

Section of this Federal Register and incorporated by reference herein.

Dated: April 12, 2001.

A. Stanley Meiburg,

Acting Regional Administrator, Region 4.

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Parts 144 and 146

[FRL-6975-3]

### Underground Injection Control Program—Notice of Proposed Determination for Class V Wells

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Proposed Determination.

**SUMMARY:** Today, the Environmental Protection Agency (EPA) is proposing a determination for all categories of Class V injection wells not included in the final rulemaking on Class V motor vehicle waste disposal wells and large-capacity cesspools (64 FR 68546, December 7, 1999). These include shallow non-hazardous industrial waste injection wells, large-capacity septic systems, agricultural and storm water drainage wells, and other wells. The Agency proposes that additional Federal underground injection control (UIC) regulations are not needed at this time to prevent Class V wells from endangering underground sources of drinking water (USDWs). The Agency will, instead, implement its continuing statutory obligations and use existing authorities under the Safe Drinking Water Act to protect USDWs from any threatening underground injection activities. This proposed determination is based on The Class V Underground Injection Control Study (EPA Document

Number EPA/816-R-99-014, dated September 1999) and other information that has been placed in the public docket for comment.

**DATES:** EPA will accept public comment, in writing, on the proposed determination and the 1999 Class V Study until July 6, 2001. The Class V Study can also be found on EPA's Web site at [www.epa.gov/safewater/uic/cl5study.html](http://www.epa.gov/safewater/uic/cl5study.html).

**ADDRESSES:** Send written comments to the UIC Class V, W-98-05 Comment Clerk, Water Docket (MC-4101); U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460. Comments may be hand-delivered to the Water Docket, U.S. Environmental Protection Agency, 401 M Street, SW, East Tower Basement, Room 57, Washington, DC 20460.

**Comments:** Send one original and three copies of your comments and enclosures (including any references). Please submit all references cited in your comments. Facsimiles (faxes) can not be accepted. Commenters who would like EPA to acknowledge receipt of their comments should include a self-addressed, stamped envelope. To ensure that EPA can read, understand and therefore properly respond to comments, the Agency would prefer that commenters cite, where possible, the paragraph(s) or sections in the notice or supporting documents to which each comment refers. Commenters should use a separate paragraph for each issue discussed.

Comments may also be submitted electronically to [ow-docket@epa.gov](mailto:ow-docket@epa.gov). Electronic comments must be submitted as an ASCII, WP5.1, WP6.1 or WP8 file avoiding the use of special characters and form of encryption. Electronic comments must be identified by the docket number W-98-05. Comments and data will also be accepted on disks in WP 5.1, 6.1, 8 or ASCII file format.

The record for this rulemaking has been established under docket number W-98-05 and includes supporting documentation as well as printed, paper versions of electronic comments. The record is available for inspection from 9 to 4 p.m., Monday through Friday, excluding legal holidays at the Water Docket, EB 57, USEPA Headquarters, 401 M., Washington, DC. For access to docket materials, please call 202/260-3027 to schedule an appointment.

**FOR FURTHER INFORMATION CONTACT:** For technical inquiries, contact Joan Harrigan-Farrelly, Office of Ground Water and Drinking Water (mailcode 4606), EPA, 1200 Pennsylvania Ave., NW, Washington, DC 20460. Phone: 202-260-7077. For general information, contact the Safe Drinking Water Hotline, phone 800-426-4791. The Safe Drinking Water Hotline is open Monday through Friday, excluding Federal holidays, from 9:00 a.m. to 5:30 p.m. Eastern Standard Time.

**SUPPLEMENTARY INFORMATION:** *Affected Entities:* Although no new regulations are being proposed, this notice applies to owners or operators of any type of Class V well that is not a large-capacity cesspool or motor vehicle waste disposal well, as described in 40 CFR 144.81(2) and (16), respectively. The following table lists categories and examples of entities that may have such wells. This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by or interested in this action. Other types of entities not listed in the table could also be interested in it. To determine whether your injection well is affected by this action, you should carefully examine the applicability criteria in 40 CFR 144.1(g). If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

| Category                    | Examples of entities potentially affected by this action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Industry and Commerce ..... | Farms, animal feeding operations, and other agricultural sites that drain excess surface or subsurface water into wells; sites that have storm water drainage wells, facilities operating large-capacity septic systems, or nonhazardous waste disposal wells; facilities that extract minerals from brine and then inject the spent brine underground; mines that backfill materials into mine shafts, pipelines, or other holes that are deeper than they are wide; aquaculture facilities that dispose of wastewater in underground wells; solution mines that use injection wells in the recovery of minerals from ore bodies that have already been conventionally mined; sites that use injection wells as part of aquifer remediation activities; geothermal power plants that reinject fluids into the ground; facilities that extract direct heat from geothermal fluids and then return those fluids underground; and sites that use "open-loop" heat pump/air conditioning systems. |
| State and Local Government  | Municipalities that use storm water drainage wells; publicly owned treatment works that inject sewage treatment effluent underground; State and local government entities that inject water underground for the purpose of aquifer recharge or aquifer storage and recovery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Federal Government .....    | Any Federal Agency that owns or operates one of the above entities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| 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 authorizes EPA 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 effective 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), June 10, 1994 (59 FR 29958), December 14, 1994 (59 FR 64339), June 29, 1995 (60 FR 33926), and December 7, 1999 (64 FR 68546).

Section 1422 of the Act provides that States may apply to EPA for primary enforcement 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 a UIC program for such States by regulation. These direct implementation (DI) program regulations were issued in two phases, on May 11, 1984 (49 FR 20138) and November 15, 1984 (49 FR 45308). For the remainder of this preamble, references to the UIC Program "Director" mean either the Director of the EPA program (where the program is implemented directly by EPA) or the Director of the primacy State program (where the State is responsible for implementing the program). Also, currently all UIC Programs in Indian Country are directly implemented by EPA. Therefore, for the remainder of this preamble, references to DI programs include UIC programs in Indian Country.

#### B. Requirements Applicable To Class V Wells

The UIC regulations establish five classes of injection wells. Class I wells are used to inject hazardous and non-hazardous waste beneath the lowermost formation containing an underground source of drinking water (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 from ore bodies that have not been conventionally mined. 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 wells, other than motor vehicle waste disposal wells and large-capacity cesspools, are currently authorized by rule (§§ 144.24(a) and 144.84(a)). Rule authorization expires upon the effective date of a permit issued pursuant to §§ 144.25, 144.31, 144.33, or 144.34; upon meeting one of the conditions specified in § 144.84(b); or upon proper closure of the well as described in § 144.82(b). Existing Class V motor vehicle waste disposal wells in "ground water protection areas" and "other sensitive ground water areas"<sup>1</sup> are banned with a provision that allows owners and operators of such wells to seek a waiver from the ban and obtain a permit (§ 144.88(b)). New Class V motor vehicle waste disposal wells and new and existing large-capacity cesspools were banned nationwide (§§ 144.88(a) and (b)). These new requirements affecting motor vehicle waste disposal wells and large-capacity cesspools are minimum Federal standards—primacy States may impose more stringent requirements.

In addition to these provisions, Class V UIC Program Directors have many obligations and authorities under the SDWA to ensure the protection of USDWs. Specifically, the current regulations subject Class V wells to the general statutory and regulatory

<sup>1</sup> A ground water protection area is defined in § 144.86(c) as a geographic area near and/or surrounding community and non-transient non-community water systems that use ground water as a source of drinking water. These areas receive priority for the protection of drinking water supplies and States are required to delineate and assess these areas under section 1453 of the SDWA. Other sensitive ground water areas are defined in § 144.85(g) as additional State-defined areas that are critical to protecting USDWs from contamination. The other sensitive ground water areas may include areas overlying sole-source aquifers; highly productive aquifers supplying private wells; continuous and highly productive aquifers at points distant from public water supply wells; areas where water supply aquifers are recharged; karst aquifers that discharge to surface reservoirs serving as public water supplies; vulnerable or sensitive hydrogeologic settings, such as glacial outwash deposits, eolian sands, and fractured volcanic rock; and areas of special concern selected based on a combination of factors, such as hydrogeologic sensitivity, depth to ground water, significance as a drinking water source, and prevailing land use practices.

prohibitions against endangerment of USDWs, as well as some specific requirements. Under § 144.12(a) and § 144.82(a), owners or operators of all injection 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 141 or may otherwise adversely affect human health. Sections 144.12(c), (d), and (e) prescribe mandatory and discretionary actions to be taken by the Director if a well is not in compliance with § 144.12(a). These actions may include requiring the well operator to apply for an individual permit, ordering such action as closure of the well to prevent endangerment, taking an enforcement action, and/or taking an emergency action.

