ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 144 and 146

[FRL–5280–5]

RIN 2040–AB83

Class V Wells—Regulatory Determination and Minor Revisions to the Underground Injection Control Regulations; Technical Correction to the Regulations for Class I Wells

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: Today's proposal presents the findings of the Environmental Protection Agency (EPA) with regard to the need for additional Underground Injection Control (UIC) regulations for Class V wells. Typically, Class V wells are shallow wells which inject a variety of fluids directly below the land surface. They include shallow non-hazardous industrial waste injection wells, septic systems, storm water drainage wells, and assorted other wells that have been found in some instances to emplace potentially harmful levels of contaminants into and above underground sources of drinking water. All Class V wells are currently authorized by rule provided they do not endanger underground sources of drinking water (USDWs) and meet certain minimum requirements.

Because EPA has found that some of these wells pose environmental hazards, EPA is developing a comprehensive strategy to manage these hazards. As part of this strategy, EPA will continue to authorize Class V wells by rule but will aggressively use the authority provided by the current regulations to achieve the closure of Class V wells which may endanger USDWs and the proper management of other Class V wells.

EPA is also proposing some minor changes to the UIC regulations that would make it easier for the regulated community to understand who is subject to the current Class V UIC requirements and what these requirements mean to the owners of a specific type of well.

DATES: EPA will accept public comment, in writing, on the proposed regulations until October 27, 1995.

A public hearing has been tentatively scheduled for October 18, 1995, from 1 pm to 4 pm EST. Requests for a public hearing must be received by September 27, 1995. When requesting a public hearing, please state the nature of the issues proposed to be raised. EPA expressly reserves the right to cancel this hearing unless a significant degree of public interest is evidenced by the above date.

ADDRESSES: Address written comments to UIC Amendments, Water Docket (mail code 4101), USEPA, 401 M Street, SW, Washington, DC 20460. Please submit all references cited in your comments. Facsimiles (faxes) cannot be accepted. EPA would appreciate 1 original and 3 copies of your comments (including any references). Commenters who would like EPA to acknowledge receipt of their comments should include a self-addressed, stamped envelope.

The hearing will be held in the EPA Auditorium of the EPA Training Center, Waterside Mall, 401 M Street, SW, Washington DC.

The proposed rule and supporting documents, including public comments, are available for review in the Water Docket at the above address. For information on how to access Docket materials, please call (202) 260–3027 between 9 a.m. and 3:30 p.m.

Requests for a public hearing should be addressed to Lee Whitehurst, EPA, Office of Ground Water and Drinking Water (mail code 4602), 401 M Street, SW, Washington DC.

FOR FURTHER INFORMATION CONTACT: Lee Whitehurst, Underground Injection Control Branch, Office of Ground Water and Drinking Water (mailcode 4602), EPA, 401 M Street, SW, Washington DC, 20460. Phone: 202–260–5532.

SUPPLEMENTARY INFORMATION:

Preamble Outline

I. Background

A. Statutory and Regulatory Framework

Class V wells are regulated under the authority of Part C of the Safe Drinking Water Act (SDWA or the Act) (42 U.S.C. 300h *et seq.*). The SDWA is designed to protect the quality of drinking water in the United States, and Part C specifically mandates the regulation of underground injection of fluids through wells. The Agency has promulgated a series of underground injection control (UIC) regulations under this authority.

Section 1421 of the Act requires EPA to propose and promulgate regulations specifying minimum requirements for State programs to prevent underground injection that endangers drinking water sources. EPA promulgated administrative and permitting regulations, now codified in 40 CFR parts 144 and 146, on May 19, 1980 (45 FR 33290), and technical requirements in 40 CFR part 146 on June 24, 1980 (45 FR 42472). The regulations were subsequently amended on August 27, 1981 (46 FR 43156), February 3, 1982 (47 FR 4992), January 21, 1983 (48 FR 2938), April 1, 1983 (48 FR 14146), July 26, 1988 (53 FR 28118), December 3, 1993 (58 FR 63890) and June 29, 1995 (60 FR 33926).

Section 1422 of the Act provides that States may apply to EPA for primary responsibility to administer the UIC program (those States receiving such authority are referred to as ''Primacy States''). Where States do not seek this responsibility or fail to demonstrate that they meet EPA's minimum requirements, EPA is required to prescribe, by regulation, a UIC program for such States. These direct implementation (DI) programs were promulgated in two phases, on May 11, 1984 (49 FR 20138) and November 15, 1984 (49 FR 45308).

1. Categories of Class V Wells

The UIC regulations define and establish five classes of injection wells. Class I wells are used to inject hazardous and non-hazardous waste beneath the lowermost formation containing a USDW within one-quarter mile of the well bore. Class II wells are used to inject fluids associated with oil and natural gas recovery and storage of liquid hydrocarbons. Class III wells are used in connection with the solution mining of minerals. Class IV wells are used to inject hazardous or radioactive wastes into or above a formation that is within one-quarter mile of a USDW. (Class IV wells are generally prohibited by 40 CFR 144.13.) Class V wells are defined in the regulations as any well not included in Classes I through IV.

Class V injection wells are generally shallow waste disposal wells, stormwater and agricultural drainage systems, or other devices that are used to release fluids either directly into USDWs or into the shallow subsurface that overlies USDWs. In some instances, the fluids released by these wells contain elevated concentrations of contaminants that may endanger drinking water supplies. EPA estimates that more than one million Class V wells currently exist in the United States. These wells are located in virtually every State, especially in unsewered areas where the population is likely to depend on ground water. Frequently, Class V wells are designed as no more than shallow holes or septic tank and leachfield combinations intended for sanitary waste disposal. Such systems are often used for the disposal of industrial wastes or other fluids that may have not been treated, potentially releasing elevated levels of contaminants directly into the same ground water that may be used as a drinking water supply by surrounding residences and communities. Such wells are commonly located at automobile service stations, print shops, dry cleaners, shopping centers, equipment manufacturers, and other commercial and industrial establishments.

Today, EPA is proposing to retain the current definition of Class V wells. However, the regulations also contain a non-inclusive list of 16 types of Class V wells (§ 146.5). This list was further divided into 32 categories in the *Report to Congress* on Class V Wells, which EPA published in 1987 in response to a mandate of the SDWA amendments of 1986. The Report to Congress drew the distinctions between the well types based on the design of the well, in some instances, and on the types of fluids injected, in others. In reviewing the Report to Congress, the Agency has determined that some of these distinctions are of little consequence as far as the risk posed by the wells and the appropriate management scheme. Therefore, for today's proposal the Agency has grouped Class V wells in ten more appropriate categories which combine together wells that are mostly similar both in terms of the nature of fluids that they inject and their potential to endanger USDWs.

The 10 general categories of Class V wells are:

- ''Beneficial Use Wells'' which include a variety of well types used either to improve the quality or flow of aquifers or to provide some other benefit, such as preventing salt water intrusion or controlling subsidence.
- ''Fluid Return Wells'' which are used to inject spent fluids associated with the production of geothermal energy for space heating or electric power, the operation of a heat pump, the extraction of minerals, or aquaculture.
- ''Sewage Treatment Effluent Wells'' which are used to inject effluent from publicly or privately owned treatment facilities.
- ''Cesspools'' which are wells that receive untreated sanitary waste. They may have open bottoms, and are typically located in areas not served by sanitary sewers. Under today's proposal, only those cesspools having the capacity to serve 20 persons or more a day would be considered Class V injection wells subject to the UIC regulations [1].
- ''Septic Systems'' which are wells comprised of septic tanks and fluid distribution systems (e.g., leachfields) used to dispose of sanitary waste only. Only those septic systems having the capacity to serve 20 or more persons per day would be considered Class V injection wells subject to the UIC regulations [1].
- ''Experimental Technology Wells'' which include any injection well used as part of an unproven subsurface injection technology.
- ''Drainage Wells'' which consist of a variety of wells used to drain surface and subsurface fluids including storm water and agricultural runoff.
- ''Mine Backfill Wells'' which are used to place slurries of sand, gravel, cement, mill tailings/refuse, or fly ash into underground mines. Mine backfill wells serve a variety of purposes ranging from subsidence prevention to control of underground fires.
- ''In-situ and Solution Mining Wells'' which are used to liberate fossil fuels from the geologic formation which contains them or to bring minerals from underground deposits to the surface. They do not include wells specifically listed as Class III wells under § 146.5.
- ''Industrial Waste Discharge Wells'' which are used to inject wastewaters generated by industrial, commercial, and service establishments.

Table 1 shows how these categories relate to the listing of wells in § 146.5(e) of the current regulations and the Class V well types addressed in EPA's 1987 Report to Congress.

TABLE 1—CATEGORIES OF CLASS V INJECTION WELLS

Category in today's proposal	Injection wells in category	Current § 146.5	Corresponding injection wells in report to congress
Beneficial Use	Aquifer Recharge	(e)(6)	5R21 (Aquifer Recharge).
	Salt Water Intrusion Barrier	(e)(7)	5B22 (Saline Water Intrusion Barrier).

[1] **Note:** The current regulations exclude individual single family and non-residential cesspools and septic systems having the capacity to serve fewer than 20 persons per day. For reasons explained in this preamble, the distinction between residential and non-residential sanitary waste disposal systems is unnecessary and could be eliminated by applying the 20 person cut-off to all systems.

