

In the Public Interest

Volume 4 | Issue 1-2

Article 8

4-1-1983

Protection of Drinking Water: The UIC Program

Gary B. Cohen

United States Environmental Protection Agency Office of Water Enforcement and Permits

Follow this and additional works at: <https://digitalcommons.law.buffalo.edu/itpi>



Part of the [Environmental Law Commons](#)

Recommended Citation

Gary B. Cohen, *Protection of Drinking Water: The UIC Program*, 4 Buff. Env'tl. L.J. 44 (1983-1984).

Available at: <https://digitalcommons.law.buffalo.edu/itpi/vol4/iss1/8>

This Article is brought to you for free and open access by the Law Journals at Digital Commons @ University at Buffalo School of Law. It has been accepted for inclusion in In the Public Interest by an authorized editor of Digital Commons @ University at Buffalo School of Law. For more information, please contact lawscholar@buffalo.edu.

Protection of Drinking Water: The UIC Program

Cover Page Footnote

Illustration by K.M. Spencer

PROTECTION OF DRINKING WATER

The UIC Program

by Gary B. Cohen

Few people have an understanding of the Underground Injection Control (UIC) program under the Safe Drinking Water Act (SDWA), 42 U.S.C. 300f et seq., and the role it plays in protecting our underground sources of drinking water. With hazardous waste contamination monopolizing public attention of environmental matters¹ and with the limited resources of environmental groups directed toward "more important" programs, the UIC program has basically been a sleeper. Other than the concerns raised by state regulatory agencies and the regulated community, the UIC program has attracted little interest. This situation is likely to change once the program is fully implemented and its implications recognized.

Protection of our nation's underground sources of drinking water is essential to assure present and future supplies. Inherent in the development of the water law doctrines of riparian rights and prior appropriation has been the recognition of the nation's water as a valuable resource. Such doctrines, however, did not necessarily protect our underground sources of drinking water from contamination.

Nor did the federal laws provide the requisite degree of protection. Recognizing the deficiencies inherent in the existing laws, Congress enacted the Safe Drinking Water Act² in 1974 to assure that water supply systems serving the public meet minimum national standards for protection of human health.

Part B of the Safe Drinking Water Act, 42 U.S.C. 300(g) et seq., provides for the Public Water Systems

Gary B. Cohen is a J.D., 1980, State University of New York at Buffalo. Mr. Cohen is an attorney with the U.S. EPA Office of Water Enforcement and Permits.

This author is solely responsible for the views expressed herein, which are not those of the U.S. EPA or any other organization with which the author is affiliated.

(PWS) program, authorizing the Environmental Protection Agency (EPA) to establish primary and secondary drinking water regulations. These regulations set minimum criteria to assure that drinking water supplied by a public water supply do not adversely affect public health.

The UIC program is established in Part C, 42 U.S.C. 300(h) et seq., of the Act to assure that drinking water sources, whether actual or potential, are not rendered unfit by the underground injection of contaminants. Since the subsurface emplacement of fluids (underground injection) may contaminate aquifers, adequate controls are necessary to protect drinking water sources. By statute, underground injection endangers drinking water sources if:

such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminants, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation [under the PWS program] or may otherwise adversely affect the health of persons. [§1421(d)(2) SDWA]

STATE UIC PROGRAMS

Similar to other environmental programs, the UIC program allows states to obtain the responsibility to run their own program. The approved state program would assure compliance with the national standards and would be in lieu of a program directly administered by the EPA. Traditionally, the EPA first establishes the federal program, then approves the state programs which meet statutory and regulatory standards.³ The Safe Drinking Water Act, however, approached this traditional process from a different angle, ultimately requiring an extra step.

First, the EPA proposed and promulgated minimum requirements for effective state programs to prevent under-

PROTECTION OF DRINKING WATER

ground injection which endangers drinking water sources.⁴ States were given 270 days after the promulgation of the minimum standards to submit a program for approval to the EPA, with up to an additional 270-day extension for good cause. If a state fails to submit an application within the specified statutory time period, or if the EPA disapproves a state program, part thereof, or determines that a state no longer meets the minimum requirements, only then can the EPA first prescribe a UIC program for the state.