Owners or operators of Class V injection wells must also submit basic inventory and assessment information under § 144.26 and § 144.83. In addition, Class V wells are subject to the general program requirements of § 144.25 and § 144.84 under which the Director may require a permit, if necessary, to protect USDWs. Moreover, under § 144.27 and § 144.83, 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, 144.27, or 144.83 are prohibited from using their injection wells.

### C. History of This Rulemaking

#### 1. 1987 Report to Congress

In accordance with the 1986 Amendments to the SDWA, 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 what, if any, additional measures were needed to control Class V wells on the national level. For any given type of well, the recommendations varied broadly and were rarely made by more than two or three States. For example, the

recommendations for septic systems range from further studies (3 States) to statewide ground water monitoring (1 State). For industrial waste water wells, some States recommended immediate action and closure while others recommended monitoring and ground water evaluation studies.

#### 2. 1994 Consent Decree With the Sierra Club

On December 30, 1993, the Sierra Club filed a complaint 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. The complaint alleged that EPA's then current regulations regarding Class V wells did not meet the SDWA's statutory requirements to "prevent underground injection which endangers drinking water sources." (Complaint, Paragraph 15)

To resolve the issue, EPA entered into a consent decree with the Sierra Club on August 31, 1994. This consent decree required that, no later than August 15, 1995, the Administrator sign a notice to be published in the *Federal Register* proposing regulatory action that fully discharges the Administrator's rulemaking obligation under section 1421 of the SDWA, 42 U.S.C. 300h, with respect to Class V injection wells. A final rulemaking on the matter was required to be signed by no later than November 15, 1996.

#### 3. 1995 Proposed Determination

On August 15, 1995, the Administrator signed a notice of proposed rulemaking that proposed a regulatory determination on Class V injection wells intended to fulfill EPA's obligation under the 1994 consent decree with the Sierra Club (60 FR 44652, August 28, 1995). In this notice, EPA proposed not to adopt additional Federal regulations for any types of Class V wells. Instead, the Agency proposed to address the risks posed by certain wells using existing authorities and a Class V management strategy designed to: (1) Speed up the closure of potentially endangering wells, and (2) promote the use of best management practices to ensure that other Class V wells of concern do not endanger USDWs. Several factors led EPA to propose this approach, including: (1) The wide diversity in the types of fluids being injected, ranging from high risk to not likely to endanger; (2) the large number of facilities to be regulated; and (3) the nature of the regulated community, which consists of a large proportion of small businesses.

#### 4. 1997 Modified Consent Decree

Based on public comments received on the 1995 proposal, EPA decided to reconsider its proposed approach. Because this reconsideration would extend the time necessary to complete the rulemaking for Class V wells, EPA and the Sierra Club entered into a modified consent decree on January 28, 1997 (D.D.C. No. 93-2644) that extended the dates for rulemaking that had been in the 1994 decree. The modified decree requires three actions.

First, by no later than June 18, 1998, the EPA Administrator was required to sign a notice to be published in the *Federal Register* proposing regulatory action that fully discharged the Administrator's rulemaking obligation under section 1421 of the SDWA with respect to those types of Class V injection wells determined to be high risk for which EPA did not need additional information. The Administrator was required to sign a final determination for these endangering Class V wells by no later than October 29, 1999. Thirty-day extensions were subsequently granted for both of these deadlines.

Second, by no later than September 30, 1999, EPA was required to complete a study of all Class V wells not included in the first rulemaking on endangering Class V injection wells. Based on this study, EPA may find that some of these other types of Class V wells also endanger USDWs.

Third, by no later than April 30, 2001, the EPA Administrator was required to sign a notice to be published in the *Federal Register* proposing to discharge the Administrator's rulemaking obligations under section 1421 of the Safe Drinking Water Act (SDWA) with respect to all Class V injection wells not included in the first rulemaking for Class V injection wells. The Consent Decree requires that the Administrator either (1) propose regulations fully implementing section 1421 with respect to all such Class V injection wells, (2) propose a decision that no further rulemaking is necessary in order to fully discharge the Administrator's rulemaking obligations under section 1421 with respect to all such Class V injection wells, or (3) propose regulations fully implementing section 1421 with respect to some of these remaining Class V injection wells and propose a decision that no further rulemaking is necessary in order to fully discharge the Administrator's rulemaking obligations under section 1421 with respect to all other Class V injection wells not already covered. The Administrator must sign a final

determination for these remaining Class V wells by no later than May 31, 2002.

#### 5. 1998 Proposal and 1999 Final Rule

On July 29, 1998 (63 FR 40586), in response to the first action required under the modified consent decree with the Sierra Club, EPA proposed revisions to the Class V UIC regulations that would add new requirements for three categories of Class V wells that were believed to endanger underground sources of drinking water. According to this proposal, Class V motor vehicle waste disposal wells in ground water protection areas (as defined in footnote 1 above) would either be banned, or would have to get a permit that requires fluids released in those wells to meet the drinking water maximum contaminant levels (MCLs) and other health-based standards at the point of injection. Class V industrial waste disposal wells in ground water protection areas also would be required to meet the MCLs and other health-based standards at the point of injection, and large-capacity cesspools in such areas would be banned.

EPA received substantial public input on the 1998 proposal. The input included 97 letters from public commenters as well as recommendations from the National Drinking Water Advisory Council (NDWAC), which formed a Federal Advisory Committee Act (FACA) working group to address Class V UIC and Source Water Protection Program integration issues. This FACA workgroup met twice in 1999 to discuss the proposed Class V regulation. In addition, on May 21, 1999 (64 FR 27741), the Agency published a notice of data availability (NODA) and further request for comment related to the 1998 proposal. A total of 14 public comment letters were received in response to this request.

Taking all the public input into account, EPA issued final revisions to the Class V UIC regulations on December 7, 1999 (64 FR 68546). The final rule added new requirements for (1) existing motor vehicle waste disposal wells located in ground water protection areas delineated for community water systems and non-transient non-community water systems that use ground water as a source and in other sensitive ground water areas delineated by the States; and (2) new and existing large-capacity cesspools and new motor vehicle waste disposal wells nationwide. The final rule, however, did not adopt the proposed additional requirements for industrial waste disposal wells to meet the MCLs and other health based standards at the

point of injection. Many commenters questioned why the Agency chose to regulate a wide range of industries with different disposal practices with one approach. Some commenters thought the industrial category was too diverse and types of industrial waste streams should be regulated based on their specific characteristics and risks. After considering these comments, EPA agreed that the industrial category is diverse and represents a variety of waste streams that required additional review before deciding on the need for additional Federal regulations.

#### 6. 1999 Class V Study

On September 30, 1999, in response to the second action required under the modified consent decree with the Sierra Club, EPA published a study of all Class V wells not included in the 1998 proposal (EPA Document Number EPA/816-R-99-014). The study consisted of two major components: (1) An information collection effort for the remaining universe of Class V wells, which was divided into 23 different categories for the purpose of analysis; and (2) an "inventory modeling" exercise to estimate the number of storm water drainage wells and large-capacity septic systems, two types of wells that were believed to be quite prevalent, but for which adequate inventory information was particularly lacking.

As described in detail in Volume 1 of the final Study report, the information collection effort consisted of a comprehensive literature search, State and EPA Regional data collection, requests to the public for data, and peer review. As part of the State and EPA Regional data collection, the Agency distributed nearly 700 questionnaires to EPA Regional, State, and local program staff in all 50 States and U.S. territories, including staff responsible for Class V well control on Indian Lands in EPA Regions 5, 8, 9, and 10. The Agency supplemented the information from the questionnaires with follow-up telephone interviews and on-site file searches in 11 primacy States, 3 DI States, and 2 Regional Offices with DI States. The Agency also supplemented the survey results with visits to a number of injection well sites, including geothermal electric power well sites in California and food processing waste disposal well sites in Tennessee and Maine.