TABLE 1—CATEGORIES OF CLASS V INJECTION WELLS—Continued

Category in today's proposal	Injection wells in category	Current § 146.5	Corresponding injection wells in report to congress
	Subsidence Control	(e)(10)	5S23 (Subsidence Control).
	Aquifer Storage and Recovery	Not Listed	5X26 (Aquifer Remediation Related).
	Subsurface Enfironmental Remediation	(e)(6).	
Fluid Return	Wells used to inject spent brines after the extraction of minerals.	(e)(14)	5A6 (Direct Heat Return). 5A8 (Ground-water Aquaculture Return Flow).
	Wells used to inject heat pump return fluids	(e)(1)	5A5 (Electric Power Return). 5X16 (Spent-Brine Return Flow).
	Wells used to inject fluids that have undergone chemical alteration during the production of geothermal energy for heating, aquaculture, or production of electric power.	(e)(12)	5A7 (Heat Pump/Air Conditioning Return Flow).
Sewage Treatment Effluent.	Wells used to inject effluent from POTWs, or privately owned treatment works receiving solely sanitary sewage.	Not Listed	5W12 (Domestic Wastewater Treatment Plant Effluent Disposal).
Cesspools	Cesspools having the capacity to serve 20 persons or more per day and used solely for the subsurface emplacement of sanitary waste.	(e)(2)	5W9 (Untreated Sewage Waste (Disposal). 5W10 (Cesspools).
Septic Systems	Septic tank and fluid distribution system having the capacity to serve 20 persons or more per day and used solely for the subsurface emplacement of sanitary waste.	(e)(9)	5W11 (Septic Systems—Undifferentiated Disposal). 5W32 (Septic Systems-Drainfield Disposal). 5W31 (Septic Systems—Well Disposal).
Experimental Technology.	Wells used as part of unproven subsurface injection technologies other than waste disposal.	(e)(15)	5X25 (Experimental Technology).
Drainage	Wells used to drain surface and subsurface fluids, including agricultural drainage and storm water runoff, other than runoff from loading dock areas, storage areas, and process areas.	(e)(4)	5D2 (Stormwater Drainage). 5F1 (Agricultural Drainage). 5D3 (Improved Sinkholes). 5G30 (Special Drainage).
Mine Backfill	Wells used to inject a mixture of water, air, and sand, mill tailings, or other solids into mined out portions of subsurface mines.	(e)(8)	5X13 (Mining, Sand, or Other Backfill).
In Situ and Solution Mining.	Wells used to inject fluids for the purpose of producing minerals or energy, which are not Class II or III wells.	(e)(13) (e)(16)	5X14 (Solution Mining). 5X15 (In situ Fossil Fuel Recovery).
Industrial Waste Discharge.	Wells used to inject wastewaters generated by industrial, commercial, and service establishments and which are not included in the proposed § 146.5 e(1) through e(9).	(e)(5)	5X27 (Other). 5D4 (Industrial Drainage). 5W20 (Industrial Process Water and Waste Disposal). 5X28 (Automobile Service Station Disposal). 5X17 (Air Scrubber Waste Disposal). 5X18 (Water Softener Regeneration Brine Disposal). 5X19 (Abandoned Drinking Water Wells, if used for the subsurface emplacement of industrial or commercial wastes not injected in above categories of Class V wells).

2. Requirements Applicable to Class V Wells

Class V wells are currently authorized by rule (§ 144.24 (a)). Well authorization under this section expires upon the effective date of a permit issued pursuant to §§ 144.25, 144.31, 144.33 or 144.34, or upon proper closure of the well. The current regulations subject Class V wells to the general statutory and regulatory prohibitions against endangerment of USDWs, as well as some specific requirements. Under § 144.12(a), owners or operators of all UIC wells, including Class V injection wells, are prohibited from engaging in any injection activity that allows the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect human health. Sections 144.12(c) and (d) prescribe mandatory and discretionary actions to be taken by the Director if a well may not be in compliance with § 144.12(a). Specifically, the Director must choose between requiring the injector to apply for an individual permit, ordering such action as closure of the well to prevent endangerment, or taking an enforcement action. As described in section II.A below, EPA and the States have effectively used these authorities to control priority Class V wells.

Owners or operators of Class V injection wells must also submit basic

inventory and assessment information under § 144.26. In addition, Class V wells are subject to the general program requirements of § 144.25 under which the Director may require a permit, if necessary, to protect USDWs. Moreover, under § 144.27, EPA may require owners or operators of any Class V well, in EPA administered programs, to submit additional information deemed necessary to protect USDWs. Owners or operators who fail to submit the information required under §§ 144.26 and 144.27 are prohibited from using their injection wells.

B. Report To Congress on Class V Wells

In accordance with the 1986 Amendments to the SDWA (42 U.S.C. 300h–5(b)), EPA summarized information on 32 categories of Class V wells in a Report to Congress entitled Class V Injection Wells—Current Inventory; Effects on Ground Water; and Technical Recommendations, September 1987 (EPA Document Number 570/9–87–006). This report presents a national overview of Class V injection practices and State recommendations for Class V design, construction, installation, and siting requirements. These State recommendations, however, did not give EPA a clear mandate on how to handle Class V wells. For any given type of well, the recommendations can vary broadly and are rarely made by more than two or three States. For example, the recommendations for septic systems range from further studies (3 States) to State-wide ground water monitoring (1 State). For industrial waste water wells, some States recommend immediate action and closure while others recommend monitoring and ground water evaluation studies.

C. Consent Decree with the Sierra Club

On December 30, 1993, the Sierra Club filed a complaint against EPA in the United States District Court for the District of Columbia alleging that EPA failed to comply with section 1421 of the SDWA regarding publication of proposed and final regulations for Class V injection wells. In particular, the complaint alleges that EPA's current regulations regarding Class V wells do not meet the SDWA's statutory requirements to ''prevent underground injection which endangers drinking water sources.'' (Complaint, ¶15)

EPA entered into a consent decree with the Sierra Club which provides that no later than August 15, 1995, the Administrator shall sign a notice to be published in the **Federal Register** proposing regulatory action that fully discharges the Administrator's rulemaking obligations under section 1421 of the SDWA, 42 U.S.C. 300h, with respect to Class V injection wells. Under the consent decree in this notice, EPA must (1) propose additional regulations with respect to all Class V injection wells, (2) propose a decision that no further rulemaking for these wells is necessary, or (3) propose additional regulations for some Class V injection wells and a decision that no further rulemaking is necessary for the remaining wells (Consent Decree, ¶2). The consent decree further provides that, no later than November 15, 1996, the Administrator shall sign a final rulemaking notice to be published in the **Federal Register** fully discharging the Administrator's rulemaking obligations under section 1421 with respect to Class V injection wells (Consent Decree, ¶3). This proposal is intended to fulfill EPA's initial obligation under the consent decree.

II. Proposed Agency Determination on the Adequacy of Current Regulations

When EPA promulgated the UIC regulations in 1980, little was known about the Class V injection well universe, and EPA anticipated that requirements similar to the very specific requirements applicable to Class I, II, and III would eventually be promulgated. Therefore, in § 144.24 the Agency authorized Class V injection wells by rule ''until further requirements under future regulations become applicable.''

Several factors had to be considered in deciding whether such ''further requirements'' are in fact necessary. Important among these factors is the way in which EPA and the States have been able to use current authorities to control Class V wells and the concurrent development of State ground water protection programs.

A. Implementation of Current Requirements

Since the mid 1980's, EPA and State UIC programs have been actively implementing existing requirements for Class V wells, including the endangerment prohibition in § 144.12, in order to protect USDWs. For example, State UIC programs and EPA directly implemented programs have used current authorities to require owners or operators of Class V wells deemed to have the potential to endanger USDWs to obtain permits so that the wells could be subject to additional requirements. During fiscal years 1991 through 1994, EPA and States issued more than 4,000 permits for existing and new Class V wells.

Additionally, both States and EPA have been actively identifying Class V injection well violations and undertaking enforcement actions to ensure compliance with the endangerment prohibition. For example, during fiscal years 1991 through 1994, EPA and the States conducted more than 20,000 inspections of Class V wells. These inspections led to the discovery of more than 8,000 Class V injection well violations. EPA and States responded to these violations with more than 4,500 enforcement actions against owners and operators of endangering Class V injection wells. In some of these enforcement actions, EPA has taken the position that industrial waste disposal wells used to inject fluids exceeding the MCL were in violation of § 144.12. In one such action, EPA issued a general Administrative Order on Consent to 10 major petroleum marketing companies. As a result of the order, penalties totaling more than $830,000 were collected and over 1,300 endangering Class V wells were closed.

States and EPA have also required other endangering Class V wells to close in order to protect USDWs. For example, during fiscal years 1991 through 1994, EPA and States reported that more than 2,500 endangering Class V wells were closed.

B. State Ground Water Protection Programs

In addition to their efforts in implementing the UIC program, States have been actively developing more comprehensive ground water protection programs. These State ground water protection efforts are placing greater emphasis on prevention of contamination and not just remediating or controlling specific sources of contamination. Such efforts help to control the threats associated with several categories of Class V wells.

Two notable examples of general ground water protection programs being implemented by the States include Comprehensive State Ground Water Protection Programs (CSGWPPs) and the Wellhead Protection Program (WHPP). Under a new EPA-State initiative, many States are developing CSGWPPs which provide States the flexibility to set priorities and focus resources on protecting USDWs from potential sources of contamination, including Class V wells. Eleven States and two tribes are currently very active in developing CSGWPP programs, while most States have taken the initial steps toward their development.

Under SDWA section 1428, each State must prepare and submit a WHPP to protect ground water that supplies wells

and well fields that support public drinking water systems. The programs are implemented primarily at the State level, with municipalities implementing programs that reflect State requirements or incentives. Under a WHPP, a State or locality delineates the wellhead protection area; identifies sources of contamination in the wellhead protection area; and develops management approaches. WHPP are a means to identify Class V wells within wellhead protection areas and can serve as a mechanism to institute pollution prevention measures, best management practices, or well closures. The Program also can be used to set priorities among permits and enforcement actions, and provide guidance and outreach materials to owners or operators of potential contamination sources. As of late 1992, approximately 20 States and territories had received EPA approval of their WHPP. By mid-1995, approximately three-quarters of the States and territories—40 in all—had approved Programs.

The State of Massachusetts is an example of how current UIC authorities in the context of their ground water protection efforts can be used to address Class V wells. The Division of Water Supply within the Massachusetts Department of Environmental Protection (MDEP) has operated the UIC program in the State since 1989 with a limited UIC staff. In order to address the risks of Class V injection wells, Massachusetts has undertaken both outreach efforts to industry and coordination with municipal officials regarding key elements of its ground water protection strategy. These efforts have been further supported with an inspection and enforcement program targeting high priority violators.

For example, in 1991, MDEP worked with building code officials and law makers to revise the State's Plumbing Code. The code now prohibits auto service stations, vehicle maintenance facilities and other facilities which generate liquid hazardous waste from maintaining floor drains which discharge to the ground. These regulated facilities must now either connect their floor drain to a holding tank or a municipal sewer, or seal their floor drain—a major step in the protection of ground water drinking supplies.

In addition, MDEP is using its wellhead protection regulations to impose certain zoning and non-zoning land use controls to protect new municipal water wells. In particular, the regulations state that a town seeking approval to construct a new well must prohibit the connection of floor drains to subsurface disposal systems in industrial and commercial process areas or hazardous material/waste storage areas within well head protection areas.

Other States have shown a great deal in interest in the development of EPA's proposed Class V management strategy and have expressed a commitment to work with EPA in achieving appropriate control of Class V wells using State solutions. This commitment will be finalized in EPA/State management agreements and through Regional/State enforcement agreements.

C. Assessment of the Need for Additional Class V Regulations

In light of the considerations described above, the Agency has analyzed the need for additional federal regulations for each well category described in section I.A.1 of this preamble.

The Agency used two criteria in evaluating the different categories of Class V wells to determine whether any category warranted additional regulation: The potential to endanger USDWs and the anticipated effectiveness of additional federal regulation under the UIC program in preventing endangerment to USDWs.

For wells with a low or no potential to contaminate USDWs based on the quality of injected fluids, the Agency considers that existing regulations provide sufficient authorities to handle the few cases where mismanagement of one of these wells could create an endangerment situation.

To assess the need for additional regulation under the UIC program for the other wells, EPA was guided by the following principles.

(1) Additional Federal UIC regulations are not necessary where adequate State or local regulations are already in place.