The Safe Drinking Water Act was enacted in December 1974 and envisioned the EPA proposing the minimum requirements within 180 days after enactment (June 1975). The EPA was to promulgate the minimum requirements within another 180 days (December 1975). States then would have 270 days after the date of promulgation, September 1976 (or June 1977 with a 270-day extension for good cause), to submit approvable programs. The EPA then had 90 days to prescribe a UIC program. Even in the most time-consuming of situations, UIC programs were to be proposed, if not already in effect, by September 1977.

Despite the federal government's, and especially the EPA's, reputation for meeting all statutory deadlines, somehow the agency was not able to live up to the high expectations of Congress. It was June 1979 before the minimum standards were fully proposed. The minimum requirements were not promulgated until May and June 1980.⁵ These requirements were then subject to legal challenge⁶ and subsequently resulted in the amendments of August 1981, 46 F.R. 43156 et seq., and February 1982, 47 F.R. 4992 et seq.

Approximately twenty states⁷ have UIC programs approved either in whole or in part. The remaining states and jurisdictions and unapproved portions of those states with partial program approval are without UIC programs until the EPA prescribes a federal direct implementation program. Injection activities, however, are not left entirely unregulated. Most states and jurisdictions have been running programs for years, but there is no assurance that these programs meet the minimum national threshold of protection which the Safe Drinking Water Act intended to establish.

During the summer of 1983, the EPA proposed 48 F.R. 40098, federal direct implementation UIC programs for twenty-three states and jurisdictions which do not have fully approved programs.⁸ Congress deserves some of the blame for regulations first being proposed nearly a decade after the passage of the Safe Drinking Water Act. All states and jurisdictions would have an effective UIC program in place by now if the EPA had not been required to go through that extensive round of rule making.

OIL AND GAS INJECTION WELLS

To protect underground sources of drinking water from contamination, the Safe Drinking Water Act is concerned with underground injection. By regulation, underground injection means "well injection." "Well injection" is defined as the subsurface emplacement of fluids through a well. A "well" is basically defined as any hole that is deeper than it is wide. Thus, any time the subsurface emplacement of fluids occurs through a hole that is deeper than it is wide, that activity is regulated by the UIC program.

Among the types of activities involved in underground injection are wells associated with conventional oil or natural gas production. Wells merely used to extract oil or gas are not covered by the UIC program. If, however, fluids are injected into wells to facilitate production or disposal of unwanted by-products (that is, brine), such activities are regulated.

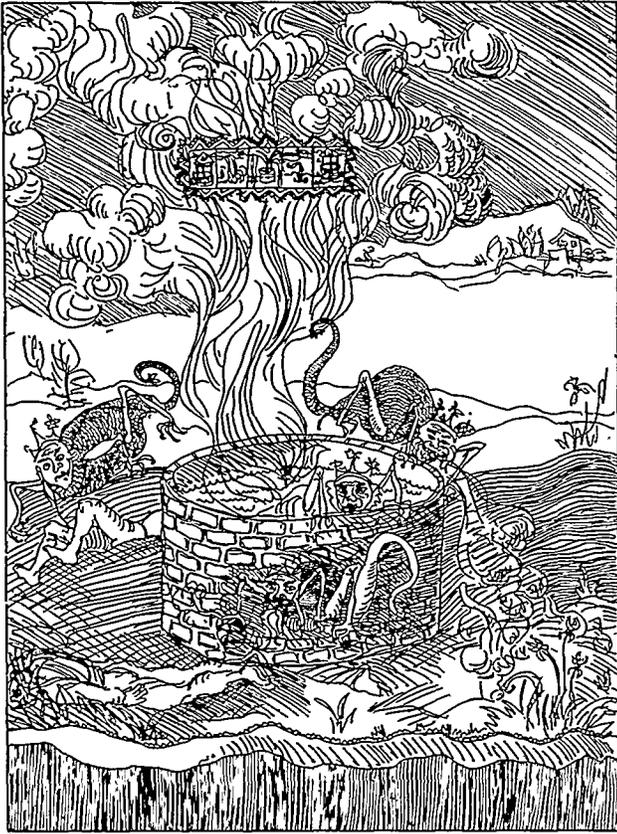
The Safe Drinking Water Act has always recognized the importance of such wells to our nation's energy needs and provided that the regulations prescribed may not:

interfere with or impede—(A) the underground injection of brine or other fluids which are brought to the surface in connection with oil or natural gas production, or (B) any underground injection for the secondary or tertiary recovery of oil or natural gas, unless such requirements are essential to assure that underground sources of drinking water will not be endangered by such injection. [§1421(b)(2)(A) SDWA]