For the inventory modeling, EPA selected and visited a sample of 99 census tracts across the nation to collect data on the numbers of storm water drainage wells and large-capacity septic systems that exist and factors that influence their prevalence. Storm water

drainage wells were found in 22 of the 99 census tracts visited and large-capacity septic systems were found in 88 of the 99 census tracts visited. EPA used the data collected from the visits to develop mathematical models for predicting the numbers of these wells nationwide.

#### D. Scope of Today's Proposed Determination

Today's proposed regulatory determination addresses all of the Class V well types not covered by the 1999 final rule, in response to the third action required under the modified consent decree with the Sierra Club. For the purpose of this notice, these other well types are discussed in the following categories that track with the earlier proposals described above as well as the categories addressed in the Class V Study: Agricultural drainage wells, storm water drainage wells, large-capacity septic systems, sewage treatment effluent wells, spent brine return flow wells, mine backfill wells, aquaculture waste disposal wells, solution mining wells, in-situ fossil fuel recovery wells, special drainage wells, experimental wells, aquifer remediation wells, geothermal electric power wells, geothermal direct heat wells, heat pump/air conditioning return flow wells, saltwater intrusion barrier wells, aquifer recharge and aquifer storage and recovery wells, subsidence control wells, and industrial wells (including, but not limited to, carwash wells, food processing waste disposal wells, laundromat wells, and non-contact cooling water wells). These categories are the same as the ones defined in the existing regulations in 40 CFR § 144.81. However, in some cases the categories have been combined or separated to facilitate the discussion of the data and rationale used to support this determination. This determination, however, does not propose to change the Class V well categories currently defined in the UIC regulations to the ones discussed here.

It is also important to clarify that this notice satisfies the Agency's obligations under the modified consent decree with the Sierra Club, but it does not end EPA's obligations, requirements, and actions to prevent Class V wells from endangering USDWs. As described in Section I.B above, UIC Program Directors have many obligations and authorities under the SDWA to ensure the protection of USDWs from the risks posed by Class V wells. The Agency will continue to fulfill these obligations and using existing authorities for all Class V wells (Section IV.F.3 below summarizes some of the actions UIC Program

Directors take for Class V industrial wells using these existing authorities). In addition, nothing in this notice precludes a State or local government from promulgating requirements more stringent than the minimum Federal requirements. Also, today's proposed determination does not affect EPA's authority to impose any necessary regulations in the future on any of the well types addressed in today's notice.

## II. Factors Considered in Making the Proposed Determination

### A. Criteria Proposed in 1995

The Agency proposed two criteria in 1995 for 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, the Agency proposed that the then existing regulations provided sufficient authorities to handle the few cases where mismanagement of one of these wells could create an endangering situation. To assess the need for additional UIC regulation for the other wells, the 1995 proposal 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 that are found only in one or two counties or 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.

### B. Public Comments on the 1995 Proposed Approach

EPA received 57 public comment letters on the 1995 proposal, several of which addressed the proposed decision-making criteria summarized above. Many comments supported the Agency's proposal to not impose more regulations for Class V wells based on these criteria. However, EPA also received a number of comments that raised concerns about the overall approach, including the above criteria

and the related rationale proposed for some well types. The opposing comments are best represented by nine main points made by the Sierra Club, which are addressed in turn below.

First, the Sierra Club asserted that blanket authorization of Class V wells by rule, based on any criteria, violates the SDWA. The basis for this comment was the Sierra Club's interpretation that SDWA requires EPA to prescribe regulatory standards for State programs. EPA disagrees that the Class V regulations violate the SDWA. SDWA section 1421(b) requires EPA to issue regulations for effective State programs to prevent endangerment of drinking water sources by underground injection. The statute specifically States that the regulations "may permit a State to authorize underground injection by rule." Section 1421(b)(1)(A). EPA has provided such authority to States for Class V regulations; the authorization by rule requirements for such wells include requirements for reporting and avoiding endangerment of drinking water sources. As discussed in more detail below, EPA has found that these requirements are generally effective in preventing endangerment from the Class V wells discussed in today's proposed determination. Thus, EPA has met the statutory mandate of prescribing regulations for "effective" State programs "to prevent \* \* \* endangerment" from Class V UIC wells.

Second, the Sierra Club stated that continued reliance on the non-endangerment provision in 40 CFR 144.12 and the authority in 40 CFR 144.25 to require a permit does not fulfill EPA's statutory duty to specify minimum requirements for State UIC programs. EPA disagrees with this analysis. The minimum requirements for State UIC Class V programs are specified in EPA's regulations; these include reporting and non-endangerment requirements. While these may not be as specific and detailed as the requirements for the other UIC well classes, they are nonetheless "minimum requirements for \* \* \* (State) programs" as required by SDWA section 1421(b). Because these requirements, general as they are, have been effective in preventing endangerment from these wells, no more is required under the statute.

Third, the Sierra Club argued that the existence of State or local regulations does not justify a decision not to impose more Federal regulations. While EPA agrees that the mere presence of State or local regulations governing UIC wells does not justify a decision not to impose Federal requirements under section 1421(b), such State or local regulations

may be an important factor in determining the extent of "endangerment" from Class V wells and the "effectiveness" of additional Federal requirements. For example, as discussed below, in determining the extent of "endangerment" posed by various Class V well types, EPA relied heavily upon actual contamination incidents; however, the adequacy of State and local requirements was also a factor that helped EPA determine the likelihood of future contamination from such wells. Similarly, EPA believes that comprehensive State and local regulation of a Class V well type, such as septic systems discussed below, may make additional Federal regulation entirely duplicative, if not disruptive. Where such regulation exists, further Federal regulation may be futile in terms of ensuring "effective" State programs; rather, Federal efforts may be better focused on implementation of and education regarding existing regulations and programs than merely adding yet another layer of redundant or duplicative requirements. Thus, EPA continues to believe that the extent of State and local regulation remains a highly relevant consideration in meeting the section 1421(b) mandate. At its core, the statute clearly envisions that the UIC program be a State-run program and the Federal role is to ensure that existing State UIC programs become or remain effective in addressing any endangerments from underground injection wells.

Fourth, the Sierra Club claimed that a decision not to impose additional regulations cannot be justified on the grounds that Class V wells are not the principal source of endangerment from a widespread environmental problem, because partial or incremental solutions are better than none at all. In order for this criterion to be valid, the Sierra Club asserted that EPA would have to show that additional Federal regulations yield a gain of trivial or no value. As noted below, EPA has dropped this criterion as a basis for deciding not to establish further regulations for Class V wells. However, EPA continues to believe that the extent of contamination from Class V wells, based on actual incidents of contamination, remains a critical factor in determining whether sufficient "endangerment" is posed by Class V wells to warrant additional Federal requirements.

Fifth, the Sierra Club argued that EPA cannot decide against additional Class V regulations based on a finding that endangerments are localized problems. According to the comment, nothing in SDWA exempts from regulation endangerments that occur in one or a

few places, and nothing prevents these localized problems from emerging in other areas in the future. While EPA agrees that "endangerments" that are "localized" may still warrant Federal regulation since, as a factual matter, most well contamination will endanger only a localized area, EPA strongly believes that additional Federal regulation is not necessary where the endangerment posed by a particular well type appears to be isolated and rare. No amount of Federal regulation (or any other regulation) can prevent all contamination; the fact that an isolated incident of contamination from a UIC well occurs does not mean that the State program for that well is ineffective in preventing endangerment. Rather, EPA believes that under Section 1421(b) Federal regulations for UIC wells are reserved for situations, such as with motor vehicle waste disposal wells (addressed in the December 7, 1999, final revised Class V UIC regulations (64 FR 68546)), where existing State programs are not generally "effective" in preventing endangerment from certain well types. With respect to assurance that wells may not contaminate in the future, EPA believes that it has a continuing obligation under 1421(b) to determine whether additional Federal regulation is necessary for any UIC well types. Today's proposed determination does not affect EPA's authority to impose any necessary regulation in the future on any of the well types addressed in today's notice.