(2) Additional Federal UIC regulations are not necessary where the Class V wells are not the principal source of endangerment from a widespread environmental problem.

(3) Additional Federal UIC regulations are not necessary where endangerments are localized problems, e.g., wells which are found only in one or two counties in one or two States. For these wells EPA will work with the States if necessary to bring about better controls.

(4) Additional Federal UIC regulations are not necessary where other federal programs address the endangerment caused by certain Class V wells.

Applying these principles, the Agency decided to address the risk posed by the 10 Class V well categories listed in the proposed regulation as follows:

1. Beneficial Use Wells

''Beneficial use'' wells include a variety of well types used either to improve the quality or flow of aquifers or to provide some other benefit, such as salt water intrusion prevention or subsidence control. The Agency recognizes that, as a group, beneficial use wells are diverse and have a varying potential to endanger USDWs. The 1987 Report to Congress concluded that the USDW contamination potential of these wells ranges from low to high, depending on the particular type of well.

Salt water intrusion barrier wells have a low potential to contaminate USDWs because they generally inject fluids of equivalent or better quality than the fluids that naturally exist in the injection zone. Based on typical injectate characteristics and the possibilities for dilution, injection from these wells does not occur in sufficient volumes to increase contaminant concentrations in ground water (Report to Congress, p. 4–334).

Subsidence control wells, used to control the sudden sinking of the earth's surface resulting from excessive ground water withdrawal, also have a low potential to endanger USDWs. These wells typically inject fluids of high quality, and typical well construction, operation, and maintenance would not allow fluid injection or migration into unintended zones (Report to Congress, p. 4–342).

The USDW contamination potential of most aquifer recharge wells also is low, because injection fluids are usually of equal or better quality than receiving fluids and because typical well construction, operation, and maintenance would not allow contamination of unintended zones (Report to Congress, p. 4–324). However, some aquifer recharge wells may pose a moderate to high threat of USDW contamination, because the quality of the fluid injected may be poor in some cases and because some aquifer recharge wells inventoried by EPA do not appear to be properly designed, constructed, and operated. For example, in Texas, many recharge wells are operated by farmers as dual purpose irrigation supply/injection wells to drain the land and recharge underlying aquifers; water injected into these wells may contain nitrates, phosphorus, pesticides, herbicides, pathogens, metals, and total dissolved solids. The Agency believes that, in general, recharge wells have impacts similar to those of agricultural drainage wells and the reasons for not proposing additional regulations for these types of wells are

similar to those described under ''Drainage Wells'' below. In Florida, ''connector'' wells, specifically designed to allow communication between the surficial perched aquifer and the deeper supply aquifer, often emplace fluids that greatly exceed primary drinking water standards for gross alpha radiation (in 10–20 percent of these wells). However, this is an example of a practice which is so localized that EPA believes that a more effective approach than Federal regulations is to work with and support Florida's efforts to address these wells, and to take appropriate Federal enforcement actions where necessary.

Another type of beneficial use well that could have a high potential to contaminate USDWs if not properly controlled is subsurface environmental remediation wells. These wells are designed to improve an aquifer's quality by extracting and treating contaminated ground water and then injecting the treated effluent. While the treated injectate should be of higher quality than the receiving aquifer, the injection must be controlled closely to make sure that high concentrations of contaminants are not released and that it does not exacerbate the ground water contamination that is being cleaned up. These remediation wells operate as part of facility specific clean-up plans, which are approved and overseen by federal and State officials. EPA believes, therefore, that additional federal regulations under the UIC program are not needed to control potential problems associated with these wells because such regulations would simply duplicate existing controls. EPA believes that remediation actions are already adequately controlled as part of RCRA, CERCLA, or State remediation programs.

2. Fluid Return Wells

''Fluid return'' wells are used to inject spent fluids associated with the production of geothermal energy for space heating or electric power, the operation of a heat pump, the extraction of minerals, or aquaculture. The 1987 Report to Congress on Class V wells ranked the contamination potential of fluid return wells as moderate to low.

Both direct heat return wells and electric power wells were assessed by the Report to Congress as having a moderate contamination potential (Report to Congress, p. 4–106). Reasons given for this ranking include the fact that injected geothermal fluids typically have at least one constituent exceeding water quality standards (e.g., arsenic, chromium, and mercury), and injection occurs in great enough volumes to potentially affect ground water quality. The excessive temperatures of the injected fluids also may pose a concern. However, these wells are believed to pose an overall moderate contamination potential because typical well construction, operation, and maintenance is not expected to allow fluid injection into unintended ground water zones. The wells are typically constructed so that the injection zone is a geothermal reservoir, below all USDWs.

The vast majority of the geothermal fluid return wells are located in California and Nevada. Both States already require permits for the drilling and operation of these wells. In California, the Division of Oil and Gas and Geothermal Energy Resources oversees this permitting, and among other conditions, requires monthly reports on injection volumes and rates. In Nevada, geothermal wells are regulated by the Division of Environmental Protection, and existing permit requirements cover construction, operation, and closure of these wells.

Overall, the Agency believes that the State permit programs currently in place are sufficiently stringent to protect USDWs from contamination from geothermal fluid return wells, and are sufficient to prevent exceedences of the National Primary Drinking Water Standards. Furthermore, EPA believes that because many of these well types are concentrated in just a few western States, creating a rigorous national regulatory system would provide little additional benefits. If any wells pose specific problems that are not being adequately addressed by the States, EPA can use the prohibition of fluid movement standard in 40 CFR 144.12 or can require them to be permitted under 40 CFR 144.25 to prevent the endangerment of USDWs.

According to the Report to Congress, heat pump/air conditioning return flow wells pose a low potential to contaminate USDWs, even though they typically inject into or above USDWs (Report to Congress, p. 4–117). Because these wells generally dispose of return supply water, which has only been thermally altered, injectates are usually the same quality as fluids within any USDW in connection with the injection zone. Because of the lack of associated serious threats and the fact that 16 States already have established permit programs for these wells, EPA believes additional federal standards are unnecessary at this time. If EPA finds a particular well is endangering USDWs, existing authorities under 40 CFR 144.12 or 144.25 will be used to remedy the problem.

The Report to Congress concluded that wells used to inject spent brine after the extraction of minerals (halogens or salts) have a low potential to contaminate USDWs (Report to Congress, p. 4–236) and are found in only seven States. Typically, these wells are adequately constructed with multiple layers of protection which isolate the injected fluids from overlying USDWs and inject into deep confined formations. Therefore, even though the concentrations of some contaminants in the injectate may exceed drinking water standards, there is little potential for the contaminants to migrate into USDWs.

Based on these factors, EPA believes that additional federal UIC regulations for these wells are unnecessary because these wells are most appropriately managed through existing State and local authorities who are best equipped to tailor individualized design and operational requirements to the hydrogeologic conditions found in each of these seven States in order to protect USDWs.

Aquaculture return flow wells, which are used for disposal of liquid and semi-solid wastes associated with aquaculture, have a moderate potential to contaminate USDWs according to the Report to Congress (Report to Congress, p. 4–136). All injection from these wells occurs adjacent to the ocean. Operational monitoring of these wells is minimal. However, it is known that the injectate typically contains nitrates, nitrites, ammonia, BOD, and orthophosphate, often in concentrations exceeding drinking water standards. Injectate volumes are also extremely large (exceeding 10,000 acre-feet). Therefore, aquaculture return flow wells have the potential to influence ground water quality in the vicinity of the point of injection. The potential for serious degradation of ground water quality is mitigated, however, because the basal ground water flow in coastal Hawaii is usually seaward and the flow of contaminants will likely be away from fresher water inland (i.e., suitable drinking water). In addition, all aquaculture return flow wells are presently regulated under a permit program administered by the Hawaii Department of Health that is adequate to prevent the endangerment of USDWs. For these reasons, EPA believes that additional federal UIC regulation for this type of Class V well is unnecessary at this time.

3. Sewage Treatment Effluent Wells

Data in the Report to Congress suggest that sewage treatment effluent wells have a moderate potential (ranging from high to low) to contaminate USDWs

(Report to Congress, p. 4–185). Some sewage treatment effluent wells are used to inject clarified effluent that has undergone secondary or tertiary treatment. For example, a few shallow wells in Florida and Hawaii inject effluent that has undergone tertiary treatment, and there are 10 wells at a U.S. Forest Service ski lodge on Mount Hood, Oregon, that inject effluent that has undergone secondary treatment. The Agency believes the risk of these injection practices is low because the injectate is of high quality.

In some States, sewage treatment effluent that has undergone only primary treatment creates a higher potential to contaminate USDWs. Because the majority of these sewage treatment effluent wells of concern are being addressed at the State level (Florida and Hawaii have 80 percent of them), EPA does not believe that additional federal UIC regulations are warranted at this time. Any problems with these wells in Florida and Hawaii do not stem from inadequate regulations, but rather can be overcome through effective enforcement and more active implementation of existing regulations and authorities as is presently ongoing in Hawaii.

As a result, the Agency proposes to control any wells not being adequately addressed by specific State programs through the application of the no fluid movement standard in 40 CFR 144.12 and, if necessary, calling individual wells in for a permit under 40 CFR 144.25.

4. Cesspools

Cesspools are Class V wells which receive untreated sanitary waste and allow the waste to percolate directly into the subsurface. EPA believes cesspools have a high potential to contaminate USDWs. According to the Report to Congress, sanitary waste released in cesspools frequently exceeds the MCLs for nitrates, total suspended solids, and coliform bacteria (Report to Congress, p. 4–151). Other constituents of concern can include phosphates, chlorides, grease, viruses, and chemicals used to clean cesspools such as trichloroethane and methylene chloride. Numerous States, including Arizona, California, Hawaii, Illinois, Indiana, New York, Ohio, and Oregon, have reported degradation of USDWs from such cesspools. As opposed to properly managed septic systems, cesspools provide no treatment except for some settling of the solids.

Based on these concerns, new cesspools are currently banned in all States, with the exception of Hawaii, and therefore there is no need for a federal ban. Where State bans presently exist, States are phasing out existing cesspools over a time period negotiated by State and local governments and acceptable to EPA. However, since cesspools are very likely to be in violation of the non-endangerment requirements of § 144.12, EPA will continue to use its enforcement authorities to supplement State bans in direct implementation States.

5. Septic Systems

Under the UIC program, EPA regulates septic systems which have the ′capacity to serve 20 people or more but does not regulate smaller, single family systems. EPA believes that when properly spaced, sited, designed, constructed, and maintained all septic systems, regardless of their capacity, should not endanger USDW. However, the Report to Congress deemed septic systems as ''high risk''. There are two important reasons why the Report to Congress seems to disagree with the Agency's view on the risks posed by septic systems. First, the Report to Congress considered not only septic systems which receive solely sanitary waste, but also systems which receive industrial and commercial wastes in addition to, or instead of, sanitary waste. EPA does not consider septic systems which receive industrial or commercial waste to be properly classified as ''septic systems''. Rather, EPA proposes to classify these high risk wells as ''industrial waste discharge wells'' and will manage such wells as discussed in the appropriate section below.