The Safe Drinking Water Act further provides that the regulations should avoid unnecessarily disrupting state UIC programs which are in effect and being enforced in a substantial number of states (§1421[b][3][B][i]). The two statutory concerns of providing special considerations for wells associated with oil and gas production and of avoiding disruption of ongoing state regulatory programs were further manifested in the 1980 amendments to the Safe Drinking Water Act, Public Law 96-502.

Section 1425 of the 1980 amendments provides an alternative method for approval of state programs dealing with oil and gas wells.⁹ Such programs could be approved if they meet the statutory requirements of sections 1421(b)(1)(A) through (D) and are effective. The specific minimum requirements of the regulations established under §1421 no longer had to be demonstrated. Therefore, state oil and gas programs could be approved with minimal regu-

PROTECTION OF DRINKING WATER



latory or programmatic changes and well operators were spared "unnecessary" compliance costs.

The purpose of section 1425, according to the bill's author, Congressman Waxman (D-California), was to allow states to continue oil and gas programs unencumbered by additional federal requirements. The result was a dual standard for the review of state programs by the EPA.

State programs which do *not* cover oil and gas wells still have to meet the minimum requirements contained in 40 CFR Part 145. These regulations require the state program to have provisions at least as stringent as the minimum requirements listed in Part 145 (See, 40 CFR §145.11[b][1]).

State programs covering oil and gas wells, however, no longer have to meet the specifics of the EPA regulations but merely demonstrate conformance to the broad statutory standard. Section 1425 demonstrations can occur in any number of possible ways and need not parallel EPA regulations per se.

The EPA provided guidance (See, 46 F.R. 27333 et seq.), outlining a model state application and program which would be approved under §1425. State oil and gas

programs conforming to the guidance would, of course, be approved. Programs not consistent with the guidance would be reviewed on a case-by-case basis to determine adherence to requirements of the Act.

AUTHORIZATIONS OF INJECTION ACTIVITIES

Sections 1421(b)(1)(A) and (B) of the Safe Drinking Water Act require UIC programs to prohibit any underground injection which is not authorized by permit or rule. Basically, to obtain authorization by permit, the owner or operator of a well must submit a permit application to the director of the UIC program. A draft permit is then written, applying the regulatory standards to each well on a case-by-case basis. After public notice and the opportunity for a public hearing, the permit-issuing agency considers the draft permit in the light of any comments received. Necessary revisions are made, and the permit is issued.

Permits also can be written for wells on an area basis, rather than for each well individually (See, 40 CFR §144.33). Area permits only can be issued for wells in the same field or unit, operated by a single owner or operator, and used to inject fluids other than hazardous waste.

Wells also can be authorized by rule. The rule, a type of regulation, can authorize a class of wells to engage in injection activities and comply with substantive operating, monitoring, and reporting requirements. Usually there is minimal interaction between the regulatory agency and the owners and operators of wells authorized by rule. Different types of wells can be authorized by rule for different time periods. Eventually, owners or operators of such wells may be required to obtain a permit.

WELL CLASSIFICATION

Different injection activities carried out through a variety of injection wells pose various degrees of endangerment to aquifers. For this reason it was necessary to classify injection wells to provide for their unique and diverse nature.

Injection wells can fall into five classification areas (See, 40 CFR §144.6). The classification scheme is generally based upon the type of injection activity in which the well is involved as opposed to the nature of the injected fluids. The nature of the injected fluids can, however, change the classification if that well injects hazardous waste. The class in which a well is will be dispositive of the technical, permitting and authorization by rule requirements, that apply to that well.

