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Digital Geodata Series

DGS13-1 Computer Workbook Summarizing New Jersey Withdrawals and Discharges on a HUC11 Basis

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Abstract

This is a Microsoft Excel 2010™ workbook which documents fresh-water withdrawals and discharges in New Jersey on a HUC11 ((11-digit Hydrologic Unit Code) basis. This version has 1990 through 2009 data.

The user specifies both a Watershed Management Area and a HUC11 watershed of interest. The MS Excel™ workbook then automatically populates a series of tables and figures with data relevant for that HUC11.

This is intended for use by a technical audience familiar with water-supply issues in New Jersey. It assumes the reader has a general understanding of water withdrawal and discharge practices as well as the watersheds of New Jersey. This workbook is a user-friendly display of the water withdrawal, use, and return data available in detail in NJGS Digital Geodata Series [DGS 10-3](#): New Jersey water transfer model withdrawal, use, and return data summaries.

Withdrawal and use data are presented for potable, commercial, industrial, agricultural, and power-generation uses of more than 100,000 gallons of water a day. This is the cutoff volume for regulation by the N.J. Department of Environmental Protection (NJDEP), Bureau of Water Allocation and Well Permitting (BWAWP). Withdrawals are broken out into the source of the water (surface water or ground water). The summaries also include estimates of private domestic well use.

This report summarizes fresh-water withdrawals, and discharges on a HUC11 basis. The accuracy of the results depends on the accuracy of withdrawal locations and on GIS coverages. The best available coverages were used but inaccuracies still exist. It is hoped that by summarizing on a HUC11 scale location errors will diminish in relative magnitude to other components of the water budget at that scale.

For the purposes of this report, water that is neither evaporated nor exported from the basin is assumed to be returned to the HUC11. This volume of returned water is the non-consumed portion of water use.

The non-consumed portion of water used for potable supply is returned to the HUC11 after treatment to appropriate standards in a sanitary sewer treatment plant. These water may be returned as groundwater, fresh surface water, or saline surface water. The return of non-consumed portions of other water uses is assumed to be to fresh surface water.

HUC11 watersheds are defined by the United States Geological Survey (USGS). There are 151 HUC11 watersheds in New Jersey ranging from 3 to 349 square miles in size, with an average 59 square miles. Each HUC11 incorporates a number of HUC14s subwatersheds. Water withdrawals and transfers are quantified internally on a HUC14 basis (NJGWS, 2010), but are reported here on a HUC11 basis.

These data are stored in the U.S. Geological Survey [Open-File Report 03-0197](#): Data model and relational database design for the New Jersey water-transfer data system (NJWaTr). The underlying model was populated with data by the New Jersey Geological and Water Survey and a simplified version of NJWaTr are available at

NJGS Digital Geodata Series [DGS 10-3](#): New Jersey water transfer model withdrawal, use, and return data summaries. Due to a ongoing data-accuracy evaluation process this product is considered more accurate than earlier reports.



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