Second, the conclusions in the Report to Congress regarding the risks posed by septic systems were based, in part, on single-family septic systems because local records frequently were not sufficiently detailed to distinguish single-family systems from larger units. EPA is aware that improperly spaced and sited single-family septic systems can endanger USDWs, however, such systems are not included under the purview of the UIC program.[2] Once these single-family systems, and misused systems used for the disposal of industrial or commercial waste (which are defined as ''industrial waste discharge wells'' under today's proposal), are excluded from the definition of ''septic system(s)'', EPA does not believe that the remaining systems pose a significant national problem.

Therefore, EPA does not believe that additional federal UIC regulations are necessary to control the threat posed by septic systems. All 50 States allow septic systems and recognize septic systems as a critical element of sanitary waste disposal. Most States already have standards governing the siting, spacing, construction and operation of septic systems. These standards have generally been tailored to reflect local hydrogeologic conditions. In addition, as discussed in the Report to Congress, the major cause of ground water contamination from septic systems is improper spacing; that is, the construction of too many systems too close together. This problem often occurs in areas of rapid growth and development, where public sewers do not exist. In these instances, EPA believes that land-use planning measures, which are available principally at the local level, are the only efficient approach to protecting the environment.

The Agency did consider the option of proposing specific conditions of authorization by rule for large capacity septic systems. However, to effectively protect USDWs from the risks posed by septic systems, proper siting and design standards must be tailored to local hydrogeologic conditions. EPA believes that the States and local authorities are in the best position to tailor these standards. Therefore, in order to avoid interfering with existing State and local programs, conditions of rule authorization for septic systems at the national level would have to be so general that they may not result in any added protection to USDWs while creating an additional administrative burden on States. For these reasons, EPA is not proposing additional regulations for septic systems and will instead rely on its Class V Management Strategy to minimize the threat posed by these wells.

6. Experimental Technology Wells

The Report to Congress ranked the USDW contamination potential of experimental technology wells as moderate to low (Report to Congress, p. 4–355). The Report identified 225 experimental technology wells in 17 States, over half of which were inactive underground coal gasification, in-situ oil shale retorting, and improperly classified in-situ uranium solution mining wells in Wyoming. At present, EPA is unaware of any operating experimental technology wells and cannot realistically determine what construction and operational processes might be involved in future subsurface experiments.

Therefore, EPA has decided not to propose additional stringent

[2] See 40 CFR 144.2(g)(2)(ii) and House of Representatives Report No. 93–1185.

requirements for Class V experimental technology wells. EPA believes that continuing to rule authorize experimental technology wells will provide adequate protection of USDWs. Under the current 40 CFR 144.26(e)(3), the owner or operator of any new experimental technology well, in States with EPA administered programs, must submit detailed inventory information prior to starting injection. This submittal would alert the EPA UIC program about the proposed injection activities and give the Director the opportunity to request additional information under 40 CFR 144.27 and/or require a permit under 40 CFR 144.25 if necessary to protect USDWs.

7. Drainage Wells

Drainage wells consist of a variety of wells used to drain surface and subsurface fluids. According to the 1987 Report to Congress, these wells range from low to high in contamination potential, depending on the particular type of drainage and well.

The most common types of drainage wells include agricultural drainage wells that receive irrigation tailwaters or stormwater; certain stormwater runoff wells that do not receive uncontrolled, contaminated runoff (i.e., chemical spills or stormwater runoff that has not been adequately segregated from chemical spills); ''special'' drainage wells; and improved sinkholes.

Data collected for the Report to Congress indicate that agricultural drainage wells have a high potential to contaminate USDWs because they may inject high concentrations of several contaminants, including sediment, nutrients, ions (including chloride and sulfate), pesticides and other organic compounds, metals (including arsenic, chromium, lead, copper, selenium, and mercury), and pathogens (Report to Congress, p. 4–27).

Although the Agency acknowledges these potential problems associated with agricultural drainage wells, EPA does not believe that additional Federal UIC regulations are necessary or appropriate for these wells. As with septic systems, EPA believes that additional Federal UIC regulations for agricultural drainage wells would be unlikely to prove effective in providing additional protection for USDWs. Agricultural drainage wells are a very small part of the overall impact of farming on ground water. Most ground water contamination problems attributed to these wells are more often the result of common agricultural practices such as fertilizer and pesticide application and land use practices, which are outside the scope of the UIC program. Therefore, the Agency believes that these wells are most appropriately managed at the State and local level where the overall risks associated with general agriculture practices can be addressed in a holistic fashion.

Therefore, under today's proposal, the Agency would continue to rule authorize agricultural drainage wells, while seeking to resolve the issues associated with nitrate and pesticide contamination in a broader manner. While agricultural drainage wells are numerous, they appear to be concentrated in Florida, Idaho, and Iowa. Problems in these localized areas can be addressed by specific State and local programs, such as the CSGWPPs and the Pesticide State Management Plans. EPA also has convened a panel of experts to evaluate and develop BMP guidelines to help ensure that agricultural drainage wells do not endanger USDWs.[3] As envisioned by EPA and other members of this panel (including the U.S. Department of Agriculture, State agencies, and universities), EPA can best achieve the goal of protecting USDWs from contamination associated with agricultural drainage wells by informing State agencies as to the available BMPs and then allowing regional governmental or regulatory entities to select the techniques best suited to local conditions. In the meantime, EPA would work with existing State and local programs to provide compliance assistance to the owners and operators of these wells. If necessary to protect USDWs, EPA could supplement these efforts by enforcing 40 CFR 144.12 and requiring owners or operators of individual wells to submit information and, if necessary, obtain permits under 40 CFR 144.25.

EPA believes that not proposing additional federal UIC regulations for agricultural drainage wells is further supported by the ongoing development and implementation of other programs designed to address agricultural contamination problems. For example, agriculture-related activities to reduce pollution receive the bulk of EPA's grant funding in the Nonpoint Source program. State funded activities to reduce agricultural contamination (e.g., nitrates) of water resources include support for technical assistance, educational programs, enforcement mechanisms, and assistance for BMP demonstration projects. Similarly, region-specific programs, such as the Chesapeake Bay Program, may reduce the need for UIC regulation of agricultural drainage wells. In 1992 alone, the Chesapeake Bay Program spent 54.2 million dollars on the installation of agricultural BMPs to reduce agricultural runoff contaminating the Bay. This funding has provided for planning, designing, and installing nutrient and erosion controls, as well as integrated pest management projects intended to reduce the quantities of pesticides applied to crop lands. These efforts help reduce the amount of fertilizers, manure, and pesticides potentially migrating through agricultural drainage wells into USDWs (Managing Nonpoint Source Pollution, USEPA Office of Water, EPA–506/9–90, January 1992). Section VII of this preamble provides further discussion of the relationship between today's proposal and other EPA programs.

Stormwater drainage wells were ranked by the Report to Congress as having a moderate potential to contaminate USDWs (Report to Congress, p. 4–41). This assessment considered the fact that urban storm water runoff can acquire contaminant loads from streets, roofs, landscaped areas, industrial areas and construction sites consisting of herbicides, pesticides, fertilizers, deicing salts, gasoline, grease, oil, tar and paving residues, rubber particulates, and many other constituents. In the Nationwide Urban Runoff Program (NURP), heavy metals were found to be the most prevalent priority pollutants in urban runoff. Most constituents released into stormwater drainage wells, however, usually are not present in concentrations that exceed drinking water standards, according to the Report to Congress. Moreover, contamination studies to date have not shown that area-wide degradation of ground water quality has resulted from these drainage wells.

EPA believes that the most significant threats posed by storm water drainage wells occur when the wells are located near loading docks, storage, and process areas where chemical spills may occur. EPA maintains that if storm water drainage wells are separated from these areas by a physical barrier (e.g., berm, dike, ditch, etc.), then these wells do not appear to pose a high potential to contaminate USDWs and do not warrant additional UIC regulation. If however, no physical barriers are in place that can adequately contain a spill, EPA proposes to classify such wells as Class V industrial waste discharge wells, and subject them to the same management approach as other industrial wells discussed below.

[3] See ''Expert Panel on Water Quality Impacts of Agricultural Drainage Practices, September 24–25, 1991 Meeting Summary,'' Underground Injection Control Branch, U.S. Environmental Protection Agency, September 28, 1992.

A variety of flow diversion structures and/or spill containment measures can be used to adequately segregate process areas, loading docks, and storage tank areas from stormwater drainage wells. Flow diversion structures divert stormwater flow away from or around drainage wells and/or potential spill areas. These can include gutters, sewers, channels, diversion dikes, or other structures. Effective diversion structures are typically constructed with a positive grade, although the grades are not so steep as to cause erosion from water movement. The conveyance is sized to handle the amount of water it will receive and is routinely inspected and cleared of debris.

Spill containment structures include dikes, curbs, catch basins, and other structures capable of containing spills, leaks, or other releases. Effective containment structures are sized to handle both rainfall and possible releases and spills, and are regularly inspected and maintained to insure the integrity of the system. Further information about these and other systems that are believed to provide adequate segregation from process areas, loading docks, and storage tank areas, for the purpose of qualifying as a stormwater drainage well under today's proposal, may be obtained in Storm Water Management for Industrial Activities; Developing Pollution Prevention Plans and Best Management Practices (EPA 832–R–92–006; September 1992).

Special drainage wells, which include swimming pool water drainage wells and landslide control drainage wells, were characterized as having a moderate to low contamination potential in the Report to Congress (Report to Congress, p. 4–68). All except one of the 1,385 swimming pool drainage wells inventoried by EPA for the Report are located in Florida, although the Agency is aware that such wells also exist in other States. Swimming pool drainage fluid may include calcium hypochlorite, chlorine, bromine, iodine, fungicides, and other contaminants. Some of the free chlorine in the fluid may degrade into trichloromethane. Although the drainage fluid sometimes has concentrations of constituents in excess of the MCLs, the injectate may be of equal or better quality than the fluids within any USDW in connection with the injection zone. Moreover, according to the Report to Congress, injection from these wells is unlikely to migrate into unintended zones (considering typical well construction, operation, and maintenance) or degrade the quality of receiving aquifers. Accordingly, EPA believes that enforcement of 40 CFR 144.12, requirements to submit information, and requirements to obtain a permit in certain situations when found to be necessary, under 40 CFR 144.25, would be a more appropriate regulatory approach than stringent permit requirements under the federal UIC program. Moreover, the Florida Department of Environmental Regulation already requires permits for the construction, plugging, and abandonment of swimming pool drainage wells and implements substantive requirements to protect USDWs.

