

US EPA ARCHIVE DOCUMENT



Industrial Floor Drains and Ground Water Quality

Floor drains in industrial and commercial settings can cause significant contamination if used improperly. While many industries have begun investing in cleaner technologies, floor drains remain an easy method of disposing of wash water that may contain small concentrations of hazardous or toxic chemicals. Floor drains may be plumbed to a municipal sewer line, or they may just lead to a subsurface disposal point. When floor drains discharge to soil, the drain, the pipes and all associated structures for conveyance of wastewater to soil are called a **shallow injection well**.

Used or spilled fuel, solvents, waste oil, paints, and other maintenance fluids pose a risk to the environment but may be especially harmful if they enter someone's drinking water supply. Floor drains at facilities which use these substances should be evaluated. Facility managers should know if floor drains and other drains from sinks, toilets, showers etc. lead to a municipal sewer line, to a surface discharge, or to a shallow injection well.

Shallow injection wells allow waste to percolate into soil. Because of their potential to contaminate underground sources of drinking water, they are regulated through the U.S. Safe Drinking Water Act, Underground Injection Control (UIC) regulations. Owners and operators of shallow injection wells are usually not required to obtain a federal permit, but are required to submit inventory information to their state or federal Underground Injection Control (UIC) programs so that actions can be taken where necessary to prevent contamination of underground sources of drinking water. UIC programs have the authority to request additional information about particular wells, or require a permit if there is a risk of contamination from a facility. **State and local programs may have more stringent permitting requirements** than the federal regulations.

Some types of industries have higher incidences of soil and ground water contamination than others. So some state and EPA UIC programs have permits or other requirements for those particular industries or types of waste discharge. For example, **the construction of new motor vehicle waste disposal wells is banned effective April 5, 2000 (nationwide) because of the potential for such wells to discharge fuel and motor repair fluids to the ground.** Existing motor vehicle waste disposal wells may be required to close or meet conditions of a discharge permit.

When the motor vehicle waste disposal well regulations were proposed, EPA also proposed additional regulations for shallow injection wells receiving industrial waste. Those regulations have not been adopted, but could apply in the future.

To help business owners and facility managers assess their environmental liability and comply with ground water protection regulations, EPA has prepared this information to accompany the **Inventory of Injection Wells form**. In order to be authorized to operate an injection well, owners or operators of injection wells are required to submit this information to EPA or to the delegated Underground Injection Control Program in their state.



A **shallow injection well** includes any subsurface excavation, such as a drywell, seepage pit, septic system, leach field, or unlined sump, through which waste water is disposed below ground.

Definition of motor vehicle waste disposal well: 144.81(16)
Motor vehicle waste disposal wells (are defined as wells) that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, new and used car dealership, specialty repair shop (e.g. transmission and muffler shop) or any facility that does any vehicular repair work.

Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR Part 142). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.



Evaluating Floor Drains

Here are steps to determine whether or not a facility uses Class V shallow injection wells:

1. **Identify all floor drains** and other possible points of entry to subsurface pipelines in hazardous material use/storage areas, fueling areas, wash bays, or industrial process areas.
2. **For each drain, identify the drain's final point of discharge.** This may be achieved by presentation of sewer or holding tank permits, or stamped, "as-built" plans, by performing dye or smoke tests, looking at the pipe using downhole cameras, reviewing records of tank pumping, or simply by examining the floor drain grates or popping separator or sewer manhole covers.
3. **If no absolute determination can be made** as to where a pipe ends, or if you determine that it ends with disposal to soil, you have a shallow injection well.
4. **Comply with the inventory requirement.** (insert website xxxxxxx) EPA will share the information with the appropriate state and local agencies, who may get back to you about your well.

Other Risk Factors:

- **Present activities.** Does facility manage hazardous materials, particularly solvents & other volatile compounds? (*Examples: dry cleaner, auto body shop, metal plating*) How are potentially hazardous fluids prevented from entering a floor drain? What spill containment practices are used?
- **Historic Activities.** Were any former occupants of the site likely to have disposed hazardous or toxic waste to floor drains?

IF YOUR INJECTION WELL NEEDS TO BE CLOSED:

The regulations specify minimum requirements for closure of an injection well: §144.89. You must plug or otherwise close the well in a manner that complies with the prohibition of fluid movement standard in §144.12 and summarized in §144.82(a). If the UIC Program Director in your State or EPA Region has any additional or more specific closure standards, you have to meet those standards too. You also must dispose or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to your well in accordance with all applicable Federal, State, and local regulations and requirements, as in §144.82 (b).

EPA Region 9 requires that site characterization and closure of shallow injection wells where hazardous or toxic materials may be present be overseen and approved by a hazardous materials regulator from the local or state government (or EPA) and be performed by a qualified environmental professional.

Federal closure guidance is available; call (415) 744-2250. For state contacts, see last page.

EPA's Audit Policy and self-disclosure policy encourages businesses who discover violations to promptly disclose, correct and prevent violations. If appropriate criteria are met, EPA may reduce gravity-based penalties. For more information, please call the Small Business Office at (800) 368-5888 EST, or see their website at www.epa.gov/sbo.

