/default/files/w-hw1-08a.pdf • Small Quantity Generators #w-hw1-08b https://www.pca.state.mn.us/sites/default/files/w-hw1-08b.pdf • Large Quantity Generators #w-hw1-08c https://www.pca.state.mn.us/sites/default/files/w-hw1-08c.pdf <p>If you are unsure of your hazardous waste generator size, see MPCA fact sheet #w-hw1-02, Determine Generator Size, at https://www.pca.state.mn.us/sites/default/files/w-hw1-02.pdf.</p>
Store liquid chemicals, fuels, or oils	Keep containers closed. Ensure all product containers are labeled with their contents. Store flammable chemicals in a fire-resistant cabinet with integral containment.
Store liquid wastes	Keep containers closed. Ensure that no possible leaks could reach your floor drain. Inspect waste containers weekly. Follow all other waste accumulation requirements in MPCA fact sheet #w-hw1-05, Accumulate Hazardous Waste, at https://www.pca.state.mn.us/sites/default/files/w-hw1-05.pdf
Wash vehicles	Post signs prohibiting engine washing by employees and customers. Immediately stop any employee or customer washing engines.