All of the landslide control drainage wells inventoried by the Agency for the Report to Congress are located in Montana. These wells inject ground water from the shallow subsurface to deeper zones and are likely to have a low contamination potential due to their use of water from relatively uncontaminated shallow aquifers (Report to Congress, p. 4–68). The primary threat from these wells would arise from accidental releases of chemicals at the surface that could immediately transfer a large amount of contaminants to an aquifer. However, because these wells are already permitted by the State of Montana, and the probability of a chemical spill in the immediate vicinity of landslide control well appears small, EPA believes that additional federal regulation is not warranted.

A final type of drainage well includes improved sinkholes, or natural surface depressions that have been altered in order to direct fluids into the hole opening. These wells are constructed in karst topographic areas and are used to dispose of stormwater runoff in low areas along highways. Based on the analysis in the Report to Congress, improved sinkholes pose a high to moderate potential to contaminate USDWs (Report to Congress, p. 4–53). Major factors that contributed to this ranking included: (1) These wells typically inject into or above USDWs, (2) injectates often have constituent concentrations exceeding drinking water standards, and (3) runoff fluids, which may include lead, petroleum products, pesticides, fertilizers, wastes from wild and domestic animals and birds, are injected through and into channeled and fractured limestone or dolomite, limiting filtration or other attenuative processes.

To address these risks, EPA will classify improved sinkholes on the basis of how they are used as opposed to how they are designed. For example, when used to inject raw sewage these wells would be cesspools, and thus should be banned by current State regulation. EPA will be working with State UIC authorities to make sure that such uses of Class V wells are, in fact, prohibited. Similarly, use of these wells to inject industrial waste or stormwater runoff from process areas, loading docks, or storage areas would cause them to be classified as industrial wells. Therefore, today's proposal would in effect limit the classification of improved sinkholes as drainage wells to those used for stormwater emplacement (other than from process areas, loading docks, or storage areas), and the potential for these wells to contaminate USDWs would be similar to that of other stormwater drainage wells. On this basis, the Agency is proposing to continue to rule authorize these wells and continue to utilize existing regulatory authority (e.g., 40 CFR 144.12, 144.25, etc.) to protect USDWs.

8. Mine Backfill Wells

Mine backfill wells are used to place hydraulic (water) or pneumatic (air) slurries of sand, gravel, cement, mill tailings/refuse, or fly ash into underground mines. Mine backfill wells serve a variety of purposes ranging from subsidence prevention to control of underground fires. Data collected for the Report to Congress indicate that, in general, mine backfill wells have a moderate potential to contaminate USDWs (Report to Congress, p. 4–199). This assessment considered the fact that injectates consist of slurries that have the potential to react with acid mine water to mobilize potential ground water contaminants. Mill tailings and fly ash in the slurries also may cause detrimental interactions. Although the injectate may contain some contaminants, aquifers interconnected with these wells are generally of moderate to poor quality already, and the introduction of the injectate may not be considered degradation. Short-term use wells (mine fire control), in particular, pose little threat to USDWs. Moreover, most mine backfill/mine fire control wells are currently regulated under State water quality or mining programs.

An independent assessment of Class V well injection of coal mining waste into underground mines in West Virginia[4] provides additional evidence that mine backfill wells do not pose a threat to ground water. Prior to the start of this research in 1985, the West

[4] ''An Assessment of Class V Well Injection of Coal Mining Waste into Underground Mines in West Virginia,'' prepared by Diane M. Smith, Keystone Environmental Resources, Inc. (Monroeville, PA) and Henry W. Rauch, West Virginia University, Department of Geology and Geography (Morgantown, WV).

Virginia Department of Natural Resources and EPA determined that the injection of coal slurry and mine drainage precipitate sludge into underground coal mines was the most common Class V well injection activity in the State. Slurry or sludge injection to underground mines was found to be practiced by 46 companies having 65 injection projects at 60 mines across the State. Overall, slurry injection to underground coal mines was found usually to improve the quality of water that accumulates in the mines, commonly increasing pH and alkalinity levels as well as causing minor changes in trace element concentrations. Slurry injection, however, did result in increased sulfate levels in mine water. Sludge injection to underground mines was found to affect mine water quality in variable ways. In general, sludge injection appeared to improve water quality in highly alkaline mine waters but cause some degradation in acidic mine waters.

Based on this information, additional federal regulation of these wells under the UIC program does not appear warranted to protect USDWs. The Agency recognizes that some mine backfill wells may adversely affect ground water quality, especially when slurries or sludges are injected into mines that accumulate acid mine water. However, the generally poor quality of ground water that naturally exists in and around mines and the controls that are already in place under State water or mining programs indicate that mine backfill wells can generally continue to be rule authorized under the federal UIC program without endangering USDWs. EPA will continue to control these wells by enforcing 40 CFR 144.12, requiring owners or operators of particularly troublesome wells to obtain a permit pursuant to 40 CFR 144.25, and, in EPA administered programs, requiring the submittal of information under 40 CFR 144.27 on a case-by-case basis as needed to protect USDWs.

9. In Situ and Solution Mining Wells

In situ fossil fuel recovery wells are used to inject water, air, oxygen, solvents, combustibles, or explosives into underground coal or oil shale beds with the purpose of liberating fossil fuels. According to the Report to Congress, these wells pose a moderate potential to contaminate USDWs (Report to Congress, p. 4–229). The main concern for this well type is the potential impact of explosives and combustion products on ground water quality, which may include polynuclear aromatics, cyanides, nitrites, and phenols. No additional UIC regulations for these wells are needed at this time, however, because there currently are no such wells known to be operating in the United States.

Owners or operators of solution mining wells use injection and recovery techniques to bring minerals from underground deposits to the surface. Based on the data in the Report to Congress, EPA believes that these wells have a low potential to contaminate USDWs (Report to Congress, p. 4–209). This assessment considers the fact that most solution mining wells inject below USDWs (though not below the lowermost USDW) with very little potential for migration of fluids into USDWs. Though injectates may be corrosive acids with pHs exceeding drinking water standards and injectate volumes tend to be large, losses of fluid from the workings should be minimal. Since the construction and operational aspects of solution mining are simple, the potential for a malfunction leading to migration is minimal. Moreover, most of these wells are located in semi-remote areas far away from population centers. Most solution mining occurs in the desert Southwest whose alluvial aquifers generally have low water quality and USDWs are sparse. New Mexico, Wyoming and Arizona, three States in which the majority of these wells are located, have already established permit programs for solution mining wells. For all of these reasons, EPA does not believe that additional federal regulation of these wells is necessary to protect USDWs.

10. Industrial Waste Discharge Wells

The most difficult decision for EPA concerning this proposal lay with the appropriate management strategy for the remaining Class V wells—the industrial waste discharge wells. These Class V wells, which are used to inject industrial and commercial wastes, present the greatest danger to USDWs.

In the process of developing this proposal, EPA carefully considered an option of proposing additional regulatory requirements for these wells. Specifically, EPA considered using a traditional approach of requiring owners and operators of Class V industrial waste discharge wells to apply for a permit or close the wells in accordance with closure requirements specified in the regulation. EPA, however, believes that its approach to managing Class V industrial waste discharge wells has to be different because of the special problems posed by these wells. This difference is characterized by three factors: The diversity in the types of fluids being injected, the large number of facilities to be regulated, and the nature of the regulated community.

The diversity in the types of fluids being injected makes it difficult to establish one set of national minimum requirements. On one hand, EPA knows of numerous cases where industrial wells have caused significant ground water contamination. One survey, by EPA, in 1991 identified 100 Class V injection well contamination cases. (Drinking Water Contamination by Shallow Injection Wells, U.S. EPA Office of Water, March 1991.) Remediation costs, for the 10 cases for which cost information was available, ranged from tens of thousands to millions of dollars per site. Class V wells have been partially or fully responsible for the contamination of public water supplies in every EPA Region in the country. In EPA Region 10 alone (The States of Idaho, Oregon, Washington and Alaska), at least eight Superfund sites can be either completely or partially attributed to the disposal of industrial or commercial wastes in Class V industrial wells. At one Superfund site in Idaho, over $10 million has been spent on remedial investigation and feasibility studies to clean up contamination associated with past injection practices. At another site in Vancouver, Washington, the disposal of dry cleaning solvents in a septic system resulted in the contamination of a municipal water supply well, forcing the city to switch the approximately 30,000 people serviced by this well to another source of drinking water.

On the other hand, the Agency recognizes that many industrial sources inject wastes that have low concentrations of contaminants and, therefore, are not likely to endanger USDWs. With proper maintenance and management practices, these industrial injection wells may be able to inject fluids without endangering USDWs.

For example, some carwashes dispose of the wash water into a septic tank or dry well. If no motor or undercarriage washing is being performed, in general, such fluids will have low concentrations of contaminants. Laundromat washwater disposed of into a septic system or dry well, where no on site dry cleaning is performed and where no solvents are used for laundering, usually should not differ significantly from household wastewater and should not endanger USDWs.

Equipment washdown water from such industries as poultry and meat processors, seafood processors, and pickling operations are, in general, similar in quality to the sanitary waste from restaurant kitchens, which the

Agency is proposing to define as sanitary waste that can be disposed of in septic systems. As long as the wells accept only equipment washdown water and not process wastes from food processing operations, EPA believes that, in most cases, the injectate would not likely endanger USDWs.

Second, the Agency believes that the sheer size of the regulated community and the lack of facility specific data makes it difficult to consider a traditional approach. In order to examine options for this proposal, the Agency attempted to characterize the segment of the industrial waste discharge well population with a significant potential (based on the characteristics, volume and type of injected fluids) to endanger USDWs (see background document entitled ''Class V Industrial Well Inventory Analysis''). EPA did not include in this analysis the industrial waste discharge wells which it believes are posing a lesser threat to USDWs such as:

(1) Wells used to inject fluids from car washes where no motor or undercarriage washing is performed;

(2) Wells used to inject wastewaters from laundromats where no dry cleaning is performed;

(3) Wells used by food processors for disposal of washdown water from poultry, meat and seafood processing, and pickling operations.

Based on its analysis, the Agency estimates that of the more than one million Class V wells, there are over 117,000 industrial waste disposal wells. These wells are used for the disposal of industrial and commercial wastewaters at automotive-related facilities, print shops, dry cleaners, electronic equipment manufacturers, and photo processing labs.

A third factor is the nature of the regulated community. A large proportion of industrial waste discharge wells are owned by small businesses. For example, 72 percent of all retail motor fuel outlets are owned by small businesses. In reaching today's proposed decision, EPA attempted to minimize the administrative burden on small business without compromising the protection of USDWs. EPA believes that the Class V wells are better managed by State and local officials because many are owned and operated as small local businesses such as ''mom and pop'' gasoline service stations and convenience stores, or corner dry cleaners. These small entrepreneurs could be significantly affected by any additional administrative burden, such as the obligation to apply for a permit. Also, because of the nature of the regulated community, the success of the Class V program for industrial waste discharge wells depends on a high level of voluntary compliance and an effective program implementation at a State or local level of government. Many Class V industrial waste discharge wells are, in fact, misused septic systems. Because local health departments are located in or near communities with these Class V wells, the Agency believes that control of these is best effected at the local level. Implementation of many aspects of the Class V strategy could be conducted by these local entities and results better measured by local officials.