Sixth, the Sierra Club asserted that EPA's duty to regulate under SDWA is not removed by other Federal programs that also address Class V wells. Moreover, the fact that Federal programs overlap in subject matter is no obstacle to regulation, and in many cases, other Federal programs do not address the endangerment fully. As discussed below, EPA has not used other Federal programs as a criterion for determining whether to impose additional UIC requirements in today's notice. However, EPA does believe that the existence of other Federal programs that address Class V wells may be highly relevant in determining whether an "endangerment" exists and whether additional SDWA regulation would be "effective" in addressing that endangerment.

Seventh, the Sierra Club objected to the proposal that additional regulations could not be developed for some Class V well types because of diversity in local hydrogeologic conditions or in types of fluids injected. According to the Sierra Club, such variability is not grounds for a regulatory exemption under SDWA and could be addressed by

establishing targeted regulations for more narrowly defined subcategories of wells. While EPA agrees that such diversity in conditions is not in itself a reason for EPA to determine that Federal regulations are unnecessary, EPA believes that such diversity may be a factor in determining whether additional Federal regulation would promote more "effective" State programs to address the well type in question.

Eighth, the Sierra Club commented that the existence of large numbers of regulated entities and an alleged lack of facility-specific data do not justify a decision not to regulate further. In support of this comment, the Sierra Club said that the size of a regulated community is always workable, and that EPA has an obligation to collect the data necessary to perform its rulemaking duties. EPA has not used either of the factors Sierra Club mentions as a basis for today's proposed determination.

Ninth, the Sierra Club argued that EPA cannot decide against additional regulations for some well types based on the criterion that a large proportion of the regulated community is comprised of small businesses. Among other points made in support of this argument, the Sierra Club stated that SDWA creates no exemption for small businesses and that EPA did not show that the burden on small businesses would be severe. EPA has not used the type of regulated community as a basis for today's proposed determination.

#### *C. Proposed Criteria for Today's Notice*

EPA is proposing today to use the two main criteria proposed in 1995—potential to endanger USDWs and the anticipated effectiveness of additional Federal UIC regulation—to determine whether other categories of Class V wells warrant additional regulation. The Agency is now better able to apply these criteria using additional information gathered from the 1999 Class V Study. Based on the above comments and responses, however, the Agency is dropping from consideration some of the principles used in 1995.

The potential to endanger USDWs is by far the more important of the two criteria, given the SDWA mandate to ensure non-endangerment. EPA evaluated this potential based in large part on the record of documented incidents of ground water and other environmental contamination caused by the operation of the different well types. While the Agency also evaluated the potential for such contamination based on such factors as the quality of fluids injected, the characteristics of the injection zone, well design and

operating features, the vulnerability of the wells to spills or illicit discharges, and the adequacy of existing State and Federal UIC programs for addressing any potentially endangering situations, EPA believes that the absence of frequent, widespread, or significant cases of actual contamination is compelling evidence of a low potential to endanger that does not warrant additional Federal regulation at this time.

EPA considered the anticipated effectiveness of additional Federal UIC regulation for only a few well categories for which a sound determination could not be based on the potential to endanger alone. In evaluating the anticipated effectiveness of additional regulation, EPA considered such factors as the degree to which additional Federal UIC regulations would simply duplicate existing State programs without increasing the "effectiveness" of these programs. While the Agency also considered the possibility of the UIC program joining forces with other existing or emerging programs to achieve greater results in an integrated fashion, it did not use the existence of other Federal programs that also address Class V wells as a basis for deciding against additional UIC regulation. In addition, EPA did not use the diversity in conditions, the existence of large numbers of regulated entities, the lack of facility-specific data, or the existence of a large proportion of small businesses as decision making criteria.

### **III. Class V Wells Found To Have a Low Potential To Endanger in the 1995 Proposal**

#### *A. 1995 Proposed Finding*

Based on the data available at the time, the Agency proposed in 1995 (see 60 FR 44652, August 28, 1995) that several types of Class V injection wells generally had a low potential to endanger USDWs, including: (1) Salt water intrusion barrier wells, (2) subsidence control wells, (3) heat pump/air conditioning return flow wells, (4) spent brine wells, (5) swimming pool and landslide control wells (i.e., "special drainage" wells), and (6) solution mining wells. This finding was based on such factors as good injection quality (e.g., comparable to or better than the fluids in the injection zone), appropriate well construction and maintenance, injection zone characteristics, and existing regulatory oversight. In addition, EPA found that the following well types generally had a low-to-moderate or moderate potential to endanger: (1)

Aquifer recharge<sup>2</sup> and aquifer storage and recovery wells, (2) aquifer remediation, (3) geothermal direct heat wells, (4) geothermal electric power wells, (5) aquaculture wells, (6) experimental technology wells, and (7) in-situ fossil fuel recovery wells. In general, EPA found that the fluids injected into these wells were of lower quality than those injected into the six types of wells first discussed above, but well construction, operation, and maintenance in combination with locational factors and existing Federal and State programs safeguard against endangerment. In the case of in-situ fossil fuel recovery wells, the Agency also noted that no wells of this type were known to be operating.

#### B. Public Comments on Well Types

In response to the 1995 proposal, EPA received no comments on five of these 13 well types: (1) Salt water intrusion barrier wells, (2) subsidence control wells, (3) special drainage wells, (4) geothermal direct heat wells, and (5) aquaculture wells. EPA received limited comments that did not disagree with the Agency's characterization of the potential of the wells to endanger USDWs for another five of these 13 well types: (1) Spent brine return flow wells, (2) solution mining wells, (3) aquifer recharge and aquifer storage and recovery wells, (4) aquifer remediation wells, and (5) experimental technology wells. Of the remaining wells, one commenter disagreed with the Agency's characterization of heat pump/air conditioning return flow wells and geothermal electric power wells as having a low potential to endanger USDWs. The commenter indicated that heat pump/air conditioning return flow wells could allow the introduction of contaminants (e.g., refrigerants, lead, copper) into ground water and possible cross-contamination between aquifers. In addition, the commenter indicated that electric power geothermal injection wells are "not innocuous" because high temperatures and contaminants picked up in the power plant may degrade ground water. Another commenter indicated that ground water in the vicinity of five in-situ fossil fuel recovery projects has been contaminated.

<sup>2</sup> EPA found that some aquifer recharge wells pose a moderate to high threat of USDW contamination when they are operated as dual purpose wells that alternately withdraw water for irrigation and inject irrigation drainage water. These wells are more similar to other agricultural drainage wells and are included below in the discussion of agricultural drainage wells.

#### C. 1999 Class V Study

The Class V Underground Injection Control Study (EPA/816-R-99-014, September 1999) presents additional information about each of these 13 well types that was collected following the 1995 proposal. The Agency believes that this information confirms the findings proposed in 1995, although some of the supporting details are new or different. For example, in 1995, EPA found that there is little chance that fluids injected into spent brine return flow wells (in seven States) would reach USDWs because the wells were adequately constructed with multiple layers of protection and inject into deep confined formations. The Class V Study found that spent brine return flow wells regulated under Class V now only occur in two States and that in all cases the wells have individual permits and inject below the lowermost USDW. Similarly, in 1995 EPA found that salt water intrusion barrier wells have a low potential to contaminate USDWs because they generally inject fluids of equivalent or better quality than the injection zone fluids. The Class V Study found that waters of varying quality are injected into these wells, but typically the injected water meets primary and secondary drinking water standards. In addition, ground water monitoring and associated studies have shown no measurable adverse effects on either ground water quality or the health of the population ingesting the water when the injectate was treated wastewater effluent.

Of the 13 well types in this group, the Class V Study identified reported contamination incidents associated with the operation of only three types. For in-situ fossil fuel recovery wells, the Class V Study confirmed the information submitted by a commenter that ground water contamination had occurred in the vicinity of in-situ fossil fuel recovery operations. The Class V Study also confirmed, however, that no wells of this type are known to be in operation. For heat pump/air conditioning return flow wells, the Class V Study identified a few sites where ground water contamination has been reported. Thus, EPA agrees with the commenter who indicated that operation of these wells could result in ground water contamination. The available information indicates, however, that such occurrences are very rare in light of the estimated 35,000 wells of this type in over 40 States. For aquifer remediation wells, the Class V Study identified a single reported contamination incident that resulted from an equipment failure, but

confirmed that these wells are controlled as part of Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and State remediation programs in addition to the UIC program.