PROTECTION OF DRINKING WATER

Class I wells are wells used to inject hazardous waste and are other industrial or municipal wells used to inject fluids beneath the lowermost formation containing, within one-quarter mile of the well bore, an underground source of drinking water (USDW). Class I wells, because of their depth and injection activities below the lowermost USDW, have specific technical requirements in 40 CFR Part 146, Subpart B. New class I wells must obtain a permit prior to construction and operation. Existing wells can be authorized by rule for up to five years after approval or promulgation of the UIC program, after which they must obtain a permit. Class I permits can be issued for a term of no longer than ten years.

Class II wells inject fluids: (1) which are brought to the surface in connection with conventional oil or natural gas production; (2) for enhanced recovery of oil or natural gas; or (3) for the storage of hydrocarbons which are liquid at standard temperature and pressure. Consistent with the intent of the Safe Drinking Water Act to avoid interference with oil and gas production, an existing enhanced recovery or hydrocarbon storage well can be authorized by rule for the life of the well. A new enhanced recovery or hydrocarbon storage well, although requiring a permit, can be issued for the life of the facility.

All other existing class II wells (that is, salt water disposal wells) can be authorized by rule for up to five years after approval or promulgation of the UIC program. After that time, a permit must be obtained which can be issued for the life of the well. Class II wells or projects in existing fields, or projects which are authorized by rule, may continue normal operations until permitted, which includes the construction, operation, and plugging and abandonment of wells. All other new class II wells must obtain permits.

The technical requirements for all class II wells can be found in 40 CFR Part 146, Subpart C. Consistent with the statutory mandate that the regulations should not interfere or impede oil or gas production unless essential to assure protection of underground sources of drinking water, the regulatory requirements for class II wells provide a great degree of flexibility.

Class III wells inject for the purpose of extracting minerals. This includes processes such as the mining of sulfur by the Frasch process, in situ production of uranium or other metals, and solution mining of salts or potash. The technical requirements for class III wells can be found in 40 CFR Part 146, Subpart D. Existing class III wells can be authorized by rule for up to five years after approval or promulgation of the UIC program. After that time, a permit must be obtained. New class III wells must obtain a permit prior to construction and operation. Class III permits can be

The prime objective of the UIC program is to assure that the subsurface emplacement of fluids does not endanger present or potential drinking water sources.

issued for the life of the facility.

If a well is injecting hazardous waste it is either a class I or class IV well. For example, if an oil or gas disposal well is injecting hazardous waste, it is no longer classified as class II but rather as a class I or a class IV well. As stated earlier, class I wells inject hazardous waste beneath the lowermost aquifers. Class IV wells, on the other hand, are the shallow hazardous waste wells. They dispose of hazardous waste (or radioactive waste) either into or above a formation which, within one quarter mile of the well, contains a USDW. Also included as class IV wells are those hazardous waste wells which are not otherwise classified as class I or class IV; for example, wells used to dispose of hazardous wastes into or above a formation which contains an aquifer which has been exempted.

Class IV wells which inject directly into a USDW, commonly referred to as "mainliners," must be phased out within six months of approval or promulgation of the UIC program in a state. New construction of mainliners is prohibited. The EPA has not yet decided how to regulate class IV wells which do not inject directly into a USDW. Those in existence can be authorized by rule until six months after a UIC program incorporates the EPA's regulatory decision.

The last class of wells, class V, are all wells not included in classes I through IV. Class V wells include air conditioning return flow wells, cesspools, cooling water return flow wells, drainage wells, aquifer recharge wells, sand backfill wells, septic systems, radioactive waste disposal wells other than class IV, wells associated with the recovery of geothermal energy, wells used for solution mining of conventional mining, wells used in experimental technologies, and wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

There are no technical design nor operation requirements applicable to class V wells. Class V wells are subject to the prohibition of movement of fluids in 40 CFR §144.12 and can be required to obtain a permit on a case-by-case basis if the director deems one necessary. Although some of

PROTECTION OF DRINKING WATER

these wells may have the potential to contaminate underground sources of drinking water, the EPA did not have the data necessary to determine if further regulatory requirements were appropriate. For that reason, the agency has authorized all class V wells by rule and is undertaking an inventory and assessment to determine what regulatory action, if any, is warranted (See, 40 CFR §§144.15 and 146.52). After the study is done, the EPA may decide to leave these wells basically unregulated or to place certain types of class V wells into other classes if the technical requirements are appropriate. Another option would be to develop additional classifications with requirements tailored specifically for unique types of well injection practices.

