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Release of Data Showing
Recovery of Ground-Water Levels
From June 1947 to December 1948 in
Brooklyn, New York

By

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Prepared in cooperation with the
~~STATE~~ — ?
NEW YORK WATER POWER AND CONTROL COMMISSION

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Since January, 1932, the Geological Survey, United States Department of the Interior, has cooperated with the New York State Water Power and Control Commission in making an intensive study of ground water conditions in Western Long Island. The continuing program has included the systematic measurement of water levels in many observation wells in Kings (Brooklyn) and Queens Counties. The purpose of these measurements has been to determine periodically the position of the ground-water table which has been declining for many years ^{as a result of} ~~due to~~ overpumping in Western Long Island. Data indicating the extent of intrusion of sea water beneath the area has ^{also} ~~also~~ been collected for many years.

The data on water levels, pumpage, and chloride ^{content} presented in this preliminary release have been obtained as part of the above-mentioned cooperative program which, however, was somewhat expanded for the purpose of recording, in detail, the recovery of water levels in Kings County ^{after} following a large reduction in pumpage in June 1947.

As a result of condemnation proceedings by the City of New York, the New York Water Service Corporation on June 29 and 30, 1947, shut off permanently its ground-water supply plant which served about 350,000 inhabitants of the Flatbush section of Brooklyn (Kings County). This private company, the last and largest of the many that formerly pumped water from wells for public supply in Brooklyn, had operated about 35 wells, which tapped the water table and several underlying artesian aquifers beneath its franchise area of about 6 square miles. For the ^{past} ~~past~~ few years, withdrawals by this concern had ranged between

27 and 28 million gallons per day, having increased gradually since 1904, when ^{this amounted to} pumpage was only 5 million gallons per day. The shutdown of the Flatbush wells represented a reduction ^{of more than 60 percent} in the total net ground-water withdrawals of over 60 percent in the County. As a result, the water table which has lain below sea level for many years recovered rapidly (as much as 15 feet at some ^{as well as in amount} places) during the 18-month period from June 1947 to December 1948. Similar recoveries have also been observed in the artesian wells. ⁴ Water-level data, contour maps, profiles, and hydrographs of ground-water levels for the period from 1903 to 1948 are included in this report, as well as graphs of pumpage of ground water. Data are also given to indicate the encroachment of sea water into ^{the} franchise area of the New York Water Service Corporation just before the general shutdown of pumpage ^{being} by this company.

Not needed to report

the table can be considered one form of illustration

ILLUSTRATIONS AND TABLE

- Figure 1. Pumpage for public water supply and net withdrawals for industrial uses in Kings County, in 1941-48.
- Figure 2. Chloride content of ground water in the New York Water Service Corporation wells in Kings County, N.Y.
- Figure 3. The position of the water table in Kings and Queens Counties, New York in 1903, 1933, 1936, and 1943.
- Figure 4. Index map showing water-table wells and cross-section lines in Kings and Queens Counties, N.Y.
- Figures 5a, 5b, 5c. Position of water table in Kings and Queens Counties, N.Y., in December 1947; June 1948; and December 1948.
- Figures 6a, 6b, 6c. Recovery of water table in Kings and Queens Counties, N.Y., from June 1947 to December 1947; from June 1947 to June 1948; and from June 1947 to December 1948.
- Figure 7. Profiles of water-table levels in Kings and Queens Counties, N.Y., in 1903, 1947, and 1948.
- Figure 8. Monthly water levels in selected water-table wells on Long Island for 1932-48.
- Figure 9. Index map showing artesian wells and cross-section lines in Kings and Queens Counties, N.Y.
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- Figure 11. Comparison of water levels in water-table and artesian wells in Kings County, N.Y.
- Figure 12. Profiles of artesian levels in Kings and Queens Counties, N.Y., in 1947 and 1948.
- Figure 13. Hydrograph showing monthly water levels in artesian wells in Kings and Queens Counties, N.Y., during 1947-48.
- Table 1. Ground water levels in Kings and Queens Counties, N.Y., in 1947-48.