In most cases, where the thickness exceeds 50 feet, water in fair quantity is apt to be encountered, and at depths exceeding 100 feet very large amounts are in many cases obtained.

The height to which the water will rise in the wells varies greatly in the different parts of the area, depending upon a variety of conditions which serve as controlling factors in artesian pressure. As a rule, however, flows are obtained only on ground whose surface is lower than the general level of the surrounding region.

With occasional exceptions, the quality of the water obtained from the Black Creek ("Bladen") formation is at least fairly potable, and much of it is excellent. Iron and sulphur in various combinations are the two most abundant mineral constituents in the waters. In places iron is present in excessive amounts, rendering the water unpalatable. The presence of these two constituents is not surprising when it is remembered that iron sulphide in the form of pyrite or marcasite, or both, is almost universally present throughout the beds of the formation. In the upper part of the formation marine calcareous beds are in places intercalated between the laminated portions, and wells drawing on waters which come in contact with these calcareous layers will be high in lime, and therefore hard.

Peedee sand.—Beds of the Peedee formation outcrop in a belt extending from Greenville in Pitt County southwestward to the South Carolina line. At the former place the width is probably less than a mile, but it gradually widens to the southwest, amounting to about 40 miles at its southern extremity. (See geologic map, Plate XVII, in pocket.) The formation rests conformably upon the underlying Black Creek formation. The beds dip gently to the southeast and along most of the southeastern border of the belt of outcrop pass unconformably beneath overlying Eocene limestones.

The materials are almost entirely of marine origin. They consist of grayish or greenish-gray sands, as a rule more or less micaceous and glauconitic, and dark marine clays. The sand layers are in places indurated, the cement being either calcium or silica. Fossil shells are common throughout the beds, rendering them as a rule more or less calcareous. The importance of the formation as an aquifer would not be suspected from the nature of the materials as they appear in most of the surface exposures, for they are as a rule of close, compact texture, apparently unfavorable for water circulation. But well borings at many places have shown that loose-textured, porous sand layers are present, and in fact some of the most important water horizons in the Coastal Plain are furnished by this formation.