Therefore, because of the large diversity and size of the industrial waste discharge well universe, and the unique nature of the regulated community, EPA believes that additional federal UIC regulations to protect USDWs are inappropriate. EPA believes that the risks posed by these wells are best addressed, using existing authorities, as described below.

III. EPA's Strategy for the Management of Class V Wells

Instead of proposing additional Class V regulations, EPA will work with the States to implement a comprehensive Class V management strategy. The goal of the strategy will be to speed up the closure of potentially endangering Class V wells using current authorities and to promote the use of best management practices to ensure that other Class V wells of concern do not endanger USDWs.

To achieve these goals, EPA will rely on the existing performance-based standard in § 144.12, its other regulatory authorities in subpart C of the UIC rules, and a carefully tailored combination of guidance, education, and outreach. EPA believes that this approach will be more effective than promulgating additional design-based Class V requirements.

Since the Class V rule was developed in the Fall of 1994, EPA has undertaken a number of steps to assure effective consultations with and the active involvement of States. EPA has also employed a number of other approaches to solicit input from States on the scope and appropriateness of the proposed rule. An overall Class V strategy was developed early in 1995, which outlined how the Class V rule, coupled with guidances on implementation and a variety of technical issues, would work to assure that high priority Class V wells are addressed properly and their potential threat to USDWs is reduced or eliminated. A draft of the Strategy for the *Comprehensive Management of Class V Wells* was presented to State UIC program directors at the semi-annual meeting of the Ground Water Protection Council held in Washington, DC, on March 13, 1995.

In a parallel fashion, EPA's efforts to develop a Class V Management Implementation Strategy Guidance to help States put in place comprehensive Class V programs was also used to advise states on the proposed rule. EPA held two consultations with State Class V managers on this guidance in which the particulars of the rule and the schedule for issuance were discussed. The first meeting was held in Memphis, Tennessee, June 20–21, 1995, and attended by 12 States and one Tribal government representative. The second meeting was held in Salt Lake City, Utah, July 11–12, 1995 and attended by 18 States. EPA's proposed approach was generally well received and its inherent flexibilities were viewed favorably by the States. The roster of attendees at these sessions, added to the list of State Class V program managers who could not attend, will serve as the primary target audience for EPA's distribution of this **Federal Register** notice.

A. Technical Assistance

1. Program Management Implementation Guidance

EPA plans to issue a Class V Management Implementation Strategy Guidance to help States and Regions put in place comprehensive Class V programs using current authorities. EPA is in the process of drafting this guidance with input from the States. As mentioned above, EPA has already held two meetings to consult with the States on the development of this guidance.

EPA's goal in this guidance is to help the States put in place programs that will result in:

—Closure of endangering Class V wells such as industrial waste disposal wells and cesspools, particularly in ground-water priority areas (wellhead protection areas, etc.).

—Adequate controls being imposed on other Class V wells with a high potential to contaminate USDWs, if improperly managed.

This guidance will focus on the following areas:

(1) The need to set priorities and focus the State UIC resources on the highest risk Class V wells. To this end, the guidance will offer ideas for prioritization schemes based on the types of fluids being injected and geographic targeting.

The Class V management guidance will specifically target the following types of Class V industrial wells for inspection and follow-up enforcement action:

(a) Disposal wells used by automotive related facilities such as:

—Gas stations
—Automobile repair shops
—Automobile parts supply companies
—Motor vehicle dealers

(b) Disposal wells used by ''light'' industrial facilities such as:

—Dry cleaners
—Photographic processors
—Electroplaters
—Metal fabricators
—Printers

(2) The need to work cooperatively with other States and local authorities to implement the program. The types of facilities regulated under the Class V program are also likely to come under the purview of other regulatory programs particularly at the local level (county sanitarians, fire marshals, zoning boards). The guidance will describe how States can reach out to and educate these entities to enlist their help in implementing the program.

(3) The need to develop partnerships with volunteer organizations and environmental groups to help with outreach to the regulated community.

2. Technical Guidances

To support the Implementation Guidance, EPA is also proposing to issue technical guidances, some directed at the regulated community and some directed at the States.

a. Industrial waste discharge well closure guidance. Since EPA believes that the foremost goal of the Class V management strategy is the closure of endangering Class V wells, EPA will issue a closure guidance. A draft of this guidance should be available for review in late 1995. The guidance will be directed to owners and operators of Class V industrial wells and will be modeled after the closure standards used in EPA's administrative consent order with some major petroleum marketers.

b. Septic system guidance. To support existing State ground water protection programs in their efforts to protect USDWs, EPA will issue a technical assistance guidance which will include recommendations on the installation, operation, and maintenance of large capacity septic systems, such as:

- Proper installation of leachfields or other appropriate fluid distribution systems in a variety of geographic settings.
- Guidelines for system use and maintenance to avoid design capacity exceedences and system failure.
- Inspection techniques for early detection of systems malfunction or failure.
- Hydrogeologic factors to consider in system location to ensure the protection of USDWs.

c. *Agricultural drainage well guidance.* The Agency will issue a technical assistance guidance to help owners/operators of agricultural drainage wells minimize the impact of their facilities on USDWs. The guidance could include such recommendations as:

- Pesticides or fertilizers should not be mixed or stored in the immediate vicinity of a drainage well in a manner that allows spills, runoff, or leachate to enter the well directly.
- To the extent possible, the timing and methods for applying fertilizers should be selected to provide nutrients at rates necessary to achieve realistic crop yields, prevent endangerment of USDWs, and avoid applications to frozen soil and during periods of leaching or runoff.
- To the extent possible, owners or operators should use integrated pest management strategies that apply pesticides only when an economic benefit to the producer will be achieved (i.e., applications based on economic thresholds), and apply pesticides efficiently and at times when runoff and leaching losses are unlikely.
- Agricultural drainage wells should be located away from unsuitable areas, such as locations with excessively drained or highly erodible soils, and areas overlaying fractured bedrock or solution cavities that drain directly into USDWs. Appropriate separation distances should be based on a variety of factors including soil type, hydrogeologic conditions, nutrient and pesticide types and application rates.
- Nutrient and pesticide application equipment should be properly calibrated and operated.

d. Storm water drainage well guidance. As a part of the strategy for the comprehensive management of Class V wells, the Agency will issue a technical assistance guidance on the effective methods of managing storm water injection wells to assure the protection of USDWs. The guidance will provide information about systems that are believed to provide adequate segregation from industrial process or storage areas as well as techniques for minimizing the environmental impacts of injected storm water.

B. Outreach and Education

EPA will work with States, Regions, local government, trade associations and other industry stakeholders to develop and implement a comprehensive communication, education, and outreach program designed to encourage closure of Class V wells which may endanger USDWs and proper management of other non-industrial wells. EPA's first concern is an outreach and education effort directed toward the owners and operators of Class V industrial waste discharge wells.

The materials will be designed to inform the general public and local government authorities as well as operators of Class V wells, about the potential environmental and public health threats posed by these wells. These materials will provide information to operators of Class V facilities about the risks associated with these wells, what can be done to minimize the environmental threats of shallow injection wells, the benefits of closing Class V wells that may endanger USDWs, and where to get appropriate technical assistance.

The outreach effort will be two pronged.

(1) The Agency will develop materials to help States work with local government officials and make them aware of the risks posed by Class V wells to the public water supplies on which their constituents depend. The goal of this effort is to enlist local government help in dealing with Class V wells through the use of local ordinances, zoning and other local solutions.

(2) The Agency will work with specific trade associations through this effort to inform operators of industrial waste discharge wells of the risks posed by these wells and the benefits of closing wells that may endanger USDWs. The Agency will also strive to ensure that facilities which close their Class V wells have the necessary information to manage their wastes in an environmentally safe manner. The Agency will use this effort to promote pollution prevention so that wastes generated by the facilities are cost effectively minimized. The Office of Ground Water and Drinking Water has already produced a set of best management practices targeting certain industrial facilities. These BMPs can be used as a starting point for this effort.

C. Compliance Assurance Initiative

Considering the size of the regulated community, EPA believes that voluntary compliance is essential to the success of its Class V strategy. In cooperation with States, EPA will develop a compliance initiative targeting high risk Class V wells. The initiative will seek voluntary compliance with section 144.12 and other applicable regulation through outreach, education, and technical assistance. EPA is in the process of developing a policy to create special

incentives for small businesses who take the initiative to identify and correct environmental violations by requesting compliance assistance from the Director.

IV. Proposed Minor Amendments to the UIC Regulations in 40 CFR Part 144

Although EPA does not believe that a need currently exists for major changes to its Class V rules, EPA believes that in order to implement its proposed Class V strategy effectively, some minor amendments to the current regulations are necessary. Most of these amendments are intended to clarify the regulatory terminology used for Class V wells and do not impose new requirements on owners or operators of Class V wells. EPA does not solicit, nor will EPA respond to comments related to any unamended language included in the proposed revised sections solely for the purpose of supplying context for the reader.

This section of the preamble describes the proposed amendments to part 144 and the rationale for these changes.

A. Proposed Amendments to Subpart A—General Provisions

1. Section 144.1(g)—Specific Inclusions and Exclusions

EPA believes that a particularly useful technical amendment to the regulations would be the clarification of the definition of septic systems and a better explanation of which systems are and are not included under the purview of the UIC program.

The current regulations are somewhat confusing on the issue of septic systems. For example, while the specific inclusions in § 144.1(g)(1)(iii) include septic tanks or cesspools used to dispose of fluids containing hazardous waste, the list of Class V wells in § 146.5(e)(9) refers to ''septic system wells'' used to dispose of effluent from septic tanks. This has led some operators and States to believe that if the effluent from the septic tank is disposed of through a leachfield the device is no longer a Class V well. Therefore, to clarify the issue, the term ''well'' in sections 144 and 146 would be clarified to specifically include subsurface fluid distribution systems.

The current regulation also make a distinction in the definition and the exclusion sections between septic systems used by single-family homes and non-residential septic systems that receive solely sanitary waste and have the capacity to serve fewer than 20 people. EPA now believes that there is no difference between a single-family residence septic system and a non-residential system serving only a small number of people, as long as the non-residential system receives only sanitary waste. Such a non-residential system could include, for example, crew quarters or guard stations located at industrial facilities.

In this proposal, EPA would define cesspools and septic systems as wells receiving solely sanitary waste to distinguish them from similarly configured devices receiving industrial waste waters which would be considered industrial waste disposal wells. The proposal would also provide a definition for sanitary waste. Because it makes sense to provide the same type of relief to small residential and non-residential users of cesspools and septic systems, and for the sake of simplification, EPA is proposing to *exclude* from regulation all cesspools and septic systems serving fewer than 20 people and to revise § 144.1 accordingly. However, *any* Class V well, including a well that is configured like a small capacity septic system or cesspool, which receives something other than solely sanitary waste, is not considered a septic system or cesspool and is therefore *not excluded* from UIC regulation.