For electric power geothermal injection wells, the Class V Study did not identify any reported incidents of USDW contamination, but the Class V Study did find that injected fluids at some plants may include a mixture of surface water, treated wastewater effluent, and/or storm water in addition to geothermal fluids. Thus, there is the potential for the injected fluids to contain contaminants not present in the geothermal fluids, as indicated by one commenter. The Class V Study confirmed, however, that geothermal fluids used for power production are not typically of potable quality, and that typical well construction, operation, and maintenance are not expected to allow fluid injection into unintended ground water zones.

Based on the information available at this time, including the Class V Study, EPA concludes that the 13 wells types discussed in this section have a low potential to endanger USDWs. As a result, EPA concludes that no additional Federal regulations applicable to these wells are needed at this time. Where isolated incidences of endangerment occur or are threatened, EPA will use its existing authorities to require permitting, closure or corrective action to address the endangerment.

#### IV. Other Class V Wells

##### A. Sewage Treatment Effluent Wells

##### 1. 1995 Proposed Finding

EPA found that the overall potential for sewage treatment effluent wells to contaminate USDWs was moderate. The Agency also found that the potential to endanger USDWs ranged from low to high, in large part due to the range in the type of treatment provided prior to injection. Specifically, the Agency found that some wells inject clarified effluent that has undergone secondary or tertiary treatment and have a low potential to endanger USDWs, but effluent that has undergone only primary treatment creates a higher potential to contaminate USDWs. Further, EPA found that the majority of the wells of concern were located in Florida and Hawaii and were being addressed at the State level. Based on this information, the Agency proposed that no additional Federal regulations were needed at the time for sewage treatment effluent wells.

## 2. Public Comments

EPA received only one comment on its 1995 proposal for these wells. This commenter asserted that additional Federal regulations were needed because only a "majority" (and not all) of the wells with a high potential to contaminate USDWs were being addressed at the State level.

## 3. 1999 Class V Study

The Class V Study shows that more than 95 percent of documented sewage treatment effluent wells are located in five States: Arizona, California, Florida, Hawaii, and Massachusetts. Individual permits are required for the wells in all five of these States and the wells are prohibited in some situations (e.g., in ground water protection zones in Hawaii). Requirements in other States with sewage treatment effluent wells include minimum treatment requirements prior to injection (e.g., secondary treatment, compliance with MCLs), compliance with MCLs outside the ground water discharge zone (at a designated compliance point), individual permits, and/or compliance with specified well construction and operating requirements.

The Study identified approximately 1,700 wells, but only two incidents in which ground water contamination was attributed to the injection of treated sewage effluent through a Class V well. One of these incidents occurred more than 25 years ago. Nutrient enrichment of surface waters, with resulting algal blooms, has also been reported in offshore waters near some sites where effluent injection occurs in some coastal areas in Florida and Hawaii. This issue is receiving considerable research and regulatory attention. For example, EPA, the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, the Florida Department of Environmental Protection, the University of South Florida, the University of Miami, the Florida Keys National Marine Sanctuary, and several other organizations have conducted studies to evaluate the impacts of sewage disposal, including the injection of sewage treatment effluent in Class V wells, on offshore water quality. These studies suggest that the operation of sewage treatment effluent wells and other disposal practices in the Florida Keys can lead to rapid nutrient enrichment and fecal contamination of marine waters in the Keys, although the concentrations eventually reaching surface waters are greatly diluted. To combat this problem, Florida currently requires sewage treatment effluent wells to be individually permitted and to meet

primary drinking water standards at the point of injection. In addition, owners or operators of sewage treatment effluent wells in Monroe County, which encompasses the Keys, are required as part of the Class V operating permit application to provide reasonable assurance that operation of their wells will not cause or contribute to a violation of surface water quality standards.

## 4. Proposed Determination

Based on the information available at this time, including the Class V Study, EPA concludes that sewage treatment effluent wells have a low potential to endanger USDWs due to a combination of factors. These factors, which may vary from well to well, include good injection quality, well construction and maintenance, and existing regulatory oversight. The most pressing documented problem—injectate migration and contamination of offshore water and coral reefs in the Florida Keys—is already being studied by many researchers and addressed at both the Federal and State levels. The incidence of contamination from these wells has also been rare. Thus, EPA proposes that no additional Federal regulations applicable to these wells are needed at this time. The Agency will use its existing permitting and enforcement authorities as necessary to prevent any sewage treatment effluent wells from endangering USDWs.

### B. Mine Backfill Wells

#### 1. 1995 Proposed Finding

In 1995, EPA found that mine backfill wells, in general, had a moderate potential to contaminate USDWs. This finding was in part based on the fact that injected slurries had the potential to react with acid mine water to mobilize potential ground water contaminants. However, USDWs interconnected with, and therefore potentially affected by the mine backfill activities, were generally of moderate to poor quality. In addition, mine backfill injection had been shown to improve overall ground water quality in some situations, even when contaminants were released from the injected slurry. The 1995 proposed finding also recognized that most backfill wells were regulated under State water quality or mining programs in addition to the UIC program. Based on these considerations, EPA proposed that additional Federal regulations for these wells were not needed at the time to ensure the protection of USDWs.

## 2. Public Comments

Several comments on the 1995 proposal were supportive of EPA's determination that no additional UIC regulations were needed and specifically discussed the adequacy of current requirements for backfilling of hard rock mines. No commenters directly opposed the proposed determination, although one commenter indicated that they favored the addition of a general permit authority.

## 3. 1999 Class V Study.

The Study documented that mine backfill wells are used in many mining regions of the country to inject a mixture of water, sand, mill tailings, or other materials such as coal combustion ash and flue gas desulfurization sludge into underground mines. Information collected and compiled in the Study is consistent with the information available in 1995 that showed that ground water quality within a mine is often poor (e.g., due to acid mine drainage) and that backfill wells are just one of many possible sources (including natural sources) of ground water contamination. No incidents of contamination directly attributable to these wells were reported, and in some cases information shows that backfill wells have negligible or positive effects on ground water quality. In other cases, however, backfill material has been shown to leach contaminants more readily than predicted by standard tests and increase contaminant concentrations in ground water. The chance that backfill injection will contribute to ground water contamination is highly dependent on site conditions, such as site hydrogeology, mine mineralogy, backfill characteristics and injection practices.

More than 90 percent of the documented mine backfill wells reported in the Study are located in four States that have primacy for the Class V portion of the UIC wells. Two of these States require individual permits for the wells while the other two States issue permits by rule as long as USDW endangerment does not result. Other States regulate mine backfill wells by rule authorizing them and implementing existing UIC authorities, or by issuing general (or area) permits or individual permits.

#### 4. Fossil Fuel Combustion Waste Report to Congress

Also in 1999, EPA issued a *Report to Congress on Wastes from the Combustion of Fossil Fuels* (EPA 530-S-99-010). Based on the findings of this report, comments and additional data

received, and additional analysis of the available information, the Agency made a regulatory determination in May 2000 (65 FR 32214) that additional regulations under Subtitle D of RCRA and/or possibly modifications to existing regulations established under Surface Mining Control and Reclamation Act (SMCRA) authority are warranted when coal combustion wastes are used to fill surface or underground mines (i.e., minefilled). In making this determination, the Agency explained that although placement of coal combustion waste in a mine has not been documented to cause increased damage to ground water, minefilling is an increasingly common practice that could present a danger to human health and the environment under certain circumstances (e.g., placement directly into the ground water). EPA found that available information indicates that if the chemistry of the mine relative to the chemistry of the coal combustion wastes is not properly taken into account, the addition of coal combustion wastes to certain environmental settings can lead to an increase in hazardous metals (e.g., arsenic) released into the environment. The Agency also noted that management of coal combustion wastes in the presence of acid-generating pyritic wastes has caused metals to leach from the combustion wastes at much higher levels than are predicted by leach test data for coal combustion wastes when strongly acidic conditions are not present. Further, the Agency noted that a recent study of cement kiln dust showed that placement directly in contact with ground water led to substantially greater release of hazardous metal constituents than EPA predicted would occur when not placed in ground water.

In addition, EPA explained that there are few States that operate comprehensive programs that specifically address the unique circumstances of minefilling, making it more likely that damage to human health or the environment could go unnoticed. In particular, the Agency found that government oversight has not "caught up" with recent and rapidly expanding minefilling of coal combustion wastes and that serious gaps exist in State programs, such as a lack of adequate controls and restrictions on unsound practices, e.g., no requirement for ground water monitoring and no control or prohibitions on waste placement in the aquifer.