UNDERGROUND SOURCE OF DRINKING WATER

The prime objective of the UIC program is to assure that the subsurface emplacement of fluids does not endanger present or potential drinking water sources. Thus, one of the major elements of the program is identifying those aquifers to be protected. An underground source of drinking water (USDW) is defined in 40 CFR §144.3 as an aquifer or its portion:

- (a)(1) which supplies any public water system; or
- (2) which contains a sufficient quantity of ground water to supply a public water system; and
 - (i) currently supplies drinking water for human consumption; or
 - (ii) contains fewer than 10,000 mg/1 total dissolved solids; and which is not an exempted aquifer.

The director of a state UIC program can identify those aquifers or portions of aquifers which are USDWs. Even if the director fails to specifically identify a USDW, any aquifer which meets the definition in 40 CFR §146.3 is nevertheless a USDW. It would seem that the inaction of a director to identify USDWs in that state does not relieve him of his statutory and regulatory obligations to protect the aquifer as a USDW if the aquifer meets the USDW criteria. It is not until such aquifer is exempted that the aquifer is no longer entitled to protection as a USDW.

While an aquifer technically may meet the USDW criteria, other considerations may preclude its use as a drinking water source. The regulations thus provide for an exemption from the classification as a USDW. An aquifer may be exempted under the criteria of 40 CFR §146.4 if:

- (a) It does not currently serve as a source of drinking water; and
- (b) It cannot now and will not in the future serve as a source of drinking water because:
 - (1) it is mineral, hydrocarbon or geothermal energy producing . . . ;
 - (2) it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
 - (3) it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
 - (4) it is located over a class III well mining area subject to subsidence or catastrophic collapse; or
- (c) The Total Dissolved Solids content of the ground water is more than 3,000 and less than 10,000 mg/1 and it is not reasonably expected to supply a public water system.

The fact that an aquifer is used for drinking water purposes by any one person would entitle it to protection as a USDW, as long as it supplies a public water system or contains a sufficient quantity of water to supply a public water system. The aquifer cannot be exempted since one criterion for exempting a USDW is that it does not currently serve as a source of drinking water. Any other USDW could be exempted if it meets the criteria under §146.4.

What effect does exemption have on an aquifer and associated injection activity? Are exempted aquifers no longer protected under the UIC program? The fact that an aquifer is exempted does not exempt from the UIC program well injections into, through, or above that aquifer. It is a common misconception that such activities are not subject to the program. The UIC regulations prohibit any underground injection, except as authorized by permit or rule (See, 40 CFR §144.11).

An operator of an injection well who is injecting into, through, or above an exempted aquifer still has to have his injection operation authorized by permit or rule. Although there may be no underlying USDW, regulatory requirements may be necessary to protect surrounding USDWs from being contaminated by injection fluids which have migrated. Injections which do not occur into, through, or above a USDW, however, may not warrant the degree of protection normally required. Therefore, the director of a UIC program has the authority to waive certain requirements for such protections (See, 40 CFR §144.16).

PROTECTION OF DRINKING WATER

Whether or not an aquifer is classified as a USDW is at the heart of the regulatory program and will determine the degree of protection the aquifer will receive. For example, 40 CFR §144.12 prohibits any injection activity that allows movement of fluid containing any contaminant into a USDW if the presence of that contaminant may cause a violation of a primary drinking water regulation under the PWS program or may otherwise adversely affect the health of persons. A well which injects hazardous waste that moves into a USDW would be in violation of this standard, whereas such activity would not be permitted per se if the aquifer was exempted and thus not considered a USDW. In addition, if any water quality monitoring of a class I, II, or III well shows unauthorized movement of a contaminant into a USDW, the director is to prescribe additional requirements as are necessary to prevent such movement, including closure of the injection well.

