

DISCUSSION

This map indicates the possibilities for artificial recharge into both the surficial sediments of Quaternary age (exclusive of soils) and the older, immediately underlying sediments. However, the map can also be used to determine where natural recharge might be entering the ground most readily in those areas relatively free from impermeable cover. The surficial materials include marsh and Delaware River sediments of Holocene age and older Pleistocene sediments of the Columbia Formation. The Columbia Formation is composed of poorly sorted sands with some gravels, silts, and occasional clays. The unit is one of the most important ground-water reservoirs in New Castle County.

In the northern one-third of the map area the Columbia Formation is immediately underlain by the Potomac Formation of Early to Late Cretaceous age. The Potomac Formation consists of silts and clays with interbeds of well-sorted fine to coarse sands. Progressively younger units of various lithologies underlie the Columbia Formation to the south.

The potential for recharging water into these various units was based on both the physical properties of the sediments and on water-table elevations and ground-water flow directions. Physical properties were determined from field samples, geologic and driller's logs, and geophysical logs. Previously published reports were used to determine water levels.

Most of the interpretations shown on the map represent the best judgment of the authors at the time of their investigations. Some later modifications have been made by the editor to take into account new data or reinterpretation of older data. Detailed studies to collect additional data may be required at specific sites.

EXPLANATION

Possibility for recharge to sediments lying beneath sediments of Quaternary age:

- I Good (sandy)
- II Fair (silty or clayey sand)
- III Poor (silt-clay)

Possibility for recharge to surficial sediments of Quaternary age (exclusive of soils):

- A Good (sandy)
- B Fair (silty or clayey sand)
- C Poor (silt-clay)

Thickness of Quaternary age sediments (usually the water-table aquifer):

- 1 Thick (>40') - potentially a high yielding aquifer
- 2 Thin (<40') - generally useful for low yielding wells

Relative Water-table elevations and flow directions:

- a Probable recharge area
- b Probable discharge area

Map area with best possible rating (IA1a)

Tailings pond or spoil disposal areas

Photorevised areas on base map

Disturbed surface

REFERENCES

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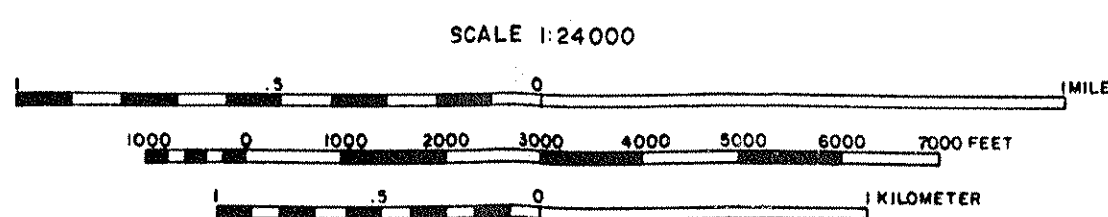
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POTENTIAL FOR GROUND-WATER RECHARGE IN THE COASTAL PLAIN OF CENTRAL NEW CASTLE COUNTY, DELAWARE

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CONTOUR INTERVAL 10 FEET (APPROX. 3 METERS)

