UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF WATER

MEMORANDUM

SUBJECT: Clarification on which stormwater infiltration practices/technologies have the potential to be regulated as "Class V" wells by the Underground Injection Control Program

TO: Water Division Directors, Regions 1-10

FROM: Linda Boornazian, Director
Water Permits Division (MC 4203M)

Steve Heare, Director
Drinking Water Protection Division (MC 4606M)

Over the past several years stormwater infiltration has become an increasingly effective tool in the management of stormwater runoff. Although primary stormwater management responsibilities within EPA fall under the Clean Water Act (CWA), the infiltration of stormwater is, in some cases, regulated under the Safe Drinking Water Act (SDWA) with the goal of protecting underground sources of drinking water (USDWs). Surface and ground water protection requires effective integration between the overlapping programs. This memorandum is a step forward in that effort and is meant to provide clarification on stormwater implementation and green infrastructure, in particular under the CWA, which is consistent with the requirements of the SDWA's Underground Injection Control (UIC) Program.

In April 2007, EPA entered into a collaborative partnership with four national groups (the Association of State and Interstate Water Pollution Control Administrators, the Low Impact Development Center, the National Association of Clean Water Agencies, and the Natural Resources Defense Council) to promote green infrastructure as a cost-effective, sustainable, and environmentally friendly approach to stormwater management. The primary goals of this collaborative effort are to reduce runoff volumes and sewer overflow events through the use of green infrastructure wet weather management practices.

Within the context of this collaborative partnership, green infrastructure includes a suite of management practices that use soils and vegetation for infiltration, treatment, and evapotranspiration of stormwater. Rain gardens, vegetated swales, riparian buffers and porous pavements are all common examples of green infrastructure techniques that capture and treat stormwater runoff close to its source. Green infrastructure management practices typically do not include commercially manufactured or proprietary infiltration

devices or other infiltration practices such as simple drywells, which do not provide for pre-treatment prior to infiltration.

The partnership is promoting green infrastructure as an effective approach to stormwater management because these practices are associated with a number of environmental benefits. In addition to reducing and delaying runoff volumes, green infrastructure approaches can also reduce pollutant levels in stormwater, enhance ground water recharge, protect surface water from stormwater runoff, increase carbon sequestration, mitigate urban heat islands, and increase wildlife habitat.

Given the multiple benefits that green infrastructure can provide, EPA and its partners have increased efforts to incorporate green infrastructure techniques into stormwater management strategies nationwide. In recent years, public support for these practices has gradually increased. For more information on green infrastructure, please visit www.epa.gov/npdes/greeninfrastructure.

There are cases where stormwater infiltration practices are regulated as Class V wells under the UIC program, and State and local stormwater managers report that some developers are hesitant to incorporate green infrastructure practices because they fear regulatory approvals will slow the process and increase costs. EPA believes those fears are unfounded and notes that most green infrastructure practices do not meet the Class V well definition and can be installed without regulatory oversight by the UIC Program. However, EPA remains committed to the protection of USDWs and emphasizes the need for UIC program compliance (per 40 CFR 144).

To provide clarification on which stormwater infiltration techniques meet EPA's UIC Class V well definition, EPA's Office of Water has developed the attached "Class V Well Identification Guide." State or Regional stormwater and nonpoint source control programs, developers, and other interested parties are requested to contact the State or Regional UIC Program Director with primary authority for the UIC Class V program when considering the use of practices that have been identified, or potentially identified, as Class V wells. UIC program managers should consider the proximity to sensitive ground water areas when looking at the suitability of stormwater infiltration practices. Depending on local conditions, infiltration without pretreatment may not be appropriate in areas where ground waters are a source of drinking water or other areas identified by federal, state, or local governments as sensitive ground water areas, such as aquifers overlain with thin, porous soils.

Please share this memo and the attached guide with your State and Regional stormwater, nonpoint source control, UIC and other ground water managers, as well as with appropriate green infrastructure contacts. These programs are encouraged to coordinate on stormwater management efforts when sensitive ground water issues arise.

Attachment

Underground Injection Control (UIC) Program Class V Well Identification Guide

This reference guide can be used to determine which stormwater infiltration practices/technologies have the potential to be regulated as "Class V" wells. Class V wells are wells that are not included in Classes I through IV. Typically, Class V wells are shallow wells used to place a variety of fluids directly below the land surface. By definition, a well is "any bored, drilled, driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system" and an "injection well" is a "well" into which "fluids" are being injected (40 CFR §144.3). Federal regulations (40 CFR §144.83) require all owners/operators of Class V wells to submit information to the appropriate regulatory authorities including the following:

1. Facility name and location
2. Name and address of legal contact
3. Ownership of property
4. Nature and type of injection well(s)
5. Operating status of injection well(s)

For more information on Class V well requirements, please visit http://www.epa.gov/safewater/uic/class5/comply_minrequirements.html. For more information on green infrastructure, please visit http://www.epa.gov/npdes/greeninfrastructure.