Furthermore, central to the regulation of class I, II, and III injection wells is mechanical integrity. A well has mechanical integrity if there is no significant leak in the casing, tubing, or packer and if there is no significant fluid movement into a USDW through vertical channels adjacent to the injection well bore (See, CFR §146.8). Owners and operators of new and existing class I, II, and III wells are required to demonstrate mechanical integrity. Thus, categorization of an aquifer as a USDW would be germane to a demonstration of mechanical integrity.

Another aspect of the UIC program which exemplifies the effect of the USDW classification is the corrective action requirement of 40 CFR §144.55. Applicants for class I, II (other than existing), and III injection well permits are required to identify wells which penetrate the injection zone within the injection well's area of review (one-quarter mile radius around the well or the distance as computed by an approved formula under 40 CFR §146.6). Wells that are improperly sealed, completed, or abandoned can serve as conduits of contamination to USDWs. Thus, the applicant must submit a plan consisting of the steps necessary to prevent movement of fluids into USDWs from improperly sealed, completed, or abandoned wells. If an aquifer is exempted, it is not protected by the corrective action plan.

In addition, some of the construction and operation requirements in 40 CFR Part 146 are performance standards based upon protection of a USDW. For example, class I wells must be cased and cemented to prevent the movement of fluids into or between USDWs (See, §146.12[b]). The maximum injection pressures for class I, II, and III wells are to be determined to assure that no movement of fluid into a USDW would result (See, §§146.13[a][1], 146.23[a][1], and 146.33[a][1]). Thus, whether or not an

It is surprising that environmentalists and public interest groups have shown such little interest in the UIC program. Their lack of concern . . . seems inconsistent with the attention given hazardous waste issues.

aquifer is deemed a USDW is of utmost importance for many aspects of the UIC program.

If the issue arises as to whether an aquifer is a USDW, it is unclear who has the burden of going forward. It would seem that an applicant for a permit would have the burden of showing that an aquifer is not a USDW as part of the burden imposed upon him to show that the underground injection will not endanger drinking water sources (See, §1421[b][1][B][i] SDWA). On the other hand, if a well were authorized by rule, the issue would probably arise in the context of an enforcement action. The regulatory agency, in such instances, would probably have the burden of showing that the aquifer is a USDW.

HAZARDOUS WASTE

It is surprising that environmentalists and public interest groups have shown such little interest in the UIC program. Their lack of concern with the program seems inconsistent with the attention given hazardous waste issues. Both the UIC program and the hazardous waste program under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq., have jurisdiction over wells which inject hazardous waste. Hazardous waste injection wells dispose of a high volume of hazardous waste. Once hazardous waste has contaminated an aquifer, it is often extremely difficult, if not impossible, to clean that aquifer. It is likely that any court-imposed remedy would require the polluter (if even identifiable or held liable) to provide alternative water supply sources rather than aquifer restoration. (See generally, *United States v. Price*, 523 F.Supp. 1055, 17 ERC 1994 [D.N.J. 1981].) Resources might be better spent assuring that these problems do not arise in the first place.

The injection of hazardous waste is clearly within the ambit of both programs. Section 3005 of RCRA prohibits the disposal, which includes injection, of hazardous waste unless authorized by permit (or if a facility qualifies for in-

PROTECTION OF DRINKING WATER

terim status under §3005[e]). Section 1421 of SDWA requires UIC programs to prohibit any underground injection unless authorized by permit or rule.

To avoid duplicative requirements, the EPA initially envisioned that surface facilities associated with the injection of hazardous waste (for example, storage prior to injection) would be regulated under the RCRA. The hazardous waste injection wells, whether class I or IV, would be regulated under the UIC program. The separation point between the two programs, in order to prevent overlapping regulations, was to be the cut-off valve at the well head (See, 45 F.R. 42478).

The intent was that the RCRA would regulate hazardous waste injection wells only until there was a UIC program approved or prescribed for a state (See, 40 CFR 270.64). It was expected that such programs would not be in place for another year or two. During that period, existing hazardous waste wells would be subject to the interim status requirements (40 CFR Part 265) under the RCRA until permitted. New hazardous waste wells would have to obtain a RCRA permit. Once there was an effective UIC program in a state, the injection wells would then be regulated under the UIC.

