Test wells TA Bf 99 and 100 were drilled between August 16 and 19, 2010 to a depth of 240 and 140 feet (ft), respectively. Ditch samples were collected at 10-ft intervals and gross lithologic descriptions were made. Geophysical logs (gamma radiation, 16- and 64-inch resistivity, single-point resistivity, self-potential, and 6-ft lateral) were run in the open hole by the USGS Maryland Water Science Center. The holes were drilled to 9 5/8-inch diameter and well screens (4.5-inch diameter SDR-17 PVC; 0.02-inch slot) were installed from 178 to 188 ft in TA Bf 99, and 110 to 130 ft in TA Bf 100. Both wells include 5-ft cellars. The wells were cased to the surface with 4.5-inch SDR-17 PVC pipe. The deepest test well (TA Bf 99) penetrated the Surficial aquifer, the Calvert aquifer system, and a portion of the Calvert confining unit. The wells were screened in two intervals of the Calvert aquifer system, which at this site consists of fine-grained, muddy sands with abundant weathered shell material. The completed wells were developed using compressed air to remove drilling fluid and to develop the well screen. TA Bf 99 could not be cleared of formation mud and was non-productive. A 24-hour aquifer test was conducted on TA Bf 100 on September 1, 2010 at a constant rate of 12 gallons per minute (gpm). During the test, water levels were measured in the...
observation well (TA Bf 99) and in the production well. The specific capacity of TA Bf 100 at the end of the pumping phase was 0.32 gpm per foot of drawdown. The transmissivity calculated by the Cooper-Jacob method for the recovery phase of the test was 90 ft²/day. The static water level in TA Bf 99 and TA Bf 100 measured prior to the aquifer test was approximately 39 ft above sea level. At the end of the aquifer test, the water level in the deeper sand (TA Bf 99) declined 6.2 ft. During continuous monitoring over several months, water levels changed in response to atmospheric pressure and possibly local withdrawals.

Water samples from TA Bf 100 were collected during the aquifer test. Samples were analyzed for field parameters (pH, alkalinity, specific conductance, dissolved oxygen), major ions, nutrients, metals, and radionuclides. None of the U.S. Environmental Protection Agency’s Primary Drinking Water Standard were exceeded in samples collected from the wells.

<table>
<thead>
<tr>
<th>Well number</th>
<th>Permit number</th>
<th>Screened interval (feet below land surface)</th>
<th>Aquifer</th>
<th>Pumping rate (gallons per minute)</th>
<th>Transmissivity (feet squared per day)</th>
<th>pH</th>
<th>Total dissolved solids (residue on evaporation @ 180° C.) (milligrams per liter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA Bf 99</td>
<td>TA-95-1559</td>
<td>178 - 188</td>
<td>Calvert</td>
<td>No pumping test conducted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA Bf 100</td>
<td>TA-95-1560</td>
<td>110 - 130</td>
<td>Calvert</td>
<td>12</td>
<td>90</td>
<td>7.6</td>
<td>248</td>
</tr>
</tbody>
</table>

For more information, contact David C. Andreasen, Maryland Geological Survey, dandreasen@dnr.state.md.us

DNR Publication Number: 12-9192011-527, December, 2011

Other Contact Information: DNR: Toll free in Maryland: 1-877-620-8DNR; Maryland Geological Survey: 410-554-5500; TTY users call via the MD Relay

Internet Address: www.dnr.Maryland.gov

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