The stormwater infiltration practices/technologies in rows A through I below are generally not considered to be wells as defined in 40 CFR §144.3 because typically they are not subsurface fluid distribution systems or holes deeper than their widest surface dimensions. If these practices/technologies are designed in an atypical manner to include subsurface fluid distribution systems and/or holes deeper than their widest surface dimensions, then they may be subject to the Class V UIC regulations. The stormwater infiltration practices/technologies in rows J through K however, depending upon their design and construction probably would be subject to UIC regulations.

	Infiltration Practice/Technology	Description	Is this Practice/Technology Generally Considered a Class V Well?
A	Rain Gardens & Bioretention Areas	Rain gardens and bioretention areas are landscaping features adapted to provide on-site infiltration and treatment of stormwater runoff using soils and vegetation. They are commonly located within small pockets of residential land where surface runoff is directed into shallow, landscaped depressions; or in landscaped areas around buildings; or, in more urbanized settings, to parking lot islands and green street applications.	No.
B	Vegetated Swales	Swales (e.g., grassed channels, dry swales, wet swales, or bioswales) are vegetated, open-channel management practices designed specifically to treat and attenuate stormwater runoff. As stormwater runoff flows along these channels, vegetation slows the water to allow sedimentation, filtering through a subsoil matrix, and/or infiltration into the underlying soils.	No.
C	Pocket Wetlands & Stormwater Wetlands	Pocket/Stormwater wetlands are structural practices similar to wet ponds that incorporate wetland plants into the design. As stormwater runoff flows through the wetland, pollutant removal is achieved through settling and biological uptake. Several design variations of the stormwater wetland exist, each design differing in the relative amounts of shallow and deep water, and dry storage above the wetland.	No.
D	Vegetated Landscaping	Self-Explanatory.	No.
E	Vegetated Buffers	Vegetated buffers are areas of natural or established vegetation maintained to protect the water quality of neighboring areas. Buffer zones slow stormwater runoff, provide an area where runoff can infiltrate the soil, contribute to ground water recharge, and filter sediment. Slowing runoff also helps to prevent soil and stream bank erosion.	No

	Infiltration Practice/Technology	Description	Is this Practice/Technology Generally Considered a Class V Well?
F	Tree Boxes & Planter Boxes	Tree boxes and planter boxes are generally found in the right-of-ways alongside city streets. These areas provide permeable areas where stormwater can infiltrate. The sizes of these boxes can vary considerably.	No.
G	Permeable Pavement	Permeable pavement is a porous or pervious pavement surface, often built with an underlying stone reservoir that temporarily stores surface runoff before it infiltrates into the subsoil. Permeable pavement is an environmentally preferable alternative to traditional pavement that allows stormwater to infiltrate into the subsoil. There are various types of permeable surfaces, including permeable asphalt, permeable concrete and even grass or permeable pavers.	No.
H	Reforestation	Reforestation can be used throughout a community to reestablish forested cover on a cleared site, establish a forested buffer to filter pollutants and reduce flood hazards along stream corridors, provide shade and improve aesthetics in neighborhoods or parks, and improve the appearance and pedestrian comfort along roadsides and in parking lots.	No.
I	Downspout Disconnection	A practice where downspouts are redirected from sewer inlets to permeable surfaces where runoff can infiltrate.	In certain circumstances, for example, when downspout runoff is directed towards vegetated/pervious areas or is captured in cisterns or rain-barrels for reuse, these practices generally would not be considered Class V wells.
J	Infiltration Trenches	An infiltration trench is a rock-filled trench designed to receive and infiltrate stormwater runoff. Runoff may or may not pass through one or more pretreatment measures, such as a swale, prior to entering the trench. Within the trench, runoff is stored in the void space between the stones and gradually infiltrates into the soil matrix. There are a number of different design variations.	In certain circumstances, for example, if an infiltration trench is "deeper than its widest surface dimension," or includes an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground, it would probably be considered a Class V injection well.

	Infiltration Practice/Technology	Description	Is this Practice/Technology Generally Considered a Class V Well?
K	Commercially Manufactured Stormwater Infiltration Devices	Includes a variety of pre-cast or pre-built proprietary subsurface detention vaults, chambers or other devices designed to capture and infiltrate stormwater runoff.	These devices are generally considered Class V wells since their designs often meet the Class V definition of subsurface fluid distribution system.
L	Drywells, Seepage Pits, Improved Sinkholes.	Includes any bored, drilled, driven, or dug shaft or naturally occurring hole where stormwater is infiltrated.	These devices are generally considered Class V wells if stormwater is directed to any bored, drilled, driven shaft, or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system.