To avoid requiring the injector to go through a duplicative permitting process and still meet the statutory requirement of obtaining a permit under §3005 of RCRA, the RCRA regulations provided a permit by rule for hazardous waste injection wells. A permit by rule is a regulation which deems a facility to have a RCRA permit if it meets certain requirements. It is similar to the UIC authorization by rule, except that a RCRA permit by rule is recognized as a type of "permit" whereas a UIC authorization by rule is not (See, definition of "permit" in 40 CFR §§270.2 and 144.3). A hazardous waste well would be recognized as having a RCRA permit by rule if the owner or operator has UIC permit for underground injection issued by an approved state or EPA program and complies with the conditions of that permit and some additional referenced requirements (See, 40 CFR §270.60).

The scheme envisioned by the EPA for coordinating regulation of hazardous waste wells under the two different statutes never quite worked out. Under §3005(e) of the RCRA, "existing" hazardous waste wells could obtain interim status.¹⁰ New hazardous waste wells could not begin construction or operation unless permitted (See, 40 CFR §270.10[f]). Before such permits could be issued, the agency had to promulgate the technical operating, design, and construction requirements. Without these standards, permits could not be written. The result was an implicit ban on all new hazardous waste wells.

The RCRA regulations for hazardous waste wells were supposed to be part of the land disposal regulations. It was, however, a time-consuming endeavor for the agency to promulgate the land disposal package. Recognizing the need to avoid the ban on new land disposal facilities, temporary standards were promulgated in February 1981 (See, CFR Part 267, 46 F.R. 12414 et seq.). These standards were general in nature but at least allowed for the construction of new facilities until detailed regulations could be developed. The Part 267 standards only addressed class I wells. New class IV wells, therefore, were still effectively banned.

The detailed land disposal permitting regulations eventually promulgated in July 1982, 47 F.R. 32349, did not address any hazardous waste wells. New class I wells can still be permitted under the Part 267 standards but also will require a UIC permit once an effective program is in place.

Since the minimum requirements for UIC programs provided for a ban on class IV wells injecting into a USDW, there was no need to provide RCRA permitting regulations for such wells. Although there was no ban under the UIC program of class IV wells which inject above a USDW, the RCRA regulations did not address those wells because of the interaction between the RCRA and UIC. The EPA, thus, did not promulgate regulations for such wells separately under the RCRA program, but rather preferred to issue them in a manner ensuring consistency between the two programs.

Although the UIC program promulgated technical standards for class I wells (See, 40 CFR Part 146, Subpart B), it failed to come to grips with a regulatory approach for class IV wells. In the proposed consolidated regulations, the UIC program included a ban on all class IV wells (See, 40 CFR §122.45, 44 F.R. 34285). The final regulations, however, only prohibited class IV wells which inject hazardous waste into USDWs (mainliners).

Three primary reasons given by the EPA for not banning class IV wells which inject above a USDW were: (1) aquifers may be so deep that they may never serve as drinking water sources; (2) the particular injection may not have an impact on the quality of the drinking water source; and (3) since there is overlapping jurisdiction under the RCRA and SDWA, there is a need for the technical standards to be consistent. The ban was not imposed, and the EPA deferred promulgating technical standards to assure consistency with policy decisions to be made under the RCRA (See, 40 CFR Part 146, Subpart E, 45 F.R. 3331 et seq. and 42485 et seq.).

To avoid unintentionally banning such wells, the UIC authorization by rule regulation was amended to allow existing wells to continue operation (See, 47 F.R. 4998).

PROTECTION OF DRINKING WATER

Although the ban was still being considered as a viable option, authorizing the wells by rule avoided predetermining the issue. Since lack of standards under the RCRA implicitly banned new class IV wells, the UIC program provided a consistent approach and did not authorize those wells by rule.