#### 5. Proposed Determination

Based on the information available at this time, EPA concludes that mine backfill wells generally have a low

potential to endanger USDWs because no incidents of contamination directly attributable to these wells were reported, and in some cases information shows that backfill wells have negligible or positive effects on ground water quality. As discussed above, however, injection of coal combustion wastes may threaten ground water under some circumstances. The Agency has recently initiated efforts to improve its understanding of this potential threat to ground water and address it for both surface and underground minefilling (including underground injection) using the regulatory authorities of RCRA and/or SMCRA. As a result, EPA proposes not to develop any additional Federal UIC regulations applicable to mine backfill wells at this time. Rather, the Agency will continue to assess any potential endangerment of USDWs by individual mine backfill wells and address any such potential endangerment with existing permitting and enforcement authorities and any new requirements to be developed under RCRA and/or SMCRA.

#### C. Storm Water Drainage Wells

##### 1. 1995 Proposed Finding and 1998 Proposal

EPA found that storm water drainage wells had a moderate potential to endanger USDWs. This proposed finding considered the fact that storm water can acquire contaminant loads from streets, roofs, landscaped areas, industrial areas, and construction sites. The most significant concern identified was wells located in industrial settings (e.g., near loading docks, process areas) where chemical spills may occur and enter the well unless a physical barrier (e.g., berm) is present to contain a spill. In other settings, EPA found that storm water would normally not contain contaminants in concentrations that exceed drinking water standards. Moreover, available contamination studies did not show that area-wide degradation of ground water quality had resulted from storm water drainage wells.

Based on this information, EPA proposed not to develop any additional Federal UIC regulations applicable to storm water drainage wells at that time. However, recognizing the potential concern associated with such wells at industrial sites, EPA proposed to categorize storm water drainage wells located in industrial settings as industrial wells unless an adequate barrier is in place to prevent spilled materials from entering the well. According to the 1995 proposal, these so-called "industrial drainage" wells

were to be addressed with additional guidance as well as outreach and education to make sure they did not endanger USDWs.

The Agency extended this proposal for storm water drainage wells at industrial sites as part of the 1998 proposal. Specifically, the Agency proposed that industrial drainage wells would be subject to the proposed new requirement to meet MCLs at the point of injection, just like other kinds of Class V industrial wells. This new proposal, however, was predicated on EPA's ability to establish a clear and enforceable definition of an industrial drainage well that would be subject to the new requirement, versus a storm water drainage well at an industrial site that would not be subject to the new requirement because it had a low potential to receive chemical spills or highly contaminated drainage. The 1998 proposal specifically requested public comment on the practicality of making this distinction (see 63 FR 40598, July 29, 1998 for more detail).

#### 2. Public Comments

No comments were received that opposed EPA's 1995 proposed determination that additional Federal UIC regulations were not needed for storm water drainage wells. However, some commenters opposed EPA's approach to considering wells located in industrial settings to be industrial wells. In particular, some commenters asserted that industrial settings and acceptable barriers were not sufficiently well defined. Other commenters indicated that the barrier requirement was impractical, that sound management practices are at least as effective as physical barriers in preventing contaminants from reaching a well, and that storm water wells at service stations should not be regulated as industrial wells.

In response to the 1998 proposal, some commenters supported EPA's revised proposal that wells receiving storm water in industrial settings be considered storm water wells (rather than industrial wells) even if they had the potential to receive waste due to leaks, drips, and spills as long as the amounts of waste would be insignificant. Other commenters maintained that wells with the potential to receive any leaks, drips, or spills should be considered industrial wells. Many commenters expressed concern about EPA's proposed distinction between storm water drainage wells and industrial drainage wells at industrial facilities and requested that EPA make the distinction between the two types of wells more clear and definitive. Still

other commenters requested that all storm water wells be subject to stringent requirements, with some commenters specifically suggesting a ban of storm water drainage wells in source water protection areas, in part due to their vulnerability to spills and misuse.

### 3. 1999 Class V Study

The Study identified approximately 71,000 documented storm water drainage wells and estimated that approximately 248,000 may actually exist in the United States. Despite this large number of wells operating throughout the country, the Study reports only 12 documented incidents of contamination of ground water by storm water drainage wells; eight of these incidents were associated with storm water drainage from industrial/commercial activities. In addition, the Study identified storm water drainage wells as potentially vulnerable to spills or illicit discharges if they are located near roadways, parking lots, and areas of commercial/industrial activities. However, these problems are more hypothetical than actual. About half of the States with storm water drainage wells permit these wells by rule while the other half have individual permit/registration systems. Four States ban the wells entirely or under certain circumstances. In addition, when industrial stormwater drainage wells are found, EPA Regions or States require them to either close or get a permit.

### 4. Proposed Determination

Based on the information available at this time, including the Class V Study, EPA concludes that additional Federal regulations under the UIC program are not required at this time. The available information indicates that endangerment of USDWs by storm water drainage wells occurs only rarely, considering the relatively small number of contamination incidents relative to the number of wells known or estimated to exist. Although there is a concern that storm water drainage wells may be vulnerable to spills and illicit discharges, there is little evidence that this is a problem other than at industrial facilities. Even at industrial facilities, endangerment of USDWs by storm water drainage wells does not appear to be a widespread problem but instead is limited to isolated, relatively infrequent incidents. To a much lesser extent, this proposal is also based on the impracticability (as supported by public comments on the 1998 proposal) of distinguishing between industrial drainage wells that might be subject to additional regulations and other storm water drainage wells that would not.

Therefore, any attempt to target a new regulation to the few isolated cases that might pose an endangerment would also capture and impose needless burdens on many wells that are not a concern. EPA believes the situation would be better addressed by continuing to use existing authorities to close or otherwise address problem wells on an individual basis to prevent these wells from endangering USDWs. In doing so, the Agency will coordinate the efforts of the UIC program with those of the National Pollutant Discharge Elimination System (NPDES) storm water program.

### D. Large-Capacity Septic Systems

#### 1. 1995 Proposed Finding

EPA found that large-capacity septic systems (LCSSs) do not pose a significant national problem. This assessment is different from that contained in the 1987 Report to Congress on Class V Injection Wells (EPA 570/9-87-006) because that report considered systems that receive industrial and commercial wastes whereas LCSSs as now defined receive only sanitary waste.<sup>3</sup> In addition, the Report to Congress considered single-family systems, which are not within the scope of the UIC program. EPA also found in 1995 that insufficient spacing between systems was the major cause of ground water contamination from LCSSs. The Agency concluded that land use planning and siting requirements tailored to local conditions by State and local authorities, coupled with additional UIC program implementation and technical guidance, was the most effective approach to protecting USDWs.

#### 2. Public Comments

Some commenters supported EPA's proposed finding that no additional UIC regulations were required as well as the Agency's plan to issue guidance, while some other commenters argued that LCSSs should be excluded from UIC regulation altogether. Other commenters supported additional Federal regulations, including suggestions that EPA require ground water elevation monitoring, establish monitoring provisions and management strategies to address loss of system integrity, require individual permits, or ban septic systems in sensitive ground water areas. One commenter argued that State and local programs with tailored standards to prevent ground water endangerment by LCSSs were not in place.

<sup>3</sup> The Agency considers systems that do not receive solely sanitary waste to be industrial wells rather than LCSSs.

### 3. 1999 Class V Study

The Study identified three documented cases of ground water contamination incidents attributable to LCSSs and 24 documented cases of system failures where the extent of resulting ground water contamination, if any, is not known. Thus, the prevalence of contamination cases appears to be low relative to the number of systems in use (approximately 350,000), even if there are additional LCSS failures (which seems likely) that were not identified during the Study. The Study also found that LCSSs are used nationwide and that although all States have applicable regulations, the regulations vary from stringent siting, construction, and operating requirements to general construction permitting. State regulations also vary with respect to the size standard definitions that determine which systems are considered "large" (and thus subject to UIC regulation) rather than small.

