

Hydrology - Open-File Report 8

Ground-Water Conditions in Western Horry County, South Carolina

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SUMMARY AND CONCLUSIONS

In western Horry County, the prospects for developing a large-scale, ground-water-supplied public water system are excellent. At least one and possibly three formations exist with aquifers worthy of development. These are the Black Creek Formation, and possibly the Middendorf and shallow formations. It may be possible to construct up to three wells per site, depending upon local geology, to tap each of these formations.

With increasing distance inland, the Black Creek Formation has been found to become more transmissive and to contain water of improved quality. Yields of properly constructed wells can be expected to range from 500 to 700 gpm, and possibly higher. The Myrtle Beach cone of depression is distant enough to have only limited impact.

The towns of Johnsonville and Hemingway currently withdraw water from Middendorf wells, and a test well at Brittons Neck found freshwater in the top sand of this formation at a depth of 750 ft. The wells at Hemingway and Johnsonville are reported to yield 700-to-750 gpm with specific capacities of between 10 and 13 gpm per foot of drawdown.

The shallow floodplain deposits along the Little Pee Dee River may contain significant sand and gravel deposits to make shallow infiltration wells feasible. These deposits may receive recharge directly from the river and would be unaffected by pumpage from the deeper aquifers. Each infiltration well site may be suitable for a 300-to 500-ft Black Creek well and a 600- to 800-ft Middendorf well. This triple siting would allow for treatment and on-site mixing prior to transmission of the water to produce net low-sodium, fluoride, and iron concentrations.

The shallow formations in other parts of Horry County are comprised of a sandy, shelly limestone locally called coquina. These coquina deposits may be capable of yielding significant volumes of water to properly constructed wells, provided the wells are managed to limit local interference problems, and to limit the potential for subsidence and sinkhole collapse events within their cones of depression.

Copies of this report are available in the SCDNR's Columbia office.