The "waiting to coordinate" approach taken by the EPA for class IV wells which inject above a USDW leaves such existing wells basically unregulated. Under the RCRA, they will have interim status. Under the UIC program, these wells are authorized by rule until six months after the EPA promulgates criteria. The general performance standard of 40 CFR §144.12 (prohibition of movement of fluids into USDWs) would apply and, if the well injects hazardous waste required to be accompanied by a manifest (off-site facilities), then there are a few requirements applicable under 40 CFR §144.14. Beyond such minimal standards, no specific technical requirements currently exist for constructing, operating, monitoring, or reporting.

The potential deleterious effect posed to our nation's drinking water resources by unregulated hazardous waste wells should have already motivated the EPA to determine the severity of the problem and to take appropriate steps rather than allow this area to remain in a perpetual state of limbo. In the light of the EPA's inaction, Congress has considered a ban of class IV wells in the SDWA and RCRA reauthorization bills. The EPA is also overcoming inertia; in the federal direct implementation package, the banning of class IV wells has again been proposed. Regardless of the mechanism, there is need for final decisions.

FOOTNOTES

1. For example, Love Canal, once an obscure area in Niagara Falls, New York, essentially became a household word symbolizing the hazardous waste problem.

2. For concise discussions of the statutory deficiencies which led to the enactment of the Safe Drinking Water Act, see H.R. Rep. No. 1185, 93d Cong., 2d Sess. 3-9 (1974) reprinted in Environmental and Natural Resources Policy Division of the Library of Congress, A Legislative

History of the Safe Drinking Water Act, 97th Cong., 2d Sess., 535-541 (Comm. Print No. 9, 1982), and W. Rodgers, Environmental Law, 372-373 (1977).

3. Under §402 of the Clean Water Act, for example, the EPA established a federal NPDES program and standards for approving state NPDES programs at the same time. Thus, there was already a federal program in effect if a state does not submit an approvable program. Similarly, under §3006(b) of the Resource Conservation and Recovery Act (RCRA), the EPA can authorize state hazardous waste programs. The EPA-administered hazardous waste program is in effect until a state receives final authorization.

4. At the same time, the EPA was to list in the Federal Register all the states in which the EPA had determined a UIC program would be necessary. The EPA listed the fifty states, the District of Columbia, and the territories and possessions of the United States.

5. The UIC was proposed in August 1976 and was repropoed in May and June 1979. Permitting requirements, standards for state programs, and permitting procedures were promulgated in May 1980 as part of the consolidated regulations which coordinated five environmental programs, 40 CFR Parts 122, 123, and 124, 45 F.R. 33290 et seq. Parts 122 and 123 were deconsolidated April 1, 1983. The UIC portions can now be found in 40 CFR Parts 144 and 145, 48 F.R. 14189 et seq. UIC technical requirements were promulgated in June 1978 in 40 CFR 146, 45 F.R. 42472 et seq.

6. *Natural Resources Defense Council v. EPA* (D.C. Cir., No. 80-1607 and consolidated cases) and *American Petroleum Institute v. EPA* (D.C. Cir., No. 80-1875A and consolidated cases).

7. As of November 1, 1981, the following states have been approved (approval is an ongoing process): Alabama, Arkansas, California, Florida, Guam, Louisiana, Maine, Massachusetts, Mississippi, Nebraska, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Texas, Utah, Wisconsin, and Wyoming.

8. The lawsuit eventually filed by the National Wildlife Federation against the EPA (*National Wildlife Federation v. Ruckelshaus*, No. 83-1333 D. Col., filed July 26, 1983) for not yet prescribing a federal UIC program was an additional incentive for EPA action. Although there are additional states and jurisdictions without fully approved programs, they are making significant progress toward developing approvable programs.

9. Section 1425 specifically applies to state programs regulating brine or other fluids which are brought to the surface in connection with oil or natural gas production or any underground injection for the secondary or tertiary recovery of oil or natural gas.

10. In May 1980, the EPA proposed interim status regulations for underground injection wells in 40 CFR Part 265, Subpart R. Final regulations were never promulgated. Although injection wells with interim status have to comply with the general requirements of 40 CFR Part 265, Subparts A through E, there are no specific technical requirements which apply to the wells.