Under today's proposal, EPA would continue to exclude septic systems and cesspools, with the capacity to serve fewer that 20 people, from UIC regulation. However, in developing this proposal, EPA considered replacing the existing septic system/cesspool exclusion in favor of an exclusion that would be based on septic tank size (e.g., tanks under 2000 gallons would not be subject to UIC regulations), flow rate (e.g. systems receiving less than 5,000 gallons/day would not be subject to the UIC regulations), or dwelling size. EPA is requesting comment on the merits of the proposed exclusion and any other alternative exclusion, including those considered but not proposed by EPA, that would appropriately define which septic systems and cesspools are subject to UIC regulation.

2. Section 144.3—Definitions

The proposed regulation would add new definitions for the terms ''cesspool,'' ''drywell,'' ''improved sinkhole,'' ''sanitary waste,'' ''septic system,'' and ''subsurface fluid distribution system.'' The rule also would revise the existing definitions for ''well,'' and ''well injection.''

The definition of ''cesspool'' and ''septic system'' would conform with the new Class V categories explained in section I.A. of the preamble.

An ''improved sinkhole'' would be defined as a type of injection well regulated under the UIC program. Today's proposed definition would codify EPA's interpretation that the intentional use of naturally occurring karst or limestone depressions, for the purpose of disposing waste waters, fits within the statutory definition of underground injection.

''Sanitary waste'' would be defined as both ''domestic sewage and household waste, including any material (e.g., wastewater from clothes-washing machines, toilets, showers, and dishwashers) derived from single and multiple residences, hotels and motels, restaurants, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.'' The definition of sanitary waste in today's proposal is an adaptation of the household waste exclusion established in the RCRA regulations (40 CFR 261.4(b)(1)).

The definition of ''well'' would be revised to clarify that a ''well'' includes improved sinkholes and subsurface fluid distribution systems.

The definition of ''well injection''' would be revised to eliminate a redundancy and simply state that well injection means the subsurface emplacement of fluids through a well.

3. Section 144.6—Classification of Wells

The proposed regulation would revise § 144.6(a) by adding a paragraph (3) to include in Class I radioactive waste disposal wells injecting below all USDWs. Such wells, in fact, are similar to Class I wells in terms of their design, the nature of the fluids that they inject, and their potential to endanger USDWs. In particular, like Class I wells, such radioactive waste injection wells inject below all USDWs and warrant the same level of control.

The Agency believes that all of these wells are located in Texas, which already regulates them as Class I wells. Existing Class V radioactive waste disposal wells, therefore, would not be subject to any additional regulatory requirements. However, the Agency believes that Class I requirements related to permitting, construction, operating, monitoring, reporting, mechanical integrity testing, area of review, and plugging and abandonment are needed to prevent any new radioactive waste disposal wells from endangering USDWs. The Agency, thus, proposes to reclassify wells that inject radioactive waste below the lowermost USDW as Class I wells and subject them to the full set of existing Class I requirements. This approach is administratively much simpler and more straightforward than keeping the wells in the Class V universe and

developing identical requirements under the Class V program.

Section 144.6 (e) would also be revised to include an expanded definition of Class V wells. EPA is proposing to maintain the general existing regulatory definition, i.e. that Class V wells are injection wells not included in Classes I, II, III, or IV. The proposed rule, however, would add significant detail to this definition by including a list of 10 specific categories of wells that are considered Class V wells.

B. Proposed Amendments to Subpart C—Authorization of Underground Injection by Rule

1. Section 144.23—Class IV Wells

A new § 144.23(c) would be added to clearly rule authorize Class IV wells used to inject treated water into the formation from which it came if such injection is approved by EPA or a State as part of a RCRA or CERCLA remediation program. Therefore, these wells would not need a UIC permit to operate. However, the Agency encourages effective communication between State and Federal RCRA, CERCLA, and UIC programs regarding the management of injection wells which are part of an approved ground water remediation project.

2. Section 144.24—Class V Wells

Section 144.24(a) would be amended by revising paragraph (a) to authorize all Class V wells by rule for the life of the well instead of until further requirements become applicable.

This section currently provides at § 144.24(b)(3) that authorization by rule terminates upon proper closure of the well. EPA is mindful of the desire of owners and operators to make sure that they are ''out of the system'' and are no longer subject to the requirements of authorization by rule. One option to accomplish this goal would be to provide the operator with the opportunity to submit a certification that the well has been closed in accordance with the closure guidance which EPA intends to publish along with the promulgation of this rule. This would provide EPA with assurances that the well was properly closed and would establish a date certain upon which authorization by rule would terminate. EPA is, however, concerned with the administrative burden this option might entail. Therefore, EPA is requesting comment on the feasibility and advisability of such an option. EPA would also like commentors to provide alternatives to this option.

3. Section 144.26—Inventory Requirements

Section 144.26(b)(1)(iii) would be revised to track the new categories of Class V wells and drop radioactive waste disposal wells from the list.

V. Proposed Minor Amendments to the UIC Regulations in 40 CFR Part 146

This section of the preamble describes the proposed amendments to part 146 and the rationale for these changes.

A. Proposed Amendments to Subpart A—General Provisions

1. Section 146.3—Definitions

To parallel the proposed amendments at § 144.3, the proposed regulation would add new definitions for the terms ''cesspool,'' ''drywell,'' ''improved sinkhole,'' ''sanitary waste,'' ''septic system,'' and ''subsurface fluid distribution system.'' The rule also would revise the existing definitions for ''well,'' and ''well injection.''

2. Section 146.5—Classification of Injection Wells

Section 146.5 would be amended to make it consistent with § 144.6.

3. Section 146.10—Plugging and Abandoning Class I, II, III, IV and V Wells

The current regulations provide that authorization by rule terminates upon proper closure of Class V wells but do not give any direction of what constitutes proper closure. This section proposes to amend the requirements for plugging and abandonment (i.e., closure) found in 40 CFR 146.10 for Class I, II, and III injection wells by adding a reference to the Class IV closure requirements at § 144.23(b) and reiterating the Class V abandonment requirements at § 144.12(a).

New § 146.10(c) would (1) require the owner or operator of any Class V well to close the well in a manner that prevents the movement of fluids containing any contaminant into USDWs if the presence of this contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons and (2) requires that all material removed from or adjacent to the well during closure (such as sludge, gravel, sand, and possibly soil) be managed in accordance with all applicable Federal, State, and local regulations and requirements (including RCRA requirements). The existing requirements for Classes I, II, and III would not be changed, although they would be renumbered to accommodate the addition of the proposed new Class V requirements. As a result, EPA is not accepting public comment on the requirements for Classes I through III as they appear in today's proposal.

VI. Solicitation of Comments

A. General Solicitation

EPA invites and encourages public participation in this rulemaking. The Agency welcomes any comments on the Strategy for the Management of Class V wells announced in this preamble and on the regulatory changes proposed herein. The Agency will review and evaluate each and every comment received. The Agency asks that comments address any perceived deficiencies in the record of this proposal and that suggested revisions or corrections be supported by appropriate data.

B. Specific Comment Solicitations

For the reasons discussed above, EPA believes its proposed Class V Strategy is the best approach for effectively implementing the requirement of the Safe Drinking Water Act to prevent underground injection from Class V wells which endangers USDWs. The Agency recognizes, however, that the proposed approach is not necessarily the only possible means of accomplishing that goal. Accordingly, we solicit comment on the advisability of adopting other approaches, including ones that might incorporate more and different regulatory requirements. Specifically, we invite comment on the advisability of including the following regulatory amendments:

1. A requirement for notification to EPA or the State before the closure of Class V industrial waste discharge wells or other specific categories of Class V wells.

2. A requirement for notification to EPA or the State before the construction of Class V industrial waste discharge wells or other specific categories of Class V wells.

3. A provision in the regulations expressly creating general permit authority for all or specific categories of Class V wells.

4. Provisions in the regulations expressly requiring owners and operators of Class V industrial waste discharge wells, or other specific categories of Class V wells, to apply for and comply with specific permitting conditions or to close in accordance with specific regulatory requirements.

VII. Regulatory Impact

A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735 (October 4, 1993)), the Agency must determine whether the regulatory action is ''significant'' and, therefore, subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, Local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the right and obligation of recipients thereof: or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive order 12866, it has been determined that this rule is a ''significant regulatory action'' because it meets test (4) listed above. OMB has reviewed this proposal and agrees with this conclusion.

B. Paperwork Reduction Act

This rule places no additional information collection or record-keeping burden on respondents. Therefore, an information collection request has not been prepared and submitted to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

C. Impact on Small Businesses

Under the Regulatory Flexibility Act, an agency is required to prepare an initial regulatory flexibility analysis whenever it is required to publish general notice of any rule, unless the head of the Agency certifies that the rule, if promulgated, will not have significant economic impact on a substantial number of small entities. These regulations require no additional reporting by owners or operators and impose no new substantive requirements or standards. The reclassification of radioactive waste disposal wells has no impact on any existing wells and these wells are typically owned and operated by large mining companies. Therefore, the Administrator certifies that this regulation will not have a significant impact on a substantial number of small entities.

D. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a written statement to accompany rules where the estimated costs to State, local, or tribal governments, or to the private sector, will be $100 million or more in any one year. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of such a rule and that is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly and uniquely affected by the rule.

EPA estimates that the costs to State, local, or tribal governments, or the private sector, from this proposed rule will be far less than $100 million. This proposed rule should have no impact on owners or operators of Class V wells because the proposed rule imposes no new mandatory requirements. EPA has determined that an unfunded mandates statement, therefore, is unnecessary. Moreover, the rule proposed today does not establish any regulatory requirements that might significantly or uniquely affect small governments.

E. Effect on States with Primacy

According to the regulations at 40 CFR 145.32 for non-substantial program revisions, primacy States must assert in a letter from the State's Director or his authorized representative to the Regional Administrator that the State has incorporated the revisions and regulatory language into its current program or that it already meets the requirements. The State must submit this document within 270 days of the effective date of the final rule. The Agency expects that, since the proposed amendments do not impose new mandatory requirements, all States will be able to satisfy the requirements of 40 CFR 145.32 in a letter to the Regional Administrator.

Primacy States are put on notice that program revisions may be necessary pursuant to 40 CFR 145.32 following final promulgation of these proposed amendments. EPA anticipates that such revisions will be non-substantial in nature and that, when submitted, EPA will review them accordingly. EPA is aware that jurisdiction over Class V wells is often split among several agencies in a State. Some States have expressed concern that EPA might require changes in State Agencies' scope of responsibility. This is not the case. EPA's interest in reviewing State submittals will be to ensure that all types of wells covered by the Federal program are subject to the non-endangerment standards of the Federal UIC program and to adequate enforcement authorities whether or not the State chooses to call them Class V wells and regardless of which entity in the State has jurisdiction over the wells.

