



# THE MEMPHIS DEPOT TENNESSEE

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## ADMINISTRATIVE RECORD COVER SHEET

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## Toxic seep heightens risk level to city water

By Tom Charlier  
The Commercial Appeal

Industrial spills, leaking storage tanks and toxic waste dumps have contaminated groundwater at nearly four dozen sites in the Memphis area, according to a federal report that portrays new threats to the city's drinking water.

So far, the contaminants — ranging from toxic metals to pesticides to cancer-causing fuel constituents — have been largely restricted to shallow water levels not used for drinking. However, the report said, recently discovered pathways could draw them into the high-quality aquifer that supplies the city.

The report by the U.S. Geological Survey is the latest in series that have shattered long-held beliefs that the Memphis Sand aquifer is secure from surface pollution. The new findings "emphasize the vulnerability of the Memphis aquifer to contamination," it states.

The report could give greater momentum to the development of local and regional strategies for protecting groundwater, officials say. Those efforts will likely produce calls for stronger land-use controls in areas where the contamination threat is gravest.

"It confirms more than in the past that we have a problem, and a lot of potential problems," said John Smith, a Memphis State University civil engineering professor and member of the Shelby County Groundwater Quality Control Board.

The USGS report was based on records from more than 500 well logs and data compiled by state and federal pollution control agencies.

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## Water

It fixes the location of documented contamination sites, calculates water levels within the Memphis Sand and further defines the territory where the aquifer is unprotected because there are no overlapping layers of thick clay above it.

The number of contamination sites stands at 44, the report says. But the figure will no doubt rise "as the years go on and we get more data," said Bill Parks, the USGS hydrologist who prepared the report.

Most of the contamination is limited to the uppermost water table, according to the report. There have been only isolated instances of actual contamination in the Memphis Sand — occurring after industrial spills in South Memphis and Collierville and leading to the shutdown of some public wells. However, the report states there's a pronounced danger that more contaminants could work their way into the vital aquifer supplying up to 200 million gallons of water a day for the city.

Some contamination sites, including the old Peapack Farm landfill on Walnut Grove Road, lie on or near areas where there is little clay. Others are on top of the well fields from which Memphis Light, Gas & Water Division draws water, the report states.

Even if they're not within the well fields, "many potential sources of contamination" are located in areas where groundwater flows toward the fields, the report states. The contaminants are drawn toward the wells by pressures from the heavy pumping needed to meet Memphis's water needs.

However, continual testing ensures the water distributed to customers by LG&W is free of contaminants, officials say.

Bill Crawford, LG&W executive vice president and chairman of the groundwater board, said he hadn't finished reading the report last week. "It does heighten our concern in that area," he said of the document.

The report says underground storage tanks are responsible for most of the contamination in the area. At facilities ranging from service stations to the plant that publishes The Commercial Appeal, leaking tanks have released cancer-causing benzene and other dangerous gasoline constituents into groundwater.

Gleno Birdwell, field office manager for the state Division of Underground Tanks, said his staff still receives reports of new leaks. Currently, 185 tank sites in Shelby County are undergoing cleanup, he said, but most don't involve groundwater con-

tamination. "One can hope that we've gotten the majority of the worst ones," Birdwell said.

Compared with tank leaks, old waste dumps have tainted groundwater with a much wider variety of hazardous chemicals, the report shows. Everything from DDT to lead to polychlorinated biphenyls (PCBs) has oozed from the North Hollywood Dump along the Wolf River, the Jackson Pits near Memphis International Airport, Defense Depot Memphis and other sites.

Industrial spills have accounted for seven cases of contamination, some involving such cancer-causing compounds as vinyl chloride and trichloroethylene.

Smith, of the groundwater board, said the USGS findings underscore the need for greater controls on development. Working with the Land-Use Control Board, groundwater officials could prevent chemical plants and other potentially dangerous

facilities from being built in areas where the aquifer is exposed, he said.

"We've got to be cognizant of what we're doing whenever we put anything below ground or on ground that we don't create any excessive risk," Smith said.

Amid the ominous findings, Smith and other officials have suggested that Memphis draw some of its water from the Fort Pillow Sand — a much deeper,

though lower-quality, aquifer. That would reduce the pressures drawing contaminants toward the Memphis Sand, they say.

Even with the contamination threat, the Memphis Sand remains one of the city's greatest resources, officials say. "It's a very good aquifer," Parks said.

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