- **Proximity to ground and surface water:** How far is it to the nearest private or public drinking water well? How far is it to the nearest creek, river, lake or shore?
- **Operations Permits.** Do any permits you have on file with the local building or health department require you to monitor discharges to your floor drain?
- **Sampling.** Have you ever had the sludge below the drain analyzed by an environmental laboratory for toxic or hazardous constituents?

DEFINITIONS FROM THE UIC REGULATIONS

§144.3 Changes to definitions and new definitions: cesspool, drywell, improved sinkhole, point of injection, sanitary waste, septic system, subsurface fluid distribution system, well, and well injection.

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.

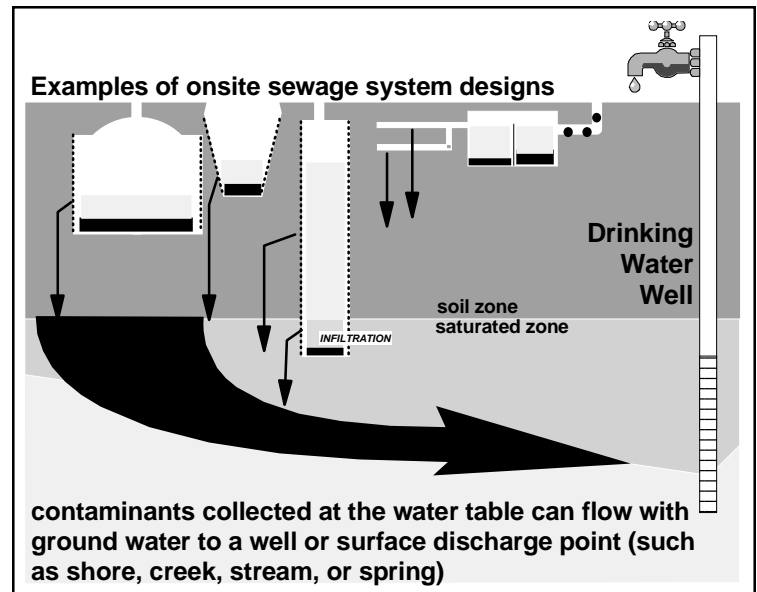
Point of Injection means the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the *point of injection* of a Class V septic system might be the distribution box - the last accessible sampling point before the waste fluids drain into the underlying soils. For a drywell, it is likely to be the well bore itself.

Sanitary Waste means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

Septic system means a "well" that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system.

Subsurface fluid distribution system means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

(Injection) Well means: A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.



SUMMARY OF NEW SUBPART G (old citation follows)

§144.80 What is a Class V injection well?

§144.81 Examples of types of Class V wells.

§144.82 Prohibition of fluid movement, regulatory tools to ensure protection, including steps for closure of wells that endanger ground water. (40 CFR part 144.12)

§144.83 Inventory requirement for all Class V wells, and (b) examples of information which may be requested from a specific well owner. (144.26, 144.27)

§144.84 Criteria for authorization by rule to operate a Class V injection well, permits, and closure. (144.26)

§144.85 New restrictions on large capacity cesspools and motor vehicle waste disposal wells.

§144.86 Information for well owners regarding Source Water Assessments.

§144.89 Summary of steps required for closure or conversion of injection wells.

DISCLAIMER

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For more information about Best Management Practices

EPA Small Business Office:

<http://www.epa.gov/smallbusiness/help.htm>
or call (800) 368-5888.



EPA Compliance Assistance Centers:

<http://es.epa.gov/oeca/main/compasst/compcenters.html>,

with links to assistance for these specific industries:
automotive service, chemicals, local government,
metal finishing, paints and coatings, printed wiring
boards, printing, and transportation

EPA Region 9 Automotive Pollution Prevention Guides, video: http://www.epa.gov/region09/cross_pr/p2/autofleet/index.html

Dry Cleaning: (independent site)

<http://www1.umn.edu/mntap/P2/DRYCL/fs54-r17.htm>

THIS DOCUMENT can be downloaded from:
insert http: when available

Ground Water Protection/UIC Programs in EPA Region 9

CALIFORNIA
Call EPA
(415) 972-3537
or the California
Regional Water
Quality Control
Board near you
www.swrcb.ca.gov



NEVADA
Call the Nevada
Division of
Environmental Protection
Water Permit Program
(775) 687-4670
www.state.nv.us/ndep/bwpc/bwpc01.htm

HAWAII
Call the Safe
Drinking Water
Branch, Hawaii
Department of Health
(808) 586-4258
www.hawaii.gov/health/eh/sdwb/index.html

INDIAN COUNTRY
Call (415) 972-3544
http://www.epa.gov/region09/cross_pr/indian/index.html

ARIZONA
Call the Arizona
Department of
Environmental
Quality, Aquifer
Protection Permit
Program, at (602)
207-4573
www.adeq.state.az.us/environ/water

To report your injection well, or request compliance assistance

NATIONWIDE - CALL (800) 426-4791, the SAFE DRINKING WATER HOTLINE (E.S.T.)

EPA REGION 9 UIC PROGRAM: (415) 972-3542

U.S. Environmental Protection Agency, Region 9
Underground Injection Control Program (WTR-9)
75 Hawthorne Street
San Francisco, California 94105-3109

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