### 4. Guidelines for Management of Onsite Wastewater Systems

On October 6, 2000, EPA published for review and comment a draft of its Guidelines for Management of Onsite/Decentralized Wastewater Systems and an outline for a guidance manual that will supplement the guidelines addressing all sizes of septic systems. EPA's development of these guidelines was described in the Clean Water Action Plan released by the Agency in 1998 and is in response to State agency reports that septic systems, which are predominantly single family septic systems, constitute the third most common source of ground water contamination because systems have failed due to inappropriate siting or design or inadequate long-term maintenance. Thus, the purpose of the guidelines is to raise the quality of management programs, establish minimum levels of activity, and institutionalize the concept of management for all sizes of septic systems. The guidelines apply to both existing and new septic systems and to systems of any size for residential and commercial wastewater treatment and disposal. The guidelines contain a set of model programs that rely on coordinating responsibilities and actions among the State, tribal or local regulatory agency, the management entity or service provider, and the system owner.

### 5. Proposed Determination

Based on the information available at this time and the actions the Agency is

currently undertaking to improve the performance of septic systems through the development of management guidance, EPA concludes that additional Federal regulations under the UIC program are not required at this time. This conclusion is reached because (1) based on the results of the Class V Study, actual contamination from these wells is relatively isolated and (2) an additional layer of Federal UIC requirements, placed on top of existing State and local LCSS regulations, would not be effective in further preventing endangerments from these wells. EPA believes that the development and implementation of management guidance is a preferable approach to development of additional UIC requirements for preventing endangerment of ground water by LCSSs for several reasons. First, the approach is comprehensive—it address all types and sizes of septic systems, of which LCSSs regulated under the UIC program are just one small part. Second, use of an integrated and comprehensive approach for all septic systems will expedite implementation and avoid potential confusion or disruption of current programs that have varying approaches to distinguishing “large” from “small” systems. Third, the management guidance approach is designed to accommodate regional differences in environmental sensitivity and the level of management activities needed to achieve water quality and public health protection. Finally, this approach avoids the additional administrative burden on States and the regulated community that would come from additional Federal UIC regulations that the Agency believes are not likely to be effective in preventing endangerments from these wells. This is chiefly due to the fact that existing State and local requirements are already more specifically tailored to local hydrologic conditions than new Federal UIC regulations could be. Adding another layer of generalized Federal requirements will not add any real safe guards in protecting underground sources of drinking water. EPA believes that any gap in environmental protection associated with these wells is caused by a lack of effective and proper implementation, not a lack of standards; thus additional standards would not address this problem. Rather, EPA’s approach is to spur better implementation of existing standards.

#### *E. Agricultural Drainage Wells*

##### **1. 1995 Proposed Finding**

Based on the 1987 Report to Congress, EPA found that agricultural drainage

wells have a high potential to contaminate USDWs because they may inject sediment, nutrients, pesticides, metals, and pathogens. The Agency also found that additional Federal UIC regulations for agricultural drainage wells were not likely to be effective in protecting USDWs in agricultural areas due to the wide range of contamination sources such as fertilizer and pesticide application and land use practices. In addition, EPA found that agricultural drainage wells were concentrated primarily in three States. As a result, EPA concluded that it could best achieve the goal of protecting USDWs from contamination by agricultural drainage wells by assisting States in promoting the use of best management practices (BMPs) that are best suited to local conditions and to addressing potential ground water contamination sources in a holistic fashion. EPA proposed not to develop any additional Federal UIC regulations applicable to agricultural drainage wells and instead to rely on technical guidance, existing authorities (such as requiring a permit under 40 CFR 144.12), and other Agency programs targeted at improving the quality of agricultural runoff.

##### **2. Public Comments**

One commenter opposed EPA’s finding that no new UIC regulations were necessary or appropriate given other EPA reports that indicated agricultural runoff was a widespread threat to drinking water quality in the midwest. Another commenter indicated that EPA’s finding failed to meet the requirements of the SDWA because the Agency may choose not to regulate only if it demonstrates that injection will not endanger USDWs. Two commenters indicated that the guidance document that EPA proposed to develop to facilitate implementation of BMPs should be developed with State input and public review and comment.

##### **3. 1999 Class V Study**

The Class V Study identified four documented cases of ground water contamination clearly attributable to agricultural drainage wells. Two of these cases occurred in the 1970’s. In addition, six other studies point to agricultural drainage wells as contributing to the more general problem of nitrate contamination in ground water in agricultural areas. The Study also found that the potential for agricultural drainage wells to endanger USDWs is highest when the wells are located near animal waste management areas such as manure lagoons and/or in settings where manure is land applied; however, no actual cases of

contamination involving spills or leaks from manure lagoons migrating through agricultural drainage wells are known to have occurred. In addition, the Study found that more than 95 percent of the approximately 1,100 documented wells in the country are concentrated in just five States (Idaho, Iowa, Ohio, Texas, and Minnesota). Four of these five States require individual permits/authorizations or ban the wells under certain circumstances. For example, Iowa bans agricultural drainage wells in areas that have anaerobic lagoons or earthen manure storage structures, and Minnesota bans wells that inject into an aquifer (i.e., saturated zone).

##### **4. Concentrated Animal Feeding Operations Proposal**

On December 15, 2000, the EPA Administrator signed proposed revisions to the NPDES permit regulations and effluent guidelines that would address the water quality impacts of manure, wastewater, and other process waters generated by concentrated animal feeding operations (CAFOs) (66 FR 2960, January 12, 2001). The proposal, which is a step in implementing the EPA and U.S. Department of Agriculture’s *Unified Strategy for Animal Feeding Operations* developed in March 1999, would apply to as many as 39,000 CAFOs across the country. According to alternate definitions that were proposed, CAFOs would be defined as facilities that maintain anywhere from 300 to more than 1,000 “animal units” in confinement, including cattle, swine, turkeys, chickens, horses, sheep or lambs, and ducks. The rule would apply to production areas at CAFOs (animal confinement areas, manure storage areas, raw material storage areas, and waste containment areas) and areas under the control of CAFO owners or operators where manure is land applied.

The proposal explicitly recognizes and addresses the risk of animal wastes from CAFOs migrating through agricultural drainage wells into ground water that has a direct hydrologic connection to surface waters. Specifically, the proposal would prohibit the application of animal wastes within 100 feet of sinkholes and intake structures or agricultural well heads. EPA requested comment on the presence of such features in crop land and the extent to which the 100-foot setback around such features would interfere with the land application of manure.

The proposal includes several other features that would have the effect of protecting ground water quality and reducing the endangerment associated

with agricultural drainage wells at or near CAFOs. For example, for animal confinement and manure storage areas, the proposal would adopt a zero discharge requirement with no overflow allowance for swine, veal, and poultry CAFOs, would require routine inspections of the production area to ensure that wastewater and manure handling and storage are functioning properly, and would require proper closure of manure storage units. The proposal also would require CAFO operators to land apply manure at proper agronomic rates, which would reduce the potential for excess manure and associated contaminants to migrate overland or underground into agricultural drainage wells.

#### 5. Proposed Determination

Although there are potential concerns associated with agricultural drainage wells, EPA does not believe the available information on contamination incidents and the potential for these wells to endanger USDWs suggests the need to develop additional Federal UIC requirements at this time. The incidence of contamination from these wells is very low. States where the vast majority of agricultural drainage wells are known to exist are already implementing effective programs. The CAFO proposal, if promulgated, would take a significant step to address the greatest remaining threat identified for these wells: the potential for contamination from large manure lagoons and from the land application of manure. EPA will continue to look for situations where these and other threats might exist and, if found, take action on a case-by-case basis to prevent endangerment using existing authorities.

#### F. Industrial Wells

##### 1. 1995 Proposed Finding

In the 1995 proposal, industrial wells were defined to include Class V motor vehicle waste disposal wells and other kinds of wells used to inject industrial and commercial waste that did not fall into one of the other proposed categories of Class V wells. Using this broad definition, the 1995 proposal found that some types of industrial wells may have a high potential to endanger USDWs. The Agency, however, proposed that these wells are best addressed using existing authorities and that additional Federal UIC regulations to protect USDWs would be inappropriate. One of the main reasons for this position was the diversity in the types of fluids being injected into industrial wells, which would make it difficult to establish one set of national

minimum requirements. Another important reason was a lack of facility-specific data that EPA would need to develop a tailored regulatory approach appropriate to the different kinds of industrial wells and their respective degrees of endangerment.