List of Subjects in 40 CFR Parts 144 and 146

Environmental protection, Ground water pollution control, Shallow disposal wells.

Dated: August 15, 1995.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is proposed to be amended as follows:

PART 144—UNDERGROUND INJECTION CONTROL PROGRAM

1. The authority citation for part 144 continues to read as follows:

Authority: Safe Drinking Water Act, 42 U.S.C. 300f *et seq.*; Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 144.1 is amended by revising paragraphs (g)(1) introductory text, (g)(1)(iii), (g)(1)(iv) and (g)(2)(ii), removing paragraph (g)(2)(iii), redesignating paragraphs (g)(2) (iv) and (v) as (g)(2) (iii) and (iv), and revising newly designated paragraph (g)(2)(iv) to read as follows:

§ 144.1 Purpose and scope of part 144.

* * * * *

(g) * * *

(1) *Specific inclusions.* The following wells are included among those types of injection activities which are covered by the UIC regulations. (This list is not intended to be exclusive but is for clarification only.)

* * * * *

(iii) Any septic system, cesspool, or other well, used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities to dispose of fluids containing hazardous waste.

(iv) Any septic system, cesspool, or other well, used solely for the subsurface emplacement of sanitary waste, having the capacity to serve twenty persons or more per day.

(2) * * *

(ii) Any septic system, cesspool, or other well used solely for the subsurface emplacement of sanitary waste, having

the capacity to serve fewer than 20 persons a day.

* * * * *

(iv) Any dug hole which is not used for the subsurface emplacement of fluids.

* * * * *

3. Section 144.3 is amended by adding new definitions in alphabetical order for ''cesspool,'' ''drywell,'' ''improved sinkhole,'' ''sanitary waste,'' ''septic system,''' and ''subsurface fluid distribution system,''' and by revising the definitions of ''well,''' and ''well injection''' to read as follows:

§ 144.3 Definitions.

* * * * *

Cesspool means a ''drywell'' that receives solely untreated sanitary waste, and which 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.

* * * * *

Improved sinkhole means a naturally occurring karst depression which has been modified by man for the purpose of directing and emplacing fluids into the subsurface.

* * * * *

Sanitary waste means domestic sewage and household waste, including any material (e.g., wastewater from clothes-washing machines, toilets, showers, and dishwashers) derived from single and multiple residences, hotels and motels, restaurants, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

* * * * *

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

* * * * *

Subsurface fluid distribution system means an assemblage of perforated pipes or drain tiles used to distribute fluids below the surface of the ground.

* * * * *

Well means: (1) A bored, drilled, or driven shaft; (2) A dug hole whose depth is greater than the largest surface dimension; (3) An improved sinkhole; or (4) A subsurface fluid distribution system.

Well injection means the subsurface emplacement of fluids through a well.

* * * * *

4. Section 144.6 is amended by adding a new paragraph (a)(3) and revising paragraph (e) to read as follows:

§ 144.6 Classification of wells.

(a) * * *

(3) Radioactive waste disposal wells which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

* * * * *

(e) *Class V.* Injection wells not included in Class I, II, III, or IV. Class V includes, but is not limited to, the following well types:

(1) *Beneficial use wells.* Wells used for aquifer recharge, salt water intrusion barriers, subsidence control, aquifer storage and recovery, or subsurface environmental remediation;

(2) *Fluid return wells.* Wells used to inject:

(i) Spent brines after extraction of minerals;

(ii) Heat pump return fluids; and

(iii) Fluids that have undergone chemical alteration during the production of geothermal energy for heating, aquaculture, or production of electric power into the same formation from which the fluids have been withdrawn;

(3) *Sewage treatment effluent wells.* Wells used to inject effluent from publicly or privately owned treatment works, into formations that are not below the lowermost USDW;

(4) *Cesspools* as defined in § 144.3.

(5) *Septic systems* as defined in § 144.3.

(6) *Experimental technology wells.* Any injection well that is part of an unproven subsurface injection technology;

(7) *Drainage wells.* Wells used to drain surface and subsurface fluids into a subsurface formation, including agricultural drainage and storm water runoff, other than runoff from load dock, storage, and processing areas; Wells injecting runoff from loading dock, storage and processing areas are included under paragraph (e)(10) of this section.

(8) *Mine backfill wells.* Wells used to inject a slurry of water or air with sand, mill tailings or other solids into mined out portions of subsurface mines;

(9) *In-situ and solution mining wells.* Wells used to inject fluids for the purpose of producing minerals or fossil fuels, which are not Class II or III wells;

(10) *Industrial waste discharge wells.* Wells used to inject wastewaters generated by industrial, commercial, and service establishments which are not included in paragraphs (e)(1) through (e)(9) of this section.

5. Section 144.23 is amended adding a new paragraph (c) to read as follows:

§ 144.23 Class IV wells.

* * * * *

(c) Notwithstanding the requirements of paragraphs (a) and (b) of this section, injection wells used to inject contaminated ground water that has been treated and is being injected into the same formation from which it was drawn are authorized by rule for the life of the well if such subsurface emplacement of fluids is approved by EPA, or a State, pursuant to provisions for cleanup of releases under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601–9675, or pursuant to requirements and provisions under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901–6992k.

6. Section 144.24 is amended by revising paragraph (a) to read as follows:

§ 144.24 Class V wells.

(a) Class V wells are authorized by rule for the life of the well if the owner or operator uses the well for the subsurface emplacement of fluids after the date on which a UIC program authorized under the SDWA becomes effective for the first time, and inventories the well pursuant to the requirements of § 144.26.

* * * * *

7. Section 144.26 is amended by revising paragraphs (b)(1)(iii)(A) through (F) and by removing paragraph (b)(1)(iii)(G) to read as follows:

§ 144.26 Inventory requirements.

* * * * *

(b) * * *

(1) * * *

(iii) * * *

(A) Mine backfill wells;

(B) Fluid return wells;

(C) Experimental technology wells;

(D) Sewage treatment effluent wells;

(E) Industrial waste discharge wells; and

(F) Any other Class V wells at the discretion of the Regional Administrator.

* * * * *

PART 146—UNDERGROUND INJECTION CONTROL PROGRAM: CRITERIA AND STANDARDS

8. The authority citation for part 146 continues to read as follows:

Authority: Safe Drinking Water Act, 42 U.S.C. 300f *et seq.*; Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

* * * * *

9. Section 146.3 is amended by adding the following new definitions in

alphabetical order: ''cesspool,'' ''drywell,'' ''improved sinkhole,'' ''sanitary waste,'' ''septic system,'' and ''subsurface fluid distribution system,'' and by revising the definitions of ''well,'' and ''well injection'' to read as follows:

§ 146.3 Definitions.

* * * * *

Cesspool means a ''drywell'' that receives solely untreated sanitary waste, and which 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.

* * * * *

Improved sinkhole means a naturally occurring karst depression which has been modified by man for the purpose of directing and emplacing fluids into the subsurface.

* * * * *

Sanitary waste means domestic sewage and household waste, including any material (e.g., wastewater from clothes-washing machines, toilets, showers, and dishwashers) derived from single and multiple residences, hotels and motels, restaurants, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

* * * * *

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

* * * * *

Subsurface fluid distribution system means an assemblage of perforated pipes or drain tiles used to distribute fluids below the surface of the ground.

* * * * *

Well means: (1) A bored, drilled, or driven shaft;

(2) A dug hole whose depth is greater than the largest surface dimension;

(3) An improved sinkhole; or

(4) A subsurface fluid distribution system.

Well injection means the subsurface emplacement of fluids through a well.

* * * * *

10. Section 146.5 is amended by adding a new paragraph (a)(3) and revising paragraphs (e) to read as follows:

§ 146.5 Classification of injection wells.

* * * * *

(a) * * *

(3) Radioactive waste disposal wells which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

* * * * *

(e) *Class V.* Injection wells not included in Class I, II, III, or IV. Class V includes, but is not limited to, the following well types:

(1) *Beneficial use wells.* Wells used for aquifer recharge, salt water intrusion barriers, subsidence control, aquifer storage and recovery, or subsurface environmental remediation;

(2) *Fluid return wells.* Wells used to inject: Spent brines after extraction of minerals; heat pump return fluids; and fluids that have undergone chemical alteration during the production of geothermal energy for heating, aquaculture, or production of electric power, into the same formation from which the fluids have been withdrawn;

(3) *Sewage treatment effluent wells.* Wells used to inject effluent from publicly or privately owned treatment works, into formations that are not below the lowermost USDW;

(4) *Cesspools* as defined in § 144.3.

(5) *Septic systems* as defined in § 144.3.

(6) *Experimental technology wells.* Any injection well that is part of an unproven subsurface injection technology;

(7) *Drainage wells.* Wells used to drain surface and subsurface fluids into a subsurface formation, including agricultural drainage and storm water runoff, other than runoff from loading dock, storage, and processing areas; Wells injecting runoff from loading dock, storage and processing areas are included under § 144.6(e)(10).

(8) *Mine backfill wells.* Wells used to inject a slurry of water or air with sand, mill tailings or other solids into mined out portions of subsurface mines;

(9) *In-situ and solution mining wells.* Wells used to inject fluids for the purpose of producing minerals or fossil fuels, which are not Class II or III wells;

(10) *Industrial waste discharge wells.* Wells used to inject wastewaters generated by industrial, commercial, and service establishments which are not included in paragraphs (e)(1) through (e)(9) of this section.

* * * * *

11. Section 146.10 is revised to read as follows:

§ 146.10 Plugging and abandoning Class I, II, III, IV, and V wells.

(a) *Requirements for Class I, II and III wells.* (1) Prior to abandoning Class I, II and III wells, the well shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. The Director may allow Class III wells to use other plugging materials if the Director is satisfied that such materials will prevent movement of fluids into or between underground sources of drinking water.

(2) Placement of the cement plugs shall be accomplished by one of the following:

(i) The Balance method;

(ii) The Dump Bailer method;

(iii) The Two-Plug method; or

(iv) An alternative method approved by the Director, which will reliably provide a comparable level of protection to underground sources of drinking water.

(3) The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

(4) The plugging and abandonment plan required in §§ 144.51(o) and 144.52(a)(6) shall, in the case of a Class III project which underlies or is in an aquifer which has been exempted under § 146.04, also demonstrate adequate protection of USDWs. The Director shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to insure adequate protection of USDWs.

(b) *Requirements for Class IV wells.* In EPA administered programs, prior to abandoning a Class IV well, the owner or operator shall close the well in accordance with § 144.23(b).

(c) *Requirements for Class V wells.* (1) Prior to abandoning a Class V well, the owner or operator shall close the well in a manner that prevents the movement of fluid containing any contaminant into an underground source of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons.

(2) The owner or operator shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements.

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