

well sites in South Florida, which are most likely attributable to the presence of natural conduits for flow in the subsurface, suggest that the injection zones used by these municipal wells are not sufficiently separated from overlying USDWs by a confining layer to prevent fluid movement upward into the USDW. The injectate from these wells is, therefore, entering into a USDW. Injection zones in South Florida often share a "degree of lithologic homogeneity" (as specified in the 40 CFR 144.3 definition of "formation") with the overlying "confining layers" and USDWs (*i.e.*, each consists of carbonate sequences). In some locations, the injection zones, "confining layers," and USDWs may be said to exist within one formation. It is possible that a well injecting at such a location may not be appropriately classified as a Class I well.

Information collected for the relative risk assessment raises a question as to whether certain South Florida municipal disposal wells should have been classified as Class V at the time they were first permitted. In particular, all of the lithologic units of the upper Floridan Aquifer in Pinellas County and the lower Floridan Aquifer in Miami-Dade consist of limestone and dolomite that have shown evidence of solution cavities and fractures. These natural conduits for fluid flow raise a question as to whether lithologic units in these aquifers are effective confining layers and whether the injection zones and overlying USDWs are in different and distinct formations, as they were believed to be when the wells were originally sited, constructed, and permitted as Class I wells.

V. Solicitation of Comment

In the July 7, 2000, proposed rule (65 FR 42234), EPA proposed regulatory options that would allow for continued wastewater injection by existing Class I municipal wells that have caused or may cause fluid movement in specific areas of Florida. The relative risk assessment described in this notice and in a companion notice appearing elsewhere in today's **Federal Register** contains some new information regarding the potential risks of deep well injection of municipal wastewater in South Florida. The Agency is soliciting comment on whether and how the findings of the relative risk assessment should inform the Agency in developing the final rule for wells currently classified as Class I deep municipal wells in South Florida.

In addition to the issues discussed above, the Agency is soliciting comment on the following three issues:

1. The Agency solicits comment on an alternative option for defining the appropriate level of wastewater treatment required for continued injection in deep municipal wells in South Florida. The proposed rule solicited comment on four levels of advanced wastewater treatment, nutrient removal, and high-level disinfection that, under Option 1 and by the year 2015 under Option 2, would be required of facilities operating wells that have caused or may cause fluid movement. The alternatives proposed under Option 1 were: (1) Treatment to 10–24 mg/l biochemical oxygen demand (BOD) with disinfection; (2) treatment to 10–24 mg/l BOD with disinfection and nutrient removal; (3) treatment to <10 mg/l BOD with disinfection; and (4) treatment to <10 mg/l BOD with disinfection and nutrient removal. These levels were used by the 1996 Clean Water Needs Survey Manual to delineate and cost levels of advanced treatment. To achieve high-level disinfection, the proposal said owners and/or operators must allow the wastewater to remain in contact with at least 1.0 mg/l of free chlorine for at least 15 minutes of contact with no fecal coliform.

Several commenters suggested that the proposed standards for BOD removal are inappropriate for the protection of ground water for the purpose of protecting human health. These commenters stated that BOD levels are typically used for the protection of ecological values in surface water, not the protection of human health associated with drinking ground water. The commenters also pointed out that the main stressor of concern in the injectate is pathogens, not BOD. Separately, commenters noted that EPA's proposed definition of high-level disinfection differs from the State of Florida's definition of the same term in Rule 62–600.440, F.A.C., which commenters thought would result in confusion. Other commenters suggested that any new EPA wastewater treatment requirements should be consistent with corresponding state requirements. For example, Florida's regulations for waste treatment and disinfection applicable to reclaimed water that may come into human contact (Rule 62–610.460, F.A.C.) and ground water disposal by underground injection in Class V wells (Rule 62–600.540(2) and (Rule 62–600.440(5), F.A.C.) are similar to the more advanced levels of treatment envisioned under Option 1 of the proposed rule that require filtration before disinfection. As stated in the Florida regulations, by removing TSS

before disinfection, filtration serves to increase the ability of the disinfection process to inactivate viruses and other pathogens. Filtration also serves as the primary barrier for removal of protozoan pathogens (*Cryptosporidium*, *Giardia*, and others).

Based on these comments, EPA is now considering and soliciting comments on prescribing wastewater treatment requirements in language that differs from the four alternatives proposed on July 7, 2000 but conforms with relevant state requirements. The Agency is not asking for additional comment on the four levels of advanced wastewater treatment, nutrient removal, and disinfection described in the proposal. Under this alternative, the Agency would simply adopt, in lieu of the four standards in the proposal, the Florida standards in Rule 62–610.460, F.A.C. (for waste treatment and disinfection applicable to reclaimed water that may come into contact with people) or the standards in Rule 62–600.540(2) and Rule 62–600.440(5), F.A.C. (for ground water disposal by underground injection in Class V wells). Specifically, EPA would require advanced wastewater treatment that results in treated water meeting, at a minimum, secondary treatment and high-level disinfection as defined in the Florida regulations. Also, filtration would be required for TSS control prior to disinfection, which would specify that the treated wastewater not contain more than 5.0 mg/l of TSS before the application of the disinfectant. EPA believes that this treatment standard might offer some important advantages over the alternatives proposed before. In particular, it might better address the risks associated with pathogens, and it would be consistent with the standards already adopted and implemented in Florida for reclaimed water and wastewater disposed of through Class V injection wells, which are part of domestic wastewater treatment systems.

The Agency asks commenters if this standard for advanced treatment and high-level disinfection should be specified in the final rule and requests that commenters describe the type of treatment that would be necessary to achieve the performance standards (*i.e.*, national primary drinking water regulations and other health-based standards). Although the Agency believes that the design and construction costs of this option are equivalent to those for the earlier proposed treatment options that required treated effluent concentration of less than 10 milligrams per liter of BOD, the Agency requests that