##### 2. Public Comments

While EPA received some comments supporting the 1995 proposal for industrial wells, such as from State agencies that believed they already had sufficient authority and knowledge to address these wells, a number of commenters opposed the 1995 approach. Much of the opposition came from the Sierra Club. As discussed in Section II.B above, the Sierra Club stated that the diversity of fluids injected into industrial wells is not grounds for a decision against additional Federal regulations and could be addressed by establishing targeted regulations for more narrowly defined subcategories of wells. The Sierra Club further commented that EPA has an obligation to collect any additional facility-specific data deemed necessary to perform its rulemaking duties.

##### 3. Subsequent Actions

Based on public comments on the 1995 proposal, and in accordance with the 1997 modified consent decree with the Sierra Club, EPA issued a revised proposal in 1998. This revision proposed to separate motor vehicle waste disposal wells from the other kinds of industrial wells considered in the 1995 notice, and to either ban motor vehicle waste disposal wells in ground water protection areas or to require such wells to be permitted. Other wells left in the industrial well category, when located in ground water protection areas, would be required to meet MCLs and other health-based standards at the point of injection, according to the 1998 proposal. The 1999 final rule expanded this approach for motor vehicle waste disposal wells to include Other Sensitive Ground Water Areas as defined by the States. A final decision on how to address the remaining industrial wells was delayed, mainly because of continuing public concern that the industrial well category was still too diverse and included many kinds of wells that do not endanger USDWs. Some State and EPA Regional UIC programs also maintained that additional Federal regulations for industrial wells were unwarranted because the programs already had ample authority and were already adequately addressing these wells.

Therefore, instead of finalizing the 1998 proposal for other kinds of industrial wells not addressed by the 1999 rule on motor vehicle waste disposal wells, EPA decided to conduct further review to decide whether additional Federal regulations are needed. This additional review consisted of the following three components, which are summarized in turn below: (1) public notice and review of additional information on contamination incidents potentially attributable to Class V industrial wells; (2) more detailed study of four specific types of Class V industrial wells; and (3) evaluation of Class V UIC program activities to address industrial wells using existing authorities.

The NODA EPA published on May 21, 1999 (64 FR 27741) presented additional information on, among other topics, contamination incidents potentially attributable to Class V industrial wells. That information was collected as part of the Class V UIC Study, which was still ongoing at the time, as well as from separate file searches conducted at the EPA Region II and Region VIII offices. All of the information was placed in EPA's Water Docket for public review when the NODA was published. As noted by several commenters on the NODA, and as determined upon review by EPA, these reported incidents do not provide compelling evidence of significant problems caused by Class V industrial wells. The primary limitation is that most of the incidents are associated with illegally operating Class IV (i.e., shallow hazardous waste) injection wells, which are generally prohibited under the current UIC regulations, rather than Class V wells. EPA recognizes that this problem can be addressed by greater enforcement of the existing ban of Class IV wells and does not necessarily require additional Federal regulations on Class V industrial wells. Moreover, many of the potential contamination incidents included in the NODA are more than 10 years old and not relevant to today's practices, are based on anecdotal information or secondary references of questionable credibility, involve contamination that remained below levels of concern, are not clearly linked to Class V wells as opposed to other pollutant sources, and involve only possible contamination rather than actual documented contamination. Altogether, information from the Class V Study placed in the NODA revealed only three documented cases of contamination that site-specific reports clearly attribute to the operation of Class V industrial wells, and two of these

cases were discovered in the 1970's and one was discovered in 1987. This is a very low contamination frequency considering the thousands of wells estimated to be operating, and it does not suggest a widespread current problem that warrants new Federal regulations.

The Class V Study also included a more detailed examination of four specific types of Class V industrial wells: (1) Wells used to dispose of washwater at carwashes that do not clean undercarriages or engines; (2) wells used to dispose of food preparation-related wastewater and food processing equipment or facility wash down water; (3) wells used to inject fluids from laundromats where no onsite dry cleaning is performed or where no organic solvents are used for laundering; and (4) wells used to inject noncontact cooling water that contains no additives and has not been chemically altered. EPA does not believe the information compiled for these well types, presented in Volumes 4, 6, 8, and 22, respectively, of the Class V Study report, demonstrates a potential to endanger that warrants additional regulation. For example, across all four well types, the Study found only one documented contamination incident (involving a lobster processing/holding facility in Maine) and two possible contamination incidents (involving carwashes in Hawaii). There remains concern about some wells at carwashes being vulnerable to spills or illicit discharges when an attendant is not onsite, but the Study did not find evidence showing that such problems associated with carwash wells are actually occurring and warrant the development of new UIC regulations.

EPA also reevaluated how Class V UIC primacy States in their regions address industrial wells using existing authorities. Class V primacy States have demonstrated the ability to use existing authorities to take some form of action to ensure that Class V industrial wells do not endanger USDWs. Some States have an outright ban of industrial wells while other States require permits for industrial wells. Some States ban the wells under some situations but permit them under others. When a previously unidentified industrial well is discovered, the existing UIC programs investigate the situation and decide on the best way to address it, which may include requiring the well to close or get a permit, depending on site-specific conditions and threats. Such follow up investigation and action is usually taken immediately after a Class V industrial well is discovered, or as soon thereafter as possible given a State's workload

relative to available resources to implement the Class V portion of their UIC program. Limited resources, not regulatory authorities, appears to be the primary factor that would constrain a primacy State from taking immediate action to address the risks posed by Class V industrial waste disposal wells. Therefore, an additional layer of Federal regulation would providing no real safe guards for protecting underground sources of drinking water.

In States where EPA directly implements the Class V portion of the UIC program, the EPA Regional Offices always address endangering Class V wells as soon as they are identified, as a matter of routine policy under the existing UIC regulations and authorities. Although the exact nature and timing of actions required vary from one Regional Office to the next, the DI programs typically require endangering industrial wells to close or get a permit, and require site investigation and remediation in response to any contamination that may have occurred. Such actions have been found to send a strong message to owners or operators of uninventoried industrial wells that they too should close their wells. EPA also communicates this message officially in outreach materials distributed to well owners and operators in DI programs and to staff in primacy States for them to use as part of their programs.

#### 4. Proposed Determination

The 1999 final rule included new stringent regulations targeting the subcategory of Class V industrial wells believed to have the highest potential to endanger USDWs at the time of the 1995 proposal: Motor vehicle waste disposal wells. Further review of the remaining types of Class V industrial wells (1) indicates that they have not been the source of frequent contamination incidents and (2) confirms that existing UIC programs in States where most industrial wells are known to exist are already using existing authorities to adequately address these wells and protect USDWs. As a result, EPA does not believe there is a need to develop additional Federal UIC regulations applicable to Class V industrial wells at this time. Instead, the Agency will continue to prevent endangerment from individual wells using existing authorities. This effort will include enforcing the existing prohibition of Class IV wells to prevent accidental or illicit abuses of Class V industrial wells and continuing to provide technical assistance and support to State UIC programs, where needed, to make sure these wells are being adequately

controlled. EPA also will explore additional opportunities to communicate UIC requirements and obligations to certain industry sectors in association with the effluent guideline program implemented under the Clean Water Act.

#### V. Comment Solicitation

EPA is soliciting public comment on the underlying data and rationale supporting this proposed determination that additional Federal UIC regulations are not needed at this time to prevent Class V wells from endangering underground sources of drinking water. This proposed determination is based on The Class V Underground Injection Control Study (EPA Document Number EPA/816-R-99-014, dated September 1999) and other information that has been placed in the public docket for comment. Also, EPA is soliciting any new data or information relevant to the findings in this proposed determination and the Class V injection well types it addresses.

Dated: April 30, 2001.

Diane C. Regas,

*Acting Assistant Administrator for Water.*

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

#### RIN 1018-AG13

### Endangered and Threatened Wildlife and Plants; Notice of New Schedule for Final Determination of Critical Habitat for Wintering Piping Plovers

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; notice of 60-day delay for final determination of critical habitat.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, announce a 60-day delay in making our final determination of critical habitat for wintering piping plovers, subject to further court proceedings. This additional time will allow us to complete the analyses required under section 4(b)(2) of the Endangered Species Act of 1973, as amended (Act), for designation of critical habitat. We will publish our final determination in the *Federal Register*.

**DATES:** We will make our